



**BURNSIDE**

**Hydrogeological Assessment and  
Water Balance  
4134 16<sup>th</sup> Avenue, Markham**

**Sixteenth Land Holdings Inc.**

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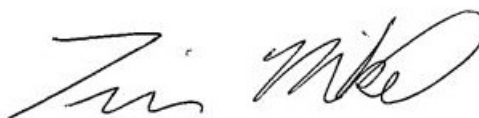
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## 1.0 Introduction

Sixteenth Land Holdings Inc. has retained R.J. Burnside & Associates Limited (Burnside) to prepare this Hydrogeological Assessment and Water Balance report in support of an Official Plan Amendment (OPA) application to permit the development of a residential community on the Subject Property municipally known as 4134 16<sup>th</sup> Avenue, in the City of Markham, Region of York. The property is located in Part Lots 16, 17 and 18, Concession 5. The Subject Property is a total of 168.64 hectares (416.72 acres), and is located on the north side of 16<sup>th</sup> Avenue, on the west side of Kennedy Road, and has a small amount of frontage onto the east side of Warden Avenue as well (Figure 1). There is existing urban development surrounding the property on all sides.

Except for an area adjacent to Kennedy Road, the balance of the property is currently used by its former owner York Downs Golf & Country Club for a golf course. The golf course has been in operation since York Downs Golf & Country Club opened in the early 1970s. The current Official Plan designation of 'Private Open Space' for the areas outside of the valleylands reflects this historic golf course use.

Sixteenth Land Holdings Inc. intends to develop the property for a residential community and is submitting an OPA to re-designate the developable portion of the property from 'Private Open Space' to appropriate urban residential designations to permit the development of residential uses.

This report has been prepared in conjunction with the OPA application in support of the re-designation as proposed in the draft OPA and in the Planning Report (Gatzios Planning, October 2017). Please refer to the draft OPA and to the Planning Report for a description of the proposed Official Plan land use designations for the property.

The proposed residential development is detailed in the two Draft Plan of Subdivision applications that accompany the OPA application. There is one Draft Plan of Subdivision for the east portion of the property and one for the west portion of the property. The west Draft Plan of Subdivision also contains the valleylands associated with both the Berczy Creek and the Bruce Creek. References in this report to the two draft plans or to specific lots/blocks will include 'East' or 'West' to denote the appropriate area.

The purpose of the hydrogeological study is to characterize the geological and hydrogeological conditions on the property, identify potential development impacts on the local groundwater and surface water conditions, and to complete water balance calculations. The water balance calculations provide input to the stormwater management plans to be developed for the property by Stantec and provide recharge

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targets for the design of Low Impact Development (LID) measures to maintain, where possible, key hydrogeological functions.

## **1.1 Scope of Work**

A comprehensive Terms of Reference (TOR) was developed in consultation with the City and TRCA for the MESP for the Subject Property (July 12, 2016). The scope of work for this study was specifically designed to fulfill the hydrogeological and water balance requirements as per the TOR and included completion of the following tasks:

1. Review of published geological and hydrogeological information: A review of existing mapping for the area was completed, including topography (Figure 2), surficial geology (Figure 3) and bedrock geology.
2. Review of the Ministry of the Environment and Climate Change (MOECC) well records: The MOECC maintains a database that provides geological records of water supply wells drilled in the province. A list of the available records for local wells is provided in Appendix A and the well locations are shown on Figure 5. It is noted that the well locations listed in the MOECC records are approximations only and may not be representative of the precise well locations in the field.
3. Review of the geotechnical report and liaison with the project geotechnical engineers (Golder Associates) for the installation of groundwater monitoring wells across the Subject Property: In 2014, Golder drilled 34 boreholes and installed 10 monitoring wells to investigate the soil and groundwater conditions for a preliminary geotechnical investigation. In 2016, Golder drilled an additional 20 boreholes and installed 18 monitoring wells to investigate the soil and groundwater conditions for a geotechnical investigation and the hydrogeological assessment. Lastly, Golder drilled an additional 63 boreholes and installed 9 monitoring wells in 2017 to further assess the geotechnical and hydrogeological setting. The locations of the monitoring wells and boreholes are shown on Figure 5 and copies of the borehole logs are provided in Appendix B.
4. Piezometer installations: Fifteen piezometers (three single piezometers and six nests of two piezometers installed at different depths) were installed in 2016 along Bruce Creek, Berczy Creek, golf course ponds and within wetlands to investigate the shallow groundwater conditions. An additional six piezometers (three nests of two piezometers installed at different depths) were installed in 2017 to provide additional shallow groundwater information in the vicinity of the Unit 18 wetland area. The locations of the piezometers are shown on Figure 4.
5. Review of grainsize analyses: Analyses were completed by the geotechnical consultants on representative soil samples obtained during the geotechnical

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investigation. These data were reviewed to characterize the surficial sediments and estimate the hydraulic conductivity of the soils encountered. Copies of the soil grainsize analyses are provided in Appendix C.

6. Hydraulic conductivity testing: Single well response tests were completed in seven groundwater monitoring wells (BH16-5, BH16-6, BH16-9, BH16-12s, BH16-13d, BH16-14 and BH16-15) to assess the in situ hydraulic conductivity of the shallow soils. The hydraulic conductivity field testing results are provided in Appendix D.
7. Monitoring of groundwater levels: Monitoring is currently on-going to measure the depth to the water table and assess seasonal groundwater flow conditions. Groundwater level measurements have been obtained in the site monitoring wells and piezometers monthly from March 2016 to May 2017 and on a quarterly basis to date. Automatic water level recorders (dataloggers) were installed in six of the on-site monitoring wells (BH16-5, BH16-7, BH16-12d, BH16-13d, BH16-15d and BH16-16) and in 14 of the piezometers (PZ4s/d, PZ5s/d, PZ8s/d, PZ9s/d, PZ10s/d, PZ11s/d, and PZ12s/d) in order to record continuous water level fluctuations. The groundwater monitoring data and hydrographs are provided in Appendix E.
8. Monitoring of surface water: Surface water observations and spot-flow measurements have been obtained monthly from April 2016 to May 2017 and on a quarterly basis to date at three locations along Bruce Creek and two locations along Berczy Creek (Figure 4). Three additional flow monitoring stations were added in the spring of 2017 to further assess surface water flows associated with the Unit 18 and Unit 23/33 features (Figure 4). Flow was estimated using a stream area-velocity method. Automatic water level recorders (dataloggers) were installed at staff gauges SG4, SG5, SG8 and SG9 as well as at culverts SG C-1 and SG C-2. The surface water monitoring data are summarized in Appendix F.
9. Water quality testing: Groundwater samples were collected from two monitoring wells (BH16-5 and BH16-15s) and one surface water sample was collected from both the Bruce Creek and Berczy Creek monitoring stations (SS1 and SG7, respectively) to characterize the baseline water quality across the Subject Property. The water samples were submitted to a qualified laboratory for analysis of general quality indicators (e.g., pH, hardness, and conductivity), basic ions (including chloride and nitrate) and selected metals. The testing results are provided in Appendix G.
10. Water balance calculations: A spreadsheet model has been used to calculate the pre-development water balance (based on existing land use conditions) and

post-development water balance (based on the proposed development concept) to assess the potential impacts of land development on the local groundwater recharge conditions. Separate calculations were completed for the East Draft Plan and West Draft Plan areas for the overall Subject Property as requested by the TRCA. A feature based water balance was also completed specifically for the catchment area of the Woodlot/Wetland feature located within the East Draft Plan area as requested by the TRCA. The detailed water balance calculations are provided in Appendix H.

## **2.0 Physical Setting**

### **2.1 Physiography and Topography**

The study area is located within a physiographic region known as the Peel Plain (Chapman and Putnam, 1984). The Peel Plain consists of a thin veneer of lacustrine silt and clay deposited over glacial till which has a flat to rolling topography with generally more incised slopes in the vicinity of the watercourses (Figure 2). The land surface regionally slopes to the south, with a maximum relief amplitude across the Subject Property of about 22 m. The highest elevations within the Subject Property are about 198 masl in the north sloping downwards to 174 masl in the southeast (Figure 2).

### **2.2 Drainage**

The Subject Property is located in the Rouge River watershed within the jurisdiction of the Toronto and Region Conservation Authority (TRCA). The Subject Property is traversed by both Bruce Creek and Berczy Creek (Figure 2) which bisect the Subject Property and flow southeast. Bruce Creek enters the northern boundary of the property approximately 750 m east of Warden Avenue and 825 m south of Major Mackenzie Drive, meandering close to 2.2 km before exiting the property at 16<sup>th</sup> Avenue, approximately 400 m west of Kennedy Road. Berczy Creek enters the western property boundary at Warden Avenue and immediately exits the Subject Property flowing southeast through the existing residential area. Berczy Creek re-enters the Subject Property approximately 550 m east of Warden Avenue and 325 m north of 16<sup>th</sup> Avenue, flowing approximately 500 m before exiting the property at 16<sup>th</sup> Avenue, approximately 700 m east of Warden Avenue. The southwest corner of the Subject Property drains to the southwest, towards Berczy Creek, and the remainder of the property drains to Bruce Creek (Figure 2).

#### **2.2.1 Bruce Creek**

Flow monitoring has been conducted monthly in Bruce Creek from April 2016 to May 2017 and quarterly to date at three monitoring locations: SS1 at the northern boundary of the Subject Property, SS2 located midway along the Creek in vicinity of the centre of



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the Subject Property, and SS3 at the southern boundary of the Subject Property as shown on Figure 4. Monitoring of flows on this watercourse indicate that Bruce Creek is perennial. Flow rates observed along the Creek ranged between a low of 42 L/s at SS2 on August 31, 2016 six days following a rainfall event and a high of 1,005 L/s at SS3 on February 27, 2017 two days following a rainfall event (Table F-1, Appendix F).

The flow in Bruce Creek was generally found to decrease from SS1 to SS2 then increase from SS2 to SS3. The loss in flow between SS1 and SS2 was found to range from 7 L/s to 132 L/s and may be attributed to flows from Bruce Creek diverted to a series of golf course ponds via culverts located along the Creek valley (Figure 2). Ponds C and D are connected to the flows of Bruce Creek via a culvert system; Bruce Creek contributes flow to Pond C; Pond C flows to Pond D; and Pond D drains back to Bruce Creek. The gain in flow between SS2 and SS3 was found to range from 9 L/s on October 28, 2016, one day following a rainfall event to 109 L/s on May 16, 2017 during spring runoff and unusually high precipitation conditions. As will be discussed in Section 2.3.3 of this report, the Bruce Creek valley appears to intersect a sand layer found beneath the Subject Property. Groundwater levels observed in the monitoring wells (discussed below in Sections 2.4.3 and 2.4.6), suggests that groundwater is discharging to Bruce Creek from the sand layer (refer to Section 2.3.3) and contributes baseflow to the watercourse.

It is noted that data collected on May 20, 2016 does not reflect the pattern observed during the other events reported above and measurement inaccuracy is suspected. Flow was observed to increase from SS1 to SS2 by approximately 10 L/s, and then decrease from SS2 to SS3 by approximately 32 L/s during the May 20, 2016 monitoring event.

## **2.2.2 Berczy Creek**

Monthly flow monitoring was also conducted in Berczy Creek from April 2016 to May 2017 and quarterly to date at SS5 located along Warden Avenue, south of Major Mackenzie and SS4 located in the southwest corner of the Subject Property as shown on Figure 4. There are two tributaries between SS5 and SS4 that also contribute flow to Berczy Creek. Flow rates observed along Berczy Creek ranged between a low of 18 L/s on August 31, 2016, six days following a rainfall event and a high of 729 L/s on February 27, 2017, two days following a rainfall event (Table F-1, Appendix F). Flow in Berczy Creek was generally found to increase from SS5 (upstream) to SS4 (downstream). The gain in flow was found to range from 10 L/s on June 29, 2016 to 108 L/s on May 16, 2017. It should also be noted that the surface flow monitoring stations along the Bruce and Berczy Creeks were observed to be frozen or partially frozen in December 2016. Furthermore, flow measurements could not be conducted safely due to the dangerously high water levels observed on several site visits made in

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the winter and spring of 2017, as a result of the spring freshet and abnormally high precipitation levels.

### 2.2.3 Wetland Hydroperiod Monitoring

Monitoring of select wetland features was completed during the spring and summer of 2017 to determine the hydroperiod of these features. Five monitoring locations were selected and are indicated as W-YD1, W-YD2, W-YD3, W-YD4 and W-YD5 on Figure 4. The monitoring consisted of weekly visits through the spring to photograph the features, observe the depth and extent of surface water at each feature, and where present, obtain groundwater level measurements in piezometers and surface water flow measurements. The results of the wetland monitoring are provided in Tables F-3A to F-3E in Appendix F, and illustrate the following:

- Wetland W-YD1 is located in a mineral meadow marsh in a low-lying area near the western limits of the West Draft Plan area (refer to Figure 4). Observations at W-YD1 found this area to generally have saturated soils; however, no standing water was observed (Table F-3A, Appendix F). The saturated area continued to decrease through the spring and was found to go dry in late-May. Piezometer nest PZ9s/d is located within the mineral meadow marsh. Groundwater levels were observed to be dry in PZ9s until January 2017, rising to about 0.1 m below ground surface (mbgs) in May 2017 and declining into the summer months of 2017. Groundwater levels in PZ9d ranged from dry in October and November of 2016 to about 0.2 m above ground surface (mags) in January 2017 (Figure E-44, Appendix E). Groundwater levels in the shallow piezometer are noted to be consistently above those in the deep piezometer, suggesting a downward gradient (i.e., recharge conditions) beneath the feature. The exception to this is in January 2017 when the deep piezometer water level was observed to be approximately 0.2 mags while the shallow was 0.2 mbgs.
- Location W-YD2 is located at staff gauge SG4 within a meadow marsh community (Unit 18) in the East Draft Plan area (Figure 4). Surface water draining to the wetland from a number of outlets converge to a defined channel and flow southwest through the feature where it outlets through a culvert. Flow rates observed at SG4 during hydroperiod monitoring ranged from standing water to 17 L/s during a precipitation event (Table F-3B, Appendix F). When surface water was not flowing, the standing water levels measured in SG4 indicated the channel to be up to 0.37 m deep (Figure E-39, Appendix E). The saturated area continued to decrease through the spring and into the summer. Piezometer nest PZ4s/d is located within the northern portion of the feature where the hydroperiod monitoring was completed. The groundwater level in the shallow piezometer has been seasonally variable, ranging between approximately 0.2 m mbgs in May 2016 to about 0.9 mbgs in October 2016 (Figure E-39, Appendix E). The datalogger in the deeper piezometer has groundwater levels ranging between approximately 1.5 mbgs in March 2016 to

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about 0.15 mbgs in July of 2017. Generally the hydraulic gradient is downwards indicative of recharge conditions. It is interpreted that when standing water occurs in the feature during spring runoff or heavy rainfall periods that the feature has a recharge function. Upward gradients were observed on occasion in 2016 during the very dry summer and fall periods. This apparent reversal in gradient is likely a result of increased evapotranspiration and a quicker response of the shallower monitor to the dry conditions than the deeper piezometer in such tight soils.

- Location W-YD3 is located within the reed canary grass mineral meadow marsh in the East Draft Plan area as identified on Figure 4. The ground in vicinity of SG5 and PZ5s/d is observed to be saturated and have numerous small pools of standing water measured to be as deep as 0.11 m (Figure E-40, Appendix E). The saturated area continued to decrease through the spring and standing water was no longer observed in mid-June; however, the ground was still observed to be slightly saturated in early-July (Table F-3C, Appendix F). Groundwater levels measured in PZ5s/d were below ground surface at the beginning of monitoring and have steadily risen to near or above ground surface into the summer of 2017. Groundwater levels in PZ5s have ranged from about 0.9 mbgs to 0.1 mbgs and from 1.4 mbgs to 0.1 mags in PZ5d. The groundwater levels in the deeper piezometer are observed to be higher than in the shallow piezometer from fall of 2016 through to the summer of 2017 showing an upward gradient. Groundwater levels were above ground surface from April 2017 through to August 2017 and may be discharging to the feature (Figure E-40, Appendix E).
- Location W-YD4 is located within a cultural woodland in the East Draft Plan area (Figure 4). The ground is observed to be saturated and have numerous small pools of standing water measured to be as deep as 0.06 m (Table F-3D, Appendix F). Surface water from within the woodlands flows in a southwesterly direction toward the reed canary grass mineral meadow marsh described above at W-YD3. Flow was measured to be up to 3 L/s during a precipitation event. The depth of standing water and flows to the mineral meadow marsh continued to decrease through the spring and into the summer; however, the ground remained saturated into July.
- Location W-YD5 is a cultural plantation/cultural woodland located on the west side of the York Downs laneway (Figure 4). A large pool of standing water up to 0.16 m deep was present in April of 2017. The pool of water continued to decrease in size through the spring, leaving several smaller pools and saturated ground in between, before drying up in mid-May (Table F-3E, Appendix F).

## **2.3 Geology**

### **2.3.1 Surficial Geology**

Surficial geology mapping published by the Ontario Geological Survey (1999) shows that the majority of the Subject Property is covered by glaciolacustrine silt and clay deposits (Figure 3). The north and northeastern portions of the East Draft Plan area have been mapped as glaciolacustrine sand and gravel deposits and a small area in the northwest corner of the West Draft Plan area is mapped as silty to sandy till. Alluvial deposits comprised of sand, silt, clay and organics are mapped along the Bruce and Berczy Creek valleys (Figure 3).

The geotechnical drilling records generally confirm that the Subject Property is covered by glaciolacustrine silt and clay deposits, though they did not encounter glaciolacustrine sand and gravel at surface as widely shown on the published mapping. The borehole logs, provided in Appendix B, show that sand and gravel deposits were found at surface or underlying fill material at boreholes BH14-18 and BH16-12 in isolated areas mapped as glaciolacustrine sand and gravel; however, sand and silt deposits were found at depths ranging from about 1 mbgs to 4 mbgs underlying fill, silty clay, sandy silty clay, silty clay till and/or silty sand till at nine boreholes (BH17-132, BH17-133, BH17-134, BH17-135, BH17-141, BH17-142, BH17-146, BH17-148 and BH17-149) located within the area mapped as glaciolacustrine sand and gravel at surface. Sand was also found at the surface in isolated boreholes mapped as glaciolacustrine silt and clay at 11 boreholes (BH14-5, BH14-14, BH14-20, BH16-14, BH17-01, BH17-05, BH17-06, BH17-07, BH17-08, BH17-129 and BH17-136; refer to Figure 4 for locations). Silty to sandy till was not encountered at the surface during the drilling program in the northwest corner of the West Draft Plan area, but was found to be approximately 1 m to 2 m below ground surface underlying silty clay to clayey silt at boreholes BH14-29 and BH14-30.

### **2.3.2 Bedrock Geology**

Bedrock in the study area consists of layered grey shale bedrock of the Blue Mountain Formation (OGS, 1991). Of the 44 MOECC well records within the Subject Property, six extend to the bedrock (Appendix A). The reported depth to bedrock ranges from approximately 35 m to 57 m and the reported bedrock elevations ranges between 128 masl and 150 masl. Published bedrock topography mapping suggests the bedrock generally slopes to the southwest in this area and the elevation ranges from approximately 134 masl in the southwest corner to 150 masl at the northeast corner of the property.

### 2.3.3 Hydrostratigraphy

The local MOECC well records (Appendix A) provide geology data that have been used along with all of the site-specific geological information obtained from the geotechnical boreholes and groundwater monitoring wells drilled on the property (Appendix B) to assess the local stratigraphy.

To illustrate the local geological conditions, six schematic cross-sections through the Subject Property have been prepared. The cross-section locations are shown on Figure 5 and the cross-sections are shown on Figures 6 through 11. On the cross-sections, an interpretation of the major hydrostratigraphic units has been made based on the overall sediment characteristics. The interpretation has also been informed by modelling work completed by the TRCA for the Rouge River Watershed (2008) that outlined the hydrostratigraphic framework in the Markham area. Cross-sections through the Rouge River Watershed prepared by the TRCA (2008) identified three major overburden aquifer systems described in order of increasing depth as the:

1. Oak Ridges Aquifer Complex (ORAC), formed within the ORM sediments and sometimes referred to as the Upper Aquifer.
2. Thorncliffe Aquifer (or Middle Aquifer), formed by the sandy sediments of the Thorncliffe Formation and generally separated from the overlying ORAC by the Newmarket till aquitard.
3. Scarborough Aquifer (Lower Aquifer), formed by sandy sediments of the Scarborough Formation overlying the bedrock, and separated from the Thorncliffe Aquifer by the Sunnybrook aquitard.

The cross-sections through the Subject Property (Figures 6 through 11) generally show a thick layer of finer-grained soils (glaciolacustrine silt and clay and glacial till deposits) overlying the bedrock, interspersed with lenses and layers of sand of variable thickness and extent. These silt, clay and till deposits typically restrict groundwater movement and are considered to form aquitard layers and the sandier deposits are considered as aquifers. The overburden sequence ranges in thickness from about 35 m to more than 60 m to bedrock (Figures 6 through 11).

The sand lenses and layers encountered between elevations of about 165 masl and 190 masl across the Subject Property are interpreted to be part of the Oak Ridges Aquifer Complex (ORAC) or equivalent deposits. The ORAC thins and pinches out on the south slope of the Oak Ridges Moraine, and in the Markham area, the aquifer may be thin and discontinuous or absent. These sand layers are interpreted to intersect the Bruce Creek valley and may locally provide contributions to baseflow (Figures 6, 8, and 10).

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A deeper sand layer is found beneath the Subject Property between elevations of about 145 masl and 165 mas (Figures 6 through 11). This layer appears to be continuous from north to south beneath the west side of the Subject Property (Figure 9), but the well data suggest the aquifer may thin and pinch out to the east (Figures 6, 7 and 8). This deeper sand layer is interpreted to be the Thorncliffe Aquifer.

There is no evidence of the deeper Sunnybrook aquifer beneath the Subject Property.

### **2.3.4 Soil Hydraulic Conductivity and Infiltration Rates**

There are various methods that can be used to assess soil hydraulic conductivity, i.e., the ability of the soil to transmit groundwater. Grain-size data and soil characteristics can be used to provide a general estimate of hydraulic conductivity. Single well bail-down tests and constant-head tests are used in groundwater monitoring wells to assess site-specific hydraulic conductivity. These methods have been used to estimate the hydraulic conductivity of the soils encountered in the Subject Property as discussed below.

#### **2.3.4.1 Estimates from Soil Grain-Size**

During the 2014 and 2016 drilling programs, 27 representative soil samples were collected and analysed for grain-size distribution by Golder (Appendix C). The grain-size analyses were conducted on various soil types found across the property. A summary of the hydraulic conductivity values estimated from the individual grain-size analyses using the Hazen approximation method is provided in Table C-1 (Appendix C) and ranges of hydraulic conductivities for each soil type are presented below in Table 1a. The Hazen method is designed to approximate the hydraulic conductivity of more permeable sediments; however, it is still considered useful in finer grained sediments to provide a general indication of the low range of the hydraulic conductivity values.

#### **2.3.4.2 In-situ Well Tests**

To assess the in-situ hydraulic conductivity of the screened intervals, single well response tests were completed at BH16-5, BH16-6, BH16-9, BH16-12s, BH16-13d, BH16-14s and BH16-15s (refer to Figure 4 for monitoring well locations and Appendix B for borehole logs). A constant-head test was completed in BH16-5 using a Waterra foot valves and tubing assembly to pump the well at different rates and measuring the (quasi) steady-state drawdown at each flow rate, using the field technique described by Rannie and Nadon (1988). Bail-down tests were completed at BH16-6, BH16-9, BH16-12s, BH16-13d, BH16-14s and BH16-15s as steady-state drawdown would not be achieved within a reasonable time frame under continuous, low-flow pumping. The test results are provided in Appendix D and the calculated hydraulic conductivity values are summarized below and in Table 1a.

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- BH16-5 is screened in sand. The recovery in this well was rapid, and the results of the constant-head test at this location suggest a relatively high hydraulic conductivity of  $8.3 \times 10^{-4}$  cm/sec.
- BH16-6 is screened in silty sand to sandy silt. The results of the bail-down test at this location suggest a low-moderate hydraulic conductivity of  $5.8 \times 10^{-5}$  cm/sec.
- BH16-9 is screened in silty clay, sandy to trace sand. The results of the bail-down test at this location suggest a low-moderate hydraulic conductivity of  $1.2 \times 10^{-5}$  cm/sec.
- BH16-12s is screened in sand and silt to sandy silt till. The results of the bail-down test at this location suggest a low-moderate hydraulic conductivity of  $1.6 \times 10^{-5}$  cm/sec.
- BH16-13d is screened in sand and silt to sandy silt. The results of the bail-down test at this location suggest a low hydraulic conductivity of  $8.8 \times 10^{-6}$  cm/sec.
- BH16-14s is screened in silty sand. The results of the bail-down test at this location suggest a moderate hydraulic conductivity of  $2.7 \times 10^{-4}$  cm/sec.
- BH16-15s is screened in sand and silt. The results of the hydraulic conductivity testing at this location indicate a low-moderate hydraulic conductivity of  $4.1 \times 10^{-5}$  cm/sec.

**Table 1a: Summary of Hydraulic Conductivity Test Results**

| Soil Type                             | Hydraulic Conductivity (cm/sec)<br>Hazen Estimation | Hydraulic Conductivity (cm/sec)<br>In-Situ Test |
|---------------------------------------|-----------------------------------------------------|-------------------------------------------------|
| Silty Clay                            | $<1.0 \times 10^{-6}$                               | -                                               |
| Sandy Clayey Silt to Clayey Sand Till | $<1.0 \times 10^{-6}$ to $2.3 \times 10^{-6}$       | $1.2 \times 10^{-5}$                            |
| Sandy Silt to Silty Sand Till         | $1.0 \times 10^{-6}$ to $2.2 \times 10^{-5}$        | $1.6 \times 10^{-5}$                            |
| Silty Sand to Sand                    | $2.6 \times 10^{-4}$ to $8.3 \times 10^{-3}$        | $8.8 \times 10^{-6}$ to $8.3 \times 10^{-4}$    |

### 2.3.4.3 Infiltration Tests

To assess surficial infiltration potential, a series of tests using a Turf-Tec double ring infiltrometer were completed at selected locations across the site (Figure 4). The test results are provided in Figures D8 to D14, in Appendix D. The tests were completed by removing the topsoil in the test area and installing the infiltrometer in the underlying soil.

Both rings of the infiltrometer were then filled with water and the time for the water level in the inner ring to fall 10 mm was recorded. This was repeated until consistent readings were recorded for at least three consecutive intervals. The test results are discussed below and are summarized in Table 1b. Graphs of the test results are provided in Appendix D.

Seven infiltration tests were completed across the Subject Property on May 30 and June 3, 2016 (IT1, IT2, IT3, IT4, IT5, IT6 and IT7 on Figure 4). Tests IT1, IT2 and IT3 were completed across the southern extent of the West Draft Plan area. Test IT1 was conducted at a depth of 0.35 m in sandy silt till with some gravel. The results of the test show that the soil has an infiltration rate of approximately 200 mm/hour (Figure D-8, Appendix D). Test IT2 was completed at a depth of 0.4 m in silty sand till and gravel. The results of the test show that the soil has an infiltration rate of approximately 1,000 mm/hour (Figure D-9, Appendix D). Test IT3 was completed at a depth of 0.40 m in sandy silt till with some clay. The results of the test show that the soil has an infiltration rate of approximately 200 mm/hour (Figure D-10, Appendix D).

Test IT4 was conducted approximately in the centre of the West Draft Plan area (Figure 4) at a depth of 0.45 m in clayey silt with trace sand. The results of the test show that the soil has an infiltration rate of approximately 135 mm/hour (Figure D-11, Appendix D).

Tests IT5 and IT6 were completed in the northeast corner of the East Draft Plan area (Figure 4). Test IT5 was conducted at a depth of 0.35 m in clayey silt till and had an infiltration rate of approximately 50 mm/hour (Figure D-12, Appendix D). Test IT6 was completed at a depth of 0.4 m in sandy silt with trace clay. The results of the test show that the soil has an infiltration rate of approximately 360 mm/hour (Figure D-13, Appendix D).

Test IT7 was conducted at the northern extent of the West Draft Plan area (Figure 4) at a depth of 0.45 m in silty sand and gravel. The results of the test show that the soil has an infiltration rate of approximately 360 mm/hour (Figure D-14, Appendix D).

**Table 1b: Summary of Infiltration Rates**

| Soil Type                       | Measured Field Infiltration (mm/hour) |
|---------------------------------|---------------------------------------|
| Clayey Silt to Clayey Sand Till | 50 to 135                             |
| Sandy Silt to Silty Sand        | 200 to 360                            |

#### **2.3.4.4 Discussion of Hydraulic Conductivity Results**

The observed infiltration rates of 200 mm/hour to 360 mm/hour at test locations IT1, IT3 and IT7 (Table 1b) are higher than expected based on the nature of the material, i.e., silty sand to sandy silt deposits that would be expected to have a hydraulic



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conductivity of about  $1 \times 10^{-5}$  cm/sec (Table 1a). A hydraulic conductivity value of  $10^{-5}$  cm/sec would be equivalent to about 30 mm/hour (Ontario Ministry of Municipal Affairs & Housing OMAH), 1997 – Site Evaluation and Soil Testing Protocol for Stormwater Infiltration). Tests IT4 and IT5 were completed in clayey silt soils and had infiltration rates of approximately 50 mm/hour and 135 mm/hour, respectively (Table 1b). Again, these infiltration rates are higher than expected for clayey silt soils, as the hydraulic conductivity of the clayey silt soils of  $10^{-6}$  cm/sec or less would be equivalent to about 12 mm/hour or less).

Test IT6 was completed in sandy silt with trace clay with and had an infiltration rate of approximately 360 mm/hour. Test IT2 was completed in silty sand and gravel with an infiltration rate of 1,000 mm/hour. All of the field IT test rates show higher values than the other methods. This is likely because the upper sediments are fractured, weathered and disturbed leading to higher 'secondary' permeability, and the tests simulate saturated conditions. This is an important consideration for the success of lot level and shallow infiltration LID measures for stormwater management. Weathering and fracturing is expected to decrease with depth, so the overall infiltration potential across the Subject Property that will contribute groundwater recharge to depth will be more limited.

It is concluded that the hydraulic conductivity of the surficial soils is generally suitable for the use of LID measures to promote shallow infiltration. It is noted that all test locations were completed in areas where 0.5 m to 3.5 m of fill material will be added as part of the proposed grading plan. Site-specific testing of the soils proposed for fill material and at the depths of the proposed infiltration LID measures should be completed during detailed design to confirm actual infiltration rates.

## **2.4 Hydrogeology**

### **2.4.1 Local Groundwater Use**

The Subject Property is situated within a developed community. All lands surrounding the Subject Property are residential subdivisions that are municipally serviced with lake-based supplies. The proposed development will also be municipally serviced and there is no proposed on-site groundwater use for the development.

The York Downs Golf & Country Club has a Permit to Take Water (PTTW) No. 4201-8DEPTU that allows the golf club to draw water from five groundwater wells and Bruce Creek to supplement irrigation water stored in a large off-line storage reservoir. Groundwater supply wells at the Subject Property are separated into two clusters: the north cluster consisting of PW3 (TW1-69), PW4 (TW3-69) and PW6 (currently not used) and the south cluster consisting of PW1 (TW3-68) and PW2B (Figure 5) (Burnside, 2015).

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TW1-69 and TW3-69 are completed to depths of 28.3 m and 26.2 m, respectively. TW3-68 is completed to a depth of 31.4 m. Groundwater taking at the site predominantly relies on pumping wells PW1 and PW4 to refill the irrigation storage pond. The total average daily irrigation volume for the golf course is 1,804,700 L (Burnside, 2015).

The golf course reports their annual groundwater use to the MOECC in accordance with their permits. It is anticipated that the golf course will continue this water use until such time as the Subject Property is developed. At that time, all pumping wells will be decommissioned in accordance with provincial regulations and, as noted above, there is no proposed future groundwater use for the development.

Well Head Protection Areas (WHPAs) are zones around municipal water supply wells where land uses must be carefully planned and restricted to protect the quality of the water supply. Based on our review of WHPA mapping available from the Region of York, the Subject Property is not located within a WHPA, and as such, the development is not considered to pose a significant threat to drinking water supplies.

#### **2.4.2 Aquifer Vulnerability**

Aquifer vulnerability refers to the susceptibility of an aquifer to potential contamination. Some degree of protection for groundwater quality from natural and human impacts is provided by the soil above the water table. The degree of protection is dependent upon the depth to the water table (for unconfined aquifers) or the depth of the aquifer (for confined aquifers) and the type of soil above the water table or aquifer. As these two properties vary over any given area, the degree of protection or vulnerability of the groundwater to contamination also varies. Some land use restrictions may apply to areas of high aquifer vulnerability, which pose a risk of contaminating the underlying aquifers. Residential land uses are not considered 'high risk' in terms of potential aquifer contamination.

Review of the Aquifer Vulnerability mapping available from the Region of York shows that a large area within the central Subject Property and smaller areas around the perimeter have been mapped as an area of high aquifer vulnerability (Figure 12). While there are some areas where aquifer layers are close to surface over most of the Subject Property, the interpreted stratigraphy suggests that the ORAC is discontinuous and 'patchy' in this area (refer to Section 2.3.3). The deeper Thorncliffe Aquifer is well protected by more than 20 m of low hydraulic conductivity sediments and would not be considered to have high vulnerability to contamination.

### 2.4.3 Groundwater Levels

Groundwater levels have been monitored in monitoring wells and piezometers across the Subject Property since March 2016, and the data are summarized in Tables E-1 and E-2 in Appendix E. Hydrographs for each monitoring location are also provided as Figures E-1 through E-47 in Appendix E to illustrate the water level variations. In addition to the manual water level measurements recorded at each location, an automatic water level recorder (datalogger) was installed in six monitoring wells (BH16-5, BH16-7, BH16-12d, BH16-13d, BH16-15d and BH16-6) and in 14 piezometers (PZ4s/d, PZ5s/d, PZ8s/d, PZ9s/d, PZ10s/d, PZ11s/d, and PZ12s/d) to record continuous water levels.

The groundwater monitoring data show the following (refer to Figure 4 for the monitoring locations and the data tables and hydrographs in Appendix E):

- The shallow monitoring wells installed in the shallow till and shallow sand layers across the Subject Property (BH17-104, BH17-110, BH17-127, BH17-131, BH17-139s, BH17-140, BH16-3, BH16-4, BH16-6, BH16-7, BH16-8, BH16-9, BH16-10, BH16-11, BH14-1, BH14-2, BH14-8, BH14-12, BH14-15, BH14-17, BH14-29 and BH14-33) were found to have groundwater levels fluctuating between approximately 0.2 m (BH16-10, Figure E-8 in Appendix-E) to 6.0 m (BH14-17, Figure E-21 in Appendix E) below ground surface. The seasonal variation in groundwater levels in these wells ranged from 0.5 m (BH16-4, Figure E-2 in Appendix E) to 3.8 m (BH14-17, Figure E-21 in Appendix E).
- Monitoring wells BH16-5 and BH17-104 are the only shallow wells that had groundwater levels above ground surface. BH16-5 is located in a topographically low area in the north central portion of the property (Figure 4). Groundwater levels at this well ranged between approximately 0.3 m above ground surface (April 2017) to 1.2 m below ground surface (November 2017; refer to Figure E-3 in Appendix E). BH17-104 is located in the west central area of the Subject Lands and was observed to have groundwater levels above ground surface on one occasion in March 2017 shortly after the well was installed (Figure 4). It is our understanding that water was pumped into the borehole during drilling to aid in the installation of the monitoring well and the initial water level measured may not reflect natural conditions.
- Nested monitoring wells (e.g., wells located adjacent to each other but completed at different depths) were installed in BH17-139s/d, BH16-12s/d, BH16-13s/d, BH16-14s/d and BH16-15s/d. Monitoring wells BH14-3 (shallow) and BH16-16 (deep) is also interpreted as a nest, though they are located approximately 25 m apart.

- Monitoring well nest BH17-139s/d was constructed in March 2017 and is located at the western edge of the woodlot/wetland (Feature 1). The shallow well is installed in a silty till layer and the deep well is installed in the underlying sandy silt to silty sand layer. The groundwater levels in BH17-139s showed an increase of 0.09 m from April to May followed by a decrease of 0.27 m from May to August 2017. The water level in BH17-139d showed a decrease of 0.43 m from April to August 2017. The groundwater levels in BH17-139s are generally 0.4 to 0.8 m higher than those observed in the deep well, suggesting a downward gradient ranging between approximately 0.07 m/m to 0.12 m/m (Figure E-32, Appendix E).
- Monitoring well nest BH16-12s/d is located within a small valley feature in the northeast corner of the Subject Property in the vicinity of the existing stormwater management pond 'Pond H' (Figure 4). The shallow well is installed in a sand layer and the deep well is installed in the underlying silty clay till (Figure 9). The groundwater levels in BH16-12s show a seasonal decline in the water levels with groundwater in the sand layer ranging from about 0.2 m to 2.6 m below grade (Figure E-10, Appendix E). The water levels recorded in BH16-12d have primarily been above ground surface for the duration of the monitoring. The groundwater levels in BH16-12d are approximately 0.5 m to 2.6 m higher than the groundwater levels in the shallow well showing a strong upward gradient at this location ranging between approximately -0.03 m/m to -0.18 m/m (Figure E-10, Appendix E).
- Monitoring well nests BH16-13s/d, BH16-14s/d and BH14-3/BH16-16 are located in low-lying elevations in the southeast quadrant of the Subject Property and are within approximately 100 m of Bruce Creek (refer to Figure 4 for well locations). The shallow and deep wells are installed in the upper sand layers with the exception of BH16-14d; this well is installed in sandy clayey silt till (Figures 8, 10 and 11). The groundwater levels in BH16-13d are 1 m to 2 m or more higher than the groundwater levels in the shallow well, showing a strong upward gradient (Figure E-11, Appendix E). The water levels in both the shallow and deep wells decline through the spring and summer months of 2016 before recovering in the fall. Water levels in 2017 have been measured to be within 0.5 m of ground surface between January and August. The water levels in the BH16-14s/d nest show a relatively small decline into and during the summer months of 2016 before recovering in the fall. Groundwater levels in BH16-14d have consistently been approximately 0.2 m higher than the groundwater levels in the shallow well (BH16-14s), showing an upward gradient (Figure E-12, Appendix E). The groundwater levels in BH16-16 were above ground surface in March and April 2016 showing spring discharge conditions before gently declining over the dry summer months to about 0.6 m below grade (Figure E-14,

Appendix E). Water levels in 2017 have consistently stayed above ground level into the summer months. The groundwater levels in BH16-16 have also been higher than the groundwater levels in BH14-3 (shallow well) showing a strong upward gradient (Figures E-14 and E-17, Appendix E). Cross-sections C-C' (Figure 8) and F-F' (Figure 11) show that shallow sand deposits are present along the Bruce Creek Valley, and the upward gradients observed in BH16-13d, BH16-14d and BH16-16 suggest groundwater discharge conditions in these sands. Upward gradients in these well nests ranged between -0.01 m/m at BH16-14s/d to -0.26 m/m at BH14-3/BH16-16. It is interpreted that discharge from these sand layers contributes baseflow to Bruce Creek. The Bruce Creek flow monitoring indicates the creek gains flow as it traverses across the Subject Property.

- Monitoring well nest BH16-15s/d is located at the south end of the Subject Property in the vicinity of the site entrance (Figure 4). The shallow and deep wells are installed in silty sand layers that are isolated from each other by a clayey silt till layer (Figure 8). The water levels in the shallow well are more than 3 m below grade and have declined from March to November 2016 (Figure E-13, Appendix E). Groundwater levels rose in the winter and spring and have then declined through the warmer summer months. The groundwater levels in the shallow well are approximately 0.1 m to 1.1 m higher than the deep groundwater levels showing a downward gradient ranging between approximately 0.01 m/m to 0.1 m/m and suggesting recharge conditions in this location (Figure E-13, Appendix E).
- Piezometers were installed adjacent to a number of the golf course ponds that are located along the Bruce Creek (PZ1, PZ2 and PZ6; refer to Figure 4 for locations). Groundwater levels in PZ1 and PZ6 were consistently lower than the surface water levels measured in adjacent ponds at SG1 (Pond C) and SG6 (Pond A), respectively (Figures E-36 and E-41, Appendix E). These data suggest that the ponds will have a recharge function when they fill up with runoff and precipitation, particularly in the spring.
- Groundwater levels at PZ2 were below the surface water levels measured in the adjacent pond at SG2 (Pond D) during the spring and early summer of 2016 (first four monitoring events), but during the summer months were measured to be above the surface water level in the pond (Figure E-37, Appendix E). Water levels in PZ2 returned to below SG2 levels into the fall of 2016 and remained there until spring 2017. A gradient reversal was seen again in the summer of 2017. The steady rise and fall in the water level in the piezometer suggests that this pipe is located in very low hydraulic conductivity soils that have restricted the inflow and stabilization to a static water elevation. This low hydraulic conductivity will also result in a lag of

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response between the pond levels and the local groundwater levels. Based on the closeness of the water elevations, it is interpreted that Pond D is excavated into the local water table and will function as described above for Ponds A and C, i.e., when the surface water levels are high in the ponds, they will have a recharge function. When surface water inputs are low, the local water table will sustain the pond features.

- Nested piezometers were installed along Bruce Creek (PZ3s/d) and along Berczy Creek (PZ7s/d; refer to Figure 4 for locations). As shown on Figure E-38 in Appendix E, the groundwater levels in the shallow and deeper piezometer in the PZ3s/d nest are similar, showing a slight downward gradient (i.e., recharge conditions). The groundwater level in these piezometers was found to range between 0.16 mbgs to 0.69 mbgs. The groundwater levels in the shallow piezometer are very close to or slightly higher than the surface water levels measured at staff gauge SG3 suggesting groundwater discharge conditions to Bruce Creek. Groundwater levels in the deep piezometer were also higher than the surface water level measured at staff gauge SG3 on two occasions (Figure E-38, Appendix E).
- Groundwater levels in the shallow piezometer (PZ7s) reflect the surface water levels at SG7, illustrating the groundwater/surface water interaction in this location. The shallow groundwater levels at PZ7s were, however, consistently higher than the groundwater levels in the deeper PZ7d, showing a downward gradient (i.e. recharge conditions) in this location along Berczy Creek (Figure E-42, Appendix E). These data suggest that the watercourse may recharge the local groundwater in this area.
- Piezometer nests PZ4s/d, PZ10s/d, PZ11s/d and PZ12s/d are located within or adjacent to the Unit 18 wetland area (reed/canary grass mineral marsh meadow as described by Beacon, 2017) within the East Draft Plan area that receives runoff from the driving range area (Figure 4).
- Piezometer nest PZ4s/d was installed in March 2016 and is located in the northern portion of the feature. The groundwater level in the shallow piezometer has been seasonally variable, ranging between approximately 0.2 mbgs in May 2016 to about 0.9 mbgs in October 2016 (Figure E-39, Appendix E). The datalogger in the deeper piezometer has groundwater levels ranging between approximately 1.5 mbgs in March 2016 to about 0.15 mbgs in July of 2017. Generally the hydraulic gradient is downwards indicative of recharge conditions. It is interpreted that when standing water occurs in the feature during spring runoff or heavy rainfall periods that the feature has a recharge function. Upward gradients were observed on occasion in 2016 during the very dry summer and fall periods.

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- Piezometer nests PZ10s/d, PZ11s/d and PZ12s/d were installed in April 2017. PZ10s/d is located in the southern portion of Unit 18 adjacent to the drainage outlet from the feature. This location is at the base of a relatively steep bank and is an area where some iron staining and minor groundwater seepage has been observed. The groundwater levels in the shallow piezometer have generally ranged between approximately 0.1 mags to about 0.3 mags during the spring monitoring period (Figure E-45, Appendix E). The deeper piezometer has groundwater levels ranging between 0.1 mags to about 0.4 mags, with the highest levels following a period of very heavy rainfall. While groundwater levels have been observed to be above ground surface during all measurements to date, the hydraulic gradient has generally been flat or downwards (recharge), until upward gradients were observed in summer 2017 (i.e., discharge conditions).
- PZ11s/d is located immediately adjacent to the feature on the northwest side (Figure 4). The groundwater levels in the shallow piezometer have generally ranged between approximately 0.46 mbgs in April 2017 and 0.81 mbgs in August 2017 (Figure E-46, Appendix E). The deep piezometer has groundwater levels ranging between 1.4 mbgs in April 2017 to about 0.77 mbgs in May 2017 (Figure E-46, Appendix E). The hydraulic gradient at this location is quite strongly downwards showing recharge conditions.
- PZ12s/d is located immediately upgradient of Unit 18 on the north side (Figure 4). The groundwater levels in the shallow piezometer have generally ranged between about 0.7 mbgs in May 2017 to dry (i.e., greater than 1.3 mbgs) in August 2017 (Figure E-47, Appendix E). The deep piezometer has similar groundwater levels ranging between 0.74 mbgs in April 2017 to 0.85 mbgs in July 2017 (Figure E-47, Appendix E). There is a very minor vertical hydraulic gradient evident at this location, but through the spring it has been generally downwards, again showing recharge conditions in the area around the Unit 18 wetland.
- Piezometer nests PZ5s/d and PZ8s/d were installed in a woodlot/wetland feature within the East Draft Plan area. This area is referred to as the 'Feature 1 Woodlot/Wetland' in the Natural Environment Report/Environmental Impact Study by Beacon, 2017 (Figure 4). PZ5s/d is located within the wetland portion of the feature and has been monitored since March 2016 (Figure E-40, Appendix E). PZ8s/d is located within the woodlot portion of the feature and has been monitored since June 2016 (Figure E-43, Appendix E). Groundwater levels measured in PZ5s/d were below ground surface at the beginning of monitoring and have steadily risen to near or above ground surface into summer 2017. Groundwater levels in PZ5s have ranged from about 0.9 mbgs to 0.1 mbgs and from 1.4 mbgs to 0.1 mags in PZ5d. The deep groundwater levels are observed higher than the shallow groundwater levels from the fall of 2016 through the 2017 summer showing an upward gradient

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and discharge conditions since April 2017 (Figure E-40, Appendix E). Similar to PZ4s/d, the datalogger in PZ5d has shown a slow recovery of water levels illustrating low hydraulic conductivity soils,

- Groundwater levels measured in PZ8s/d were also below ground surface at the beginning of monitoring and have steadily risen to or above ground surface into the summer of 2017. Groundwater levels in PZ8s have ranged from about 1.0 mbgs to at or slightly above ground surface and from about 1.6 mbgs to just below ground surface in PZ5d. The shallow groundwater levels are observed higher than the deep groundwater levels throughout the duration of monitoring suggesting a downward gradient and recharge conditions; however, the shallow water table has been observed above ground surface on occasion and possibly discharging to Feature 1 (Figure E-43, Appendix E).
- PZ9s/d was installed within a small wetland near the western limits of the West Draft Plan area in August 2016 (refer to Figure 4 for piezometer nest location). Groundwater levels were observed to be dry in PZ9s until January 2017, rising to about 0.1 mbgs in May 2017 and declining into the summer months of 2017. Groundwater levels in PZ9d ranged from dry in October and November of 2016 to about 0.2 mags in January 2017 (Figure E-44, Appendix E). Groundwater levels in the shallow piezometer are noted to be consistently above those in the deep piezometer, suggesting a downward gradient (i.e., recharge conditions). The exception to this is in January 2017 when the deep piezometer water level was observed to be approximately 0.2 mags while the shallow was 0.2 mbgs.

#### **2.4.4 Interpreted Groundwater Flow Conditions**

Spring groundwater elevation data from April 2017 are shown on Figure 13, along with the interpreted groundwater elevation contours for the Subject Property. The contours shown on Figure 13 represent the interpreted shallow groundwater in the shallow surficial soils across the Subject Property.

The groundwater elevation data suggest that the water table in the upper till soils reflects the general surface topography and that the shallow groundwater flow patterns will mimic the surface water flow patterns (Figure 2), with flow moving from higher elevations towards lower elevations. A groundwater divide is interpreted to be roughly coincident with the surface water divide between the Bruce Creek and the Berczy Creek (compare Figure 2 and Figure 13). The shallow groundwater is interpreted to move across the Subject Property towards Bruce Creek, with the exception of the west half of the West Draft Plan area; shallow groundwater within the west half of the West Draft Plan Area is interpreted to flow towards Berczy Creek (Figure 13).



## 2.4.5 Groundwater Flow Systems

Areas where water from precipitation percolates or infiltrates into the ground and moves downward from the water table are known as recharge areas. These areas are generally in areas of relatively higher topographic elevation. Areas where groundwater moves upward are discharge areas and these generally occur in areas of relatively lower topographic elevation, such as along watercourses. Recharge and discharge may occur in local, intermediate and more regional flow systems. Infiltrating water at any given location may follow a shallow flow path and discharge a short distance away from the recharge area along the nearest slopes or in small watercourses, swales, agricultural ditches, wetlands, etc. This is referred to as a local groundwater flow system (i.e., flows that closely follow the existing topography with relatively short flow distances, e.g., up to a few hundred metres). Some water may follow much deeper and longer flow paths (hundreds to thousands of metres) to recharge underlying aquifers and discharge to features and watercourses possibly a very long way from the area of recharge. Such conditions may be referred to as intermediate and/or regional groundwater flow systems depending on the scale of analysis.

In the study area, the groundwater flow conditions are interpreted to involve: 1) a local shallow system involving groundwater flow in the upper surficial portions of the till and glaciolacustrine sediments, and 2) deeper more regional groundwater flow systems involving the ORAC and Thorncliffe aquifers. The shallow local flow system is superimposed over the regional flow systems and more closely follows the local topography and surface water drainage patterns (Figure 12). Water infiltrating on the Subject Property will move laterally through the shallow soils to recharge the underlying shallow sands and discharge locally in Bruce Creek.

The deeper regional systems are driven by recharge originating in the topographically higher Oak Ridges Moraine to the north of the study area. Flow moves through the aquifers to the south, and as the aquifer layers dip, thin and eventually pinch out, groundwater discharge conditions are evident. Artesian pressures are evident in MOECC well records for wells in the western portion of the Subject Property completed in the sand layer that has been interpreted as the Thorncliffe aquifer (refer to Section 2.3.3 and refer to Figures 8 and 9).

As discussed in Section 2.3.3, on the Subject Property, there are only isolated layers and lenses of sand that may be interpreted as possible ORAC deposits and the Thorncliffe aquifer may not be present in all locations. However, where present, the sandy layers of the ORAC may provide a means for shallow groundwater originating north of the Subject Property to locally contribute baseflow to Bruce Creek and the artesian heads in the Thorncliffe will act to support local high water table conditions. Local infiltration that seeps into the surficial soils is not able to move to depth to recharge the underlying Thorncliffe aquifer due to the upward hydraulic pressures.

## 2.4.6 Recharge and Discharge Conditions

Groundwater conditions across the Subject Property generally show recharge conditions; however, monitoring well nests indicate both downward and upward hydraulic gradients (Section 2.4.3). Monitoring well nests within approximately 100 m of Bruce Creek (BH16-13s/d, BH16-14s/d and BH14-3/BH16-16) show upward hydraulic gradients. Upward gradients ranged between -0.01 m/m at BH16-14s/d to -0.26 m/m at BH14-3/BH16-16. The interpreted cross-sections C-C' (Figure 8) and F-F' (Figure 11) through the Bruce Creek valley show shallow sand deposits are present along the Bruce Creek valley. The upward gradients observed in BH16-13d, BH16-14d and BH16-16 may reflect groundwater discharge from the sandy layers to Bruce Creek. The flow monitoring indicates that Bruce Creek gains flow as it traverses across the Subject Property, supporting the interpretation that the watercourse receives groundwater inputs (Section 2.2 and Table F-2 in Appendix F).

Monitoring well nest BH16-12s/d showed an upward gradient ranging between approximately -0.03 m/m to -0.18 m/m from a silty clay to a sand and silt unit, indicating a discharge area. The upward gradients observed at BH16-12s/d are interpreted to be influenced by the location of the well nest on the side of a hill sloping toward a topographic low where stormwater management pond 'Pond H' is located (Figure 4). The hydraulic head in the deep well is thought to be driven by a local flow system from the topographically higher recharge area in the northeast corner of the Subject Property.

Shallow groundwater levels in monitoring well BH16-5, located to the west of Pond H, were observed above ground surface in March and April 2016 and again from March to July 2017. This well is screened in a confined sand deposit (refer to Figure E-3 in Appendix E). Similar to BH16-12s/d, this well is located in a topographically low area and the groundwater levels observed in the well are interpreted to be influenced by the local flow system from the topographically higher area to the northeast.

The hydraulic gradients measured in and around the Unit 18 wetland are generally downwards indicative of recharge conditions. It is interpreted that when standing water occurs in the feature during spring runoff or heavy rainfall periods that the feature has a recharge function. As discussed above in 2.4.5, minor groundwater seepage and some iron staining was observed at the base of a relatively steep bank; however, the hydraulic gradient has generally been flat or downwards (recharge). These data are interpreted to show that groundwater locally recharges to the shallow sand layer then discharges along the steep bank, particularly during very high water table conditions.

The hydraulic gradients measured within the higher elevated woodlot portion of the Feature 1 suggest a downward gradient and recharge conditions. The groundwater levels within the reed canary grass mineral meadow marsh, located at the lower

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elevation portion of Feature 1 and downgradient of the woodlot, generally show an upward gradient and discharge conditions through 2017.

Groundwater levels in PZ9s/d, located within a small wetland near the western limits of the West Draft Plan, were observed to have downward gradients indicating this feature provides recharge to the underlying soils. Recharge at this location is limited as a result of the underlying low hydraulic conductivity soils.

## **2.5 Significant Groundwater Recharge Areas**

Significant Groundwater Recharge Areas (SGRAs) and Ecologically Significant Groundwater Recharge Areas (ESGRAs) have been mapped for the Rouge River Watershed (TRCA, 2016). Review of this mapping shows that two small areas situated within the western extent of the Subject Property are located within areas mapped as SGRA. The TRCA recharge mapping is provided on Figure 14. The areas identified as SGRAs are shown to have surficial silts and clays on the provincial surficial geology map (OGS, 2003). The findings of this report do not support the TRCA mapping as our investigation identified low rates of infiltration across the tableland, limited by the fine grained surficial sediments and till, as well as discharge conditions along the Berczy Creek and Bruce Creek valleys.

There are no ESGRA mapped on the Subject Property.

## **2.6 Water Quality**

### **2.6.1 Groundwater Quality**

To characterize the background groundwater quality on the property, groundwater samples were collected in April 2016 from MW16-5 and MW16-15s. The groundwater samples were analysed for pH, conductivity, basic ions and selected metals.

The laboratory results are summarized in Table G-1 in Appendix G, and show the following:

- When compared to the Ontario Drinking Water Standards (ODWS), the groundwater is relatively hard (512 mg/L and 491 mg/L at MW16-5 and MW16-15s, respectively), exceeding the ODWS criteria of 100 mg/L. This is common for groundwater in southern Ontario.
- The sodium and chloride concentrations were higher at MW16-5 (68.8 mg/L and 150 mg/L, respectively) than MW16-15s (9.57 mg/L and 16 mg/L, respectively). The higher concentrations observed in MW16-5 may be more affected by inputs from surface activities (i.e., recharge of water impacted by road salt) than the shallow groundwater in MW16-15s. The chloride concentrations are below the ODWS of

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250 mg/L in both wells. The sodium concentration in MW16-5 (68.8 mg/L) is above the ODWS of 20 mg/L.

- The concentration of total dissolved solids (TDS) in MW16-5 (760 mg/L) and MW16-15s (697 mg/L) exceed the ODWS criteria of 500 mg/L.
- The iron concentration in MW16-15s (1.22 mg/L) exceeds the ODWS of 0.3 mg/L.
- The manganese concentration in MW16-5 (486 µg/L) and MW16-15s (78.1 µg/L) both exceed the ODWS of 50 µg/L.
- Nitrate levels in both wells were very low, with reported concentrations of 0.22 mg/L and <0.06 mg/L for MW16-5 and MW16-15s, respectively, and well below the ODWS of 10 mg/L for nitrate.
- The colour of the water collected from MW16-5 has a value of 7 TCU exceeding the ODWS aesthetic value of 5 TCU.
- All other concentrations were reported below the ODWS for parameters tested.

### 2.6.2 Surface Water Quality

Surface water samples were collected at SS1 and SG7 in April 2016 to characterize the water quality in Bruce Creek and Berczy Creek, respectively. The surface water samples were analysed for pH, conductivity, basic ions and selected metals and the laboratory results are summarized in Table G-2 in Appendix G. In addition to the laboratory analyses, field monitoring of pH, temperature, dissolved oxygen, conductivity, salinity, total dissolved solids (TDS) and total suspended solids (TSS) was completed at the surface water stations when flow was present during the flow monitoring program. The results of the field quality monitoring are summarized in Table G-3 in Appendix G.

The surface water quality data (Tables G-2 and G-3, Appendix G) show the following:

- The reported chloride concentrations are 380 mg/L and 120 mg/L at SS1 and SG7, respectively. The sodium concentrations are reported at 241 mg/L and 69.6 mg/L for SS1 and SG7, respectively.
- The total phosphorus concentrations were reported below the Provincial Water Quality Objective (PWQO) for phosphorus of 30 µg/L.
- Nitrate levels in both samples were very low, with reported concentrations of 1.99 mg/L and 1.70 mg/L for SS1 and SG7, respectively.

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- The field chemistry data show that the TSS concentrations in Bruce Creek ranged from 8 mg/L to 28 mg/L and 10 mg/L to 18 mg/L in Berczy Creek. The pH level measurements in Bruce Creek and Berczy Creek ranged from 8.6 to 9.1. Conductivity measurements in Bruce Creek ranged from 701 mS/cm to 927 mS/cm and 727 mS/cm to 1445 mS/cm in Berczy Creek.

The results of the surface water sampling show that the water quality in Bruce Creek and Berczy Creek meet the PWQO for the parameters tested, and show little impact from the surrounding land uses.

### 3.0 Water Balance

In order to assess potential land development impacts on the local groundwater conditions, a detailed water balance analysis has been completed for the East and West draft plans to determine the pre-development infiltration volumes (based on existing land use conditions) and the post-development infiltration volumes that would be expected based on the proposed land use plan. The water balance calculations are provided in Appendix H and discussed below.

#### 3.1 Water Balance Components

A water balance is an accounting of the water resources within a given area. As a concept, the water balance is relatively simple and may be estimated from the following equation:

$$P = S + ET + R + I$$

where:

|    |   |                                |
|----|---|--------------------------------|
| P  | = | precipitation                  |
| S  | = | change in groundwater storage  |
| ET | = | evapotranspiration/evaporation |
| R  | = | surface water runoff           |
| I  | = | infiltration                   |

The components of the water balance vary in space and time and depend on climatic conditions as well as the soil and land cover conditions (i.e. rainfall intensity, land slope, soil hydraulic conductivity and vegetation). Runoff, for example, occurs particularly during periods of snowmelt when the ground is frozen, or during intense rainfall events. Precise measurement of the water balance components is difficult and as such, approximations and simplifications are made to characterize the water balance of a study area. Field observations of the drainage conditions, land cover and soil types, groundwater levels and local climatic records are important input considerations for the water balance calculations. The groundwater balance components for the Subject Property are discussed below:

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### **Precipitation (P)**

The long-term average annual precipitation for the area is 853 mm based on data from the Environment Canada Toronto Buttonville climate station (Station 615HMAK - 43° 51.440' N, 79° 22.120' W, elevation 198.1 masl) for the period between 1981 and 2010. Average monthly records of precipitation and temperature from this station have been used for the water balance component calculations in this study (Tables H-1 and H-2, Appendix H).

### **Storage (S)**

Although there are groundwater storage gains and losses on a short-term basis, the net change in groundwater storage on a long-term basis is assumed to be zero so this term is dropped from the equation.

### **Evapotranspiration (ET) / Evaporation (E)**

Evapotranspiration and evaporation components vary based on the characteristics of the land surface cover (i.e., type of vegetation, soil moisture conditions, perviousness of surfaces, etc.). Potential evapotranspiration (PET) refers to the water loss from a vegetated surface to the atmosphere under conditions of an unlimited water supply. The actual rate of evapotranspiration (AET) is often less than the PET under dry conditions (i.e., during the summer when there is a soil moisture deficit). In this report, the monthly PET and AET have been calculated using a soil-moisture balance approach, using average temperature data and climate information adjusted to the local latitude (refer to Tables H-1 and H-2 in Appendix H).

### **Water Surplus (R + I)**

The difference between the mean annual P and the mean annual ET is referred to as the water surplus. Part of the water surplus travels across the surface of the soil as surface or overland runoff and the remainder infiltrates the surficial soil.

The infiltration is comprised of two end member components: one component that moves vertically downward to the groundwater table (typically referred to as percolation, deep infiltration or net recharge) and a second component that moves laterally through the shallow soils as interflow that re-emerges locally to surface (i.e., as runoff) at some short time following cessation of precipitation. As opposed to the “direct” component of surface runoff that occurs overland during precipitation or snowmelt events, shallow interflow becomes an “indirect” component of runoff. The interflow component of surface water runoff is not accounted for in the water balance equation cited above since it is often difficult to distinguish between interflow and direct (overland) runoff, but both interflow and direct runoff contribute to the overall surface water runoff component from the property.

### **3.2 Approach and Methodology**

The analytical approach to calculate a water balance for the Subject Property involved monthly soil-moisture balance calculations to determine the pre-development (based on existing land use conditions) and post-development (based on the proposed development concept plan) infiltration volumes. A soil-moisture balance approach assumes that soils do not release water as “potential infiltration” while a soil moisture deficit exists. During wetter periods, any excess of precipitation over evapotranspiration first goes to restore soil moisture. Once the soil moisture deficit is overcome, any further excess water can then pass through the soil as infiltration and either become interflow (indirect runoff) or recharge (deep infiltration).

Considering the nature of the silt soils in the area, a soil moisture storage capacity of 125 mm was used for the predominantly short to moderate-rooted fairways throughout the golf course. A soil moisture storage capacity of 400 mm was used for longer-rooted vegetation, i.e., the wooded areas. Table H-1 (for 125 mm retention) and Table H-2 (for 400 mm retention) in Appendix H detail the monthly potential evapotranspiration calculations accounting for latitude and climate, and the actual evapotranspiration (AET) and water surplus components of the water balance based on the monthly precipitation and soil moisture conditions.

The MOECC SWM Planning and Design Manual (2003) methodology for calculating total infiltration based on topography, soil type and land cover was used and a corresponding runoff component was calculated for the two soil moisture storage conditions (i.e., for 125 mm and 400 mm storage as presented on Tables H-1 and H-2 in Appendix H).

The calculated water balance components from these tables are used to assess the pre-development infiltration volumes on a draft plan basis (i.e., for the portions of the Subject Property within the East Draft Plan area and the West Draft Plan area) based on the existing land use characteristics (open space, buildings, wooded areas, etc.). The West Draft Plan area has been further divided into Berczy Creek and Bruce Creek catchment areas to assess conditions for each of these features. A post-development water balance scenario is then calculated for each draft plan area based on the proposed land development plan. The pre- and post-development calculations are provided in Tables H-4 (East Draft Plan), H-5a (West Draft Plan – Berczy Creek Catchment area) and H-5b (West Draft Plan – Bruce Creek Catchment area) in Appendix H.

### **3.3 Component Values**

The detailed monthly calculations show that a water surplus is generally available from December to May. As shown on the calculation tables, infiltration occurs during periods when there is sufficient water available to overcome the soil moisture storage

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requirements. In winter climates, frozen conditions affect when the actual infiltration will occur, however, the monthly balance calculations show the potential volumes available for these water balance components.

The monthly calculations are summed to provide estimates of the annual water balance component values (Tables H-1 and H-2, Appendix H). A summary of these values is provided in Table 2.

**Table 2: Water Balance Component Values**

| <b>Water Balance Component</b> | <b>Golf Course/Open Space</b> | <b>Woodlot</b> |
|--------------------------------|-------------------------------|----------------|
| Average Precipitation          | 853 mm/year                   | 853 mm/year    |
| Actual Evapotranspiration      | 599 mm/year                   | 607 mm/year    |
| Water Surplus                  | 254 mm/year                   | 246 mm/year    |
| Infiltration                   | 114 mm/year                   | 135 mm/year    |
| Runoff                         | 140 mm/year                   | 111 mm/year    |

### **3.4 Pre-Development Water Balance (Existing Conditions)**

The pre-development water balance calculations for the portions of the Subject Property within the East Draft Plan and West Draft Plan areas are presented in Tables H-4 (East Draft Plan), H-5a (West Draft Plan – Berczy Creek Catchment area) and H-5b (West Draft Plan – Bruce Creek Catchment area) in Appendix H. As summarized on Tables H-4, H-5a and H-5b, the total areas of the Subject Property that are proposed for development within the East Draft Plan area, West Draft Plan Berczy Creek area and West Draft Plan Bruce Creek area are about 76.17 ha, 38.06 ha and 54.31 ha, respectively. Land use is predominantly the golf course or open space land and wooded lands. The total areas for these two land cover types have been estimated and assigned appropriate water balance component values for either short-rooted vegetation for the golf course and open space (125 mm soil moisture storage) or longer-rooted vegetation for the wooded areas (400 mm soil moisture storage). The total calculated pre-development infiltration, runoff and evapotranspiration volumes are summarized in Table 3.



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**Table 3: Summary of Pre-Development Infiltration, Runoff and Evapotranspiration**

| <b>Draft Plan</b>              | <b>Estimated Pre-Development Infiltration Volume (m<sup>3</sup>/year)*</b> | <b>Estimated Pre-Development Runoff Volume (m<sup>3</sup>/year)</b> | <b>Estimated Pre-Development Evapotranspiration (m<sup>3</sup>/year)</b> |
|--------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------|
| East Draft Plan                | 81,200                                                                     | 137,900                                                             | 423,700                                                                  |
| West Draft Plan – Berczy Creek | 42,500                                                                     | 58,400                                                              | 222,600                                                                  |
| West Draft Plan – Bruce Creek  | 59,100                                                                     | 94,700                                                              | 305,000                                                                  |
| <b>Total</b>                   | <b>182,800</b>                                                             | <b>291,000</b>                                                      | <b>951,300</b>                                                           |

\*It is acknowledged that infiltration rates are directly dependent upon the hydraulic conductivity of soils that may naturally vary over several orders of magnitude. Recognizing the wide margins of error associated with this analysis, the infiltration volumes presented in this report are considered simply as reasonable estimates for water balance comparisons and not firm values of actual infiltration.

### **3.5 Potential Urban Development Impacts to Water Balance**

Development of an area affects the natural water balance. The most significant difference is the addition of impervious surfaces as a type of surface cover (i.e., roads, parking lots, driveways, and rooftops). Impervious surfaces prevent infiltration of water into the soils and the removal of the vegetation removes the evapotranspiration component of the natural water balance. The evaporation component from impervious surfaces is relatively minor (estimated to be 10% to 20% of precipitation) compared to the evapotranspiration component that occurs with vegetation in this area (about 70% of precipitation in the study area). So the net effect of the construction of impervious surfaces is that most of the precipitation that falls onto impervious surfaces becomes surplus water and direct runoff. The natural infiltration components (interflow and deep recharge) are reduced.

Water balance calculations of the potential water surplus for impervious areas are shown at the bottom of Table H-1 in Appendix H. There is an evaporation component from impervious surfaces and this is typically estimated to be between about 10% and 20% of the total precipitation. For the purposes of the calculations in this study, the evaporation has been estimated to be 15% of precipitation. The remaining 85% of the precipitation that falls on impervious surfaces is assumed to become runoff. Therefore, assuming an evaporation/loss from impervious surfaces of 15% of the precipitation, there is a potential water surplus from impervious areas of 725 mm/year.

It is noted that the proposed development will be serviced by municipal water supply and waste water services. Therefore there will be no impact on the water balance and local groundwater or surface water quantity and quality conditions related to any on-site

groundwater supply pumping or disposal of septic effluent. There are some existing groundwater supply wells within the Subject Property used for golf course irrigation (refer to Section 2.4.1). Further discussion on interim monitoring and decommissioning of any active water supply wells in the study area is provided in Sections 5.5 and 5.6.

### 3.6 Post-Development Water Balance With No Mitigation

In order to assess the potential development impact on infiltration, the post-development infiltration volumes have been calculated for the East Draft Plan and West Draft Plan areas on Tables H-4 (East Draft Plan), H-5a (West Draft Plan – Berczy Creek Catchment area) and H-5b (West Draft Plan – Bruce Creek Catchment area) in Appendix H. These calculations assume no mitigation is in place and allow for the quantification of an infiltration target for the design of a low impact development (LID) strategy for stormwater management. The total areas for the proposed land uses in each subcatchment area have been estimated by Stantec based on the proposed development concept and the infiltration and runoff components for the post-development land uses have been calculated using the MOECC SWM Planning and Design Manual (2003) methodology based on topography, soil type and land cover as shown on Tables H-1 and H-2 in Appendix H. The infiltration and runoff factors for the post-development calculations reflect the proposed grading across the Subject Property as shown on Table H-3. The total calculated post-development infiltration, runoff, and evapotranspiration volumes (without mitigation) are summarized in Table 4.

**Table 4: Summary of Post-Development Infiltration, Runoff and Evapotranspiration (no LID measures)**

| <b>Draft Plan</b>              | <b>Estimated Post-Development Infiltration Volume (m<sup>3</sup>/year)</b> | <b>Estimated Post-Development Runoff Volume (m<sup>3</sup>/year)</b> | <b>Estimated Post-Development Evapotranspiration (m<sup>3</sup>/year)</b> |
|--------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------|
| East Draft Plan                | 43,700                                                                     | 346,200                                                              | 206,500                                                                   |
| West Draft Plan – Berczy Creek | 24,900                                                                     | 158,400                                                              | 117,700                                                                   |
| West Draft Plan – Bruce Creek  | 49,500                                                                     | 161,500                                                              | 232,300                                                                   |
| <b>Total</b>                   | <b>118,100</b>                                                             | <b>666,100</b>                                                       | <b>556,500</b>                                                            |

Comparing the values in Tables 3 and 4, the water balance calculations show that development has the potential to reduce the natural infiltration by 46% (37,500 m<sup>3</sup>/a) in the East Draft Plan area, 41% (17,500 m<sup>3</sup>/a) in the West Draft Plan – Berczy Creek Catchment area and 16% (9,600 m<sup>3</sup>/a) in the West Draft Plan – Bruce Creek Catchment area, with an overall site reduction of 35%. LID measures for stormwater management are recommended to try to make up the difference between the pre- and

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post-development infiltration conditions, i.e., the overall infiltration deficit volume of about 64,900 m<sup>3</sup>/year. As noted above, with the wide margins of error associated with this type of analysis, the infiltration deficit volume is considered as a reasonable estimate that is suitable as a target or guide for LID strategy design.

Comparisons of the pre-development and post-development runoff volumes show that there is an increase in runoff within the catchment areas by 150% in the East Draft Plan area, 170% in the West Draft Plan – Berczy Creek Catchment area and 70% in the West Draft Plan – Bruce Creek Catchment area, with an overall site increase of 130%. Further discussion of the stormwater management strategies to address the surface water runoff are provided in the FSR (Stantec, 2017).

As discussed in Section 2.2, the East Draft Plan area and the eastern portion of the West Draft Plan area are within the Bruce Creek catchment. Comparing the pre-development infiltration and runoff to the post-development infiltration and runoff within the Bruce Creek Catchment area, the water balance calculations show that development has the potential to reduce the natural infiltration by 34% (47,100 m<sup>3</sup>/a) and increase the runoff by approximately 120% (275,100 m<sup>3</sup>/a).

Comparisons of the pre-development and post-development evapotranspiration rates show that there is a significant decrease in evapotranspiration within the East and West Draft Plan areas as is typical of urban development due to the increase of impervious areas. Measures to promote and enhance vegetation in the urbanized areas can be used to improve the post-development evapotranspiration. On the Subject Property, it is intended that rates of evapotranspiration will improve as a result of enhanced plantings in Area E and within the Bruce Creek valley; specifically, in vicinity of the existing ponds as the majority are proposed to be filled in. Further discussion of the enhanced planting areas is provided in the Natural Environment Report (Beacon, 2017).

### **3.7 Water Capture Requirements for LID Measures**

The total depth of precipitation required to meet the infiltration targets presented in Tables H-4, H-5a and H-5b (Appendix H) range from 106 mm/year per impervious hectare for Residential – Single Detached/Laneway Homes to 113 mm/year per impervious hectare for Mixed Use & Residential – Medium Density. To quantify these volumes of precipitation required to meet the infiltration targets within the East and West Draft Plan areas, an analysis was completed using the long-term average annual precipitation for the area (853 mm) based on data from the Environment Canada Toronto Buttonville climate station. The rates of 106 mm/year and 113 mm/year per impervious/ha required to meet the infiltration targets is equivalent to approximately 12% and 13%, respectively, of the total precipitation received in the area.

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The City of Toronto Wet Weather Flow Management Guidelines (November, 2006) were then used to correlate annual rainfall volumes to storm events. Since the Wet Weather Flow Management Guidelines reference the annual rainfall amounts, the annual rainfall data from the Buttonville Airport climate station of 717 mm, as opposed to the total annual precipitation, has been used for these calculations. This is a conservative estimate, as it assumes that no runoff from snow accumulation will be infiltrated. Again assuming 15% of the rainfall on impervious areas is lost to evaporation, the rate of rainfall available for infiltration is calculated to be 609 mm/year. And as such, the rates of 106 mm/year and 113 mm/year per impervious/ha required to meet the infiltration targets is equivalent to about 17% and 19%, respectively, of total rainfall received.

It is reported in these Guidelines, based on the review of rainfall data from 16 rainfall stations across Toronto, that both 17% and 19% of the annual rainfall is approximately equivalent to the 2 mm storm. Therefore, infiltration measures proposed for the Subject Property would need to be designed to capture storm events equivalent to 2 mm/impervious ha.

The stormwater management plan presented in the FSR (Stantec, 2017) proposes to use runoff collected primarily from roof areas into the LID strategy (i.e., for bio-retention enclaves and infiltration facility 1, some runoff from roads or driveways will be directed to the LID with pre-treatment provided through filtration). The required depth of rain to be captured from roof tops throughout the year and infiltrated to maintain water balance per land use is summarized below in Table 5.

**Table 5: Summary of Post-Development Infiltration Targets**

| <b>Land Use</b>                             | <b>Estimated Post-Development Infiltration Volume (mm/Imp ha/year)</b> | <b>Estimated Post-Development Infiltration Volume (mm/Imp ha/event)</b> | <b>Estimated Post-Development Infiltration per Available LID Roof Area (mm/Imp ha/event)</b> |
|---------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>East Draft Plan</b>                      |                                                                        |                                                                         |                                                                                              |
| Residential - Single Detached/Laneway Homes | 106                                                                    | 2                                                                       | 9                                                                                            |
| Residential - Town Homes                    | 110                                                                    | 2                                                                       | 25                                                                                           |
| Residential - Medium Density                | 113                                                                    | 2                                                                       | 4                                                                                            |
| School                                      | 110                                                                    | 2                                                                       | 6                                                                                            |

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| Land Use                                    | Estimated Post-Development Infiltration Volume (mm/Imp ha/year) | Estimated Post-Development Infiltration Volume (mm/Imp ha/event) | Estimated Post-Development Infiltration per Available LID Roof Area (mm/Imp ha/event) |
|---------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>West Draft Plan – Berczy Creek</b>       |                                                                 |                                                                  |                                                                                       |
| Residential - Single Detached/Laneway Homes | 106                                                             | 2                                                                | 3                                                                                     |
| Residential - Town Homes or Laneway Homes   | 110                                                             | 2                                                                | 3                                                                                     |
| Mixed Use & Residential - Medium Density    | 113                                                             | 2                                                                | 2                                                                                     |
| <b>West Draft Plan – Bruce Creek</b>        |                                                                 |                                                                  |                                                                                       |
| Residential - Single Detached/Laneway Homes | 106                                                             | 2                                                                | 4                                                                                     |
| Residential - Town Homes or Laneway Homes   | 110                                                             | 2                                                                | 9                                                                                     |
| Mixed Use & Residential - Medium Density    | 113                                                             | 2                                                                | 3                                                                                     |

### 3.8 Water Balance Mitigation Strategies

The basic premise for low impact development is to try to manage stormwater to minimize the runoff of rainfall and increase the potential for infiltration. As outlined in the MOECC SWMP Design Manual (2003) and Low Impact Development Stormwater Management Planning and Design Guide published by the CVC and TRCA (2010), there are a wide variety of mitigation techniques that can be used to try to reduce the increases in direct runoff that occur with land development and increase the potential for post-development infiltration.

Techniques to maximize the water availability in pervious areas such as designing grades to direct roof runoff towards lawns, side and rear yard swales, and other pervious areas throughout the development where possible can considerably reduce the volume

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of runoff and increase the volume of infiltration in developed areas. These types of surface LID techniques promote natural infiltration simply by providing additional water volumes in the pervious areas (i.e., these areas would receive precipitation as well as extra water from roof runoff). Increasing the topsoil thickness by about two times the normal thickness is also considered as beneficial to enhance storage of water in the topsoil and increase the potential for infiltration. This may be particularly effective in the summer months, when natural infiltration would not generally occur because the additional water overcomes the natural soil moisture deficit.

Other mitigation techniques that can be considered to mitigate increases in runoff and reductions in infiltration include such measures as: permeable pavements, rain gardens, bioswales, subsurface infiltration trenches, galleries and pervious pipe systems. Subsurface methods should only be considered in areas where there is sufficient depth to water table to accommodate the systems within the unsaturated zone and sufficient soil hydraulic conductivity to function effectively. The MOECC manual recommends that subsurface galleries or trenches should be about 1 m above the high water table.

The water balance calculations suggest that, without mitigation, the developed area will receive about 65% of the current amount of average annual groundwater infiltration. In addition, runoff will increase 129% and evapotranspiration will decrease 42%. To minimize the potential development impacts, the FSR (Stantec, 2017) proposes the incorporation of amended soils, downspout disconnection, bioretention and infiltration facilities into the development plan to increase infiltration and reduce runoff (refer to Stantec Figure 2.17 in Appendix H).

### **East Draft Plan Area**

Amended soils are proposed for select areas within the East Draft Plan area using infiltration rates shown in Table H-6 in Appendix H. The amended soils will aid in the infiltration of runoff from roof downspout disconnection to rear yard lawns. A volumetric runoff reduction of 25% was applied as the surficial soils across the site are generally characterized as hydrologic soil groups (HSG) C and D. The estimated volume of precipitation that will be infiltrated across the East Draft Plan area as a result of downspout disconnection from 36,500 m<sup>2</sup> of roof area is approximately 6,600 m<sup>3</sup>/a (~18% of target) (refer to Table H-7).

Stantec also proposes to direct precipitation from 11,800 m<sup>2</sup> of roof area within the East Draft Plan to perforated roof leader collector pipes (RLC), bioretention or infiltration facilities designed to infiltrate a 25 mm storm event. The Buttonville Airport precipitation data was used to correlate storm events to annual precipitation volumes in Table H-7 in Appendix H. The 25 mm storm event accounts for approximately 93% of precipitation. The annual precipitation data from the Buttonville climate station of 853 mm has been used for these calculations. Assuming 15% of the precipitation is lost to evaporation, the

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rate of precipitation directed to the infiltration trenches is calculated to be 725 mm/year. Using a total impervious area of 11,800 m<sup>2</sup> from which roof runoff will be directed to RLC, a bioretention enclave or infiltration facilities, the total annual volume of runoff directed to these facilities was then calculated. The calculations in Table H-7 (Appendix H) show that, assuming 93% of the precipitation (i.e., the 25 mm storm) is infiltrated in the bioretention and infiltration facilities, approximately 21% of the target can be met (~8,000 m<sup>3</sup>/a).

Stantec has advised that approximately 12,400 m<sup>3</sup>/a of precipitation collected from roof tops will be directed to enhancement Area E to replicate similar conditions observed in the mineral marsh meadow that is proposed to be removed. Approximately 25% of the precipitation collected from these roof tops is estimated to infiltrate with the remainder contributing to runoff.

The calculations suggest that natural infiltration that occurs on pervious surfaces, along with the mitigative measures proposed to address the groundwater infiltration deficit, do not meet the pre-development infiltration volume for the East Draft Plan area leaving a deficit of approximately 19,200 m<sup>3</sup>/a (~24% of pre-development infiltration volumes). It is noted that due to the high water table and the amount of cut proposed in the west-central portion of the East Draft Plan area, infiltration trenches or RLCs are not proposed as they could intersect the water table.

The calculations also indicate that the typical increases in runoff that may occur with development can also be reduced (i.e., an increase in runoff of 1.4 times as compared to 1.5 times without LID measures). It should be noted that the development of the proposed East Draft Plan concept will reduce evapotranspiration by ~51% (216,500 m<sup>3</sup>/a).

### **West Draft Plan Area**

Similar to the East Draft Plan area, amended soils are proposed for select areas within the West Draft Plan area using infiltration rates shown in Table H-6 in Appendix H. The amended soils aid in the infiltration of runoff from roof downspout disconnection from 41,800 m<sup>2</sup> of roof area to rear yard lawns; 28,800 m<sup>2</sup> of roof area in the West Draft Plan Berczy Creek Catchment area infiltrating approximately 5,200 m<sup>3</sup>/a (~30% of West Berczy Creek target) and 13,000 m<sup>2</sup> of roof area in the West Draft Plan Bruce Creek Catchment area infiltrating approximately 2,400 m<sup>3</sup>/a (~25% of West Bruce Creek target).

Stantec also proposes to direct precipitation from 79,700 m<sup>2</sup> of roof area (37,200 m<sup>2</sup> from West Draft Plan Berczy Creek Catchment area and 42,500 m<sup>2</sup> from West Draft Plan Bruce Creek Catchment area) to the RLC, bioretention enclaves or infiltration facilities designed to infiltrate a 25 mm storm event. Using the same methodology described

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above for the East Draft Plan area, the calculations in Tables H-8a and H-8b (Appendix H) show that, assuming 93% of the precipitation (i.e., the 25 mm storm) is infiltrated in the RLC, bioretention and infiltration facilities, the targets will be exceeded by approximately 27% in the West Draft Plan Berczy Catchment area (~22,300 m<sup>3</sup>/a) and by 199% in the West Draft Plan Bruce Creek Catchment area (~28,700 m<sup>3</sup>/a). Together, this results in an overall increase of 88% over target for the overall West Draft Plan area.

Natural infiltration that occurs on pervious surfaces along with the proposed mitigative measures for the West Draft Plan exceed the pre-development infiltration volume by approximately 13,100 m<sup>3</sup>/a (~31% increase in infiltration) for the West Draft Plan Berczy Creek Catchment area and approximately 21,600 m<sup>3</sup>/a (~36% increase in infiltration) for the West Draft Plan Bruce Creek Catchment area, with a total increase of approximately 34,600 m<sup>3</sup>/a (~34% increase in infiltration) to the West Draft Plan area. The overall site-wide water balance for 4134 16<sup>th</sup> Avenue, incorporating low impact development techniques into the proposed development, will infiltrate 108% of the pre-development infiltration volume, amounting to an increase of ~12,100 m<sup>3</sup>/a.

The typical increases in runoff that may occur with development can also be reduced; an increase in runoff of 2.2 times as compared to 2.7 times without LID measures in the West Draft Plan area – Berczy Catchment, and an increase in runoff of 1.4 times as compared to 1.7 times without LID measures in the West Draft Plan area – Bruce Catchment. In addition, the development of the proposed West Draft Plan concept will reduce evapotranspiration within the Berczy Catchment by ~47% (104,900 m<sup>3</sup>/a) and within the Bruce Catchment by ~24% (72,800 m<sup>3</sup>/a), with a total reduction of approximately 34% (~177,000 m<sup>3</sup>/a) to the West Draft Plan area.

Comparing the pre-development infiltration of the Bruce Creek Catchment area (East Draft Plan Area and West Draft Plan Area – Bruce Creek Catchment) to the post-development infiltration, the calculations show that water balance will be maintained in post-development by implementing the proposed comprehensive LID strategy. A summary of the infiltration, runoff and evapotranspiration volumes for the Subject Property in post-development with LID measures is presented below in Table 6.



**Table 6: Summary of Post-Development Infiltration, Runoff and Evapotranspiration (with LID measures)**

| Draft Plan                     | Estimated Post-Development Infiltration Volume (m <sup>3</sup> /year) and % Change from Pre to Post |            | Estimated Post-Development Runoff Volume (m <sup>3</sup> /year) and % Change from Pre to Post |              | Estimated Post-Development Evapotranspiration (m <sup>3</sup> /year) and % Change from Pre to Post |             |
|--------------------------------|-----------------------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------|-------------|
|                                |                                                                                                     |            |                                                                                               |              |                                                                                                    |             |
| East Draft Plan                | 61,900 m <sup>3</sup>                                                                               | -24%       | 327,300 m <sup>3</sup>                                                                        | +140%        | 207,200 m <sup>3</sup>                                                                             | -51%        |
| West Draft Plan – Berczy Creek | 55,500 m <sup>3</sup>                                                                               | +31%       | 127,900 m <sup>3</sup>                                                                        | +120%        | 117,700 m <sup>3</sup>                                                                             | -47%        |
| West Draft Plan – Bruce Creek  | 80,700 m <sup>3</sup>                                                                               | +36%       | 130,400 m <sup>3</sup>                                                                        | +40%         | 232,200 m <sup>3</sup>                                                                             | -24%        |
| <b>Total</b>                   | <b>198,100 m<sup>3</sup></b>                                                                        | <b>+8%</b> | <b>585,600 m<sup>3</sup></b>                                                                  | <b>+101%</b> | <b>557,100 m<sup>3</sup></b>                                                                       | <b>-41%</b> |

#### 4.0 Woodlot/Wetland Feature Based Water Balance

The woodlot/wetland (Feature 1) is located within the East Draft Plan area (Figure 2) and is approximately 36,400 m<sup>2</sup> in size; comprising 19,000 m<sup>2</sup> of woodlot and 17,400 m<sup>2</sup> of wetland. There is an external catchment area of approximately 30,200 m<sup>2</sup> that also drains to the feature (refer to Stantec Figure 2.15 in Appendix H). Monitoring well BH16-4 and piezometer nest PZ5s/d are located within the wetland portion of the feature and have been monitored since March 2016. Piezometer nest PZ8s/d is located within the woodlot portion of the feature and has been monitored since June 2016. As discussed in Section 2.4.3 and 2.4.6, groundwater levels measured in BH16-4 have been below ground surface throughout the duration of the monitoring period, indicating groundwater from an underlying deep aquifer does not discharge to this feature; however, some of the precipitation that infiltrates within the upgradient area of the Feature 1 catchment discharges to the surface within the downgradient area of the catchment as interflow (groundwater). Discharge gradients at PZ5s/d have been measured to range between about -0.02 m/m to -0.1 m/m. The shallow groundwater levels at PZ8s/d are consistently higher than the levels in the deep piezometer suggesting recharge conditions.

Dataloggers have been installed in both piezometers at PZ5s/d and PZ8s/d, at staff gauges SG4 and SG8 to measure surface water elevations and at SG C-1 to monitor surface water flows leaving the woodlot/wetland feature to confirm the groundwater/surface water interactions in this feature (refer to Figure 4).

A detailed water balance analysis has been completed for this feature to determine the pre-development infiltration and runoff volumes (based on existing land use conditions) and the post-development infiltration and runoff volumes that would be expected based on the proposed land use plan. The water balance calculations are provided in Appendix H and discussed below.

#### 4.1 Pre-Development Water Balance (Existing Conditions)

The pre-development water balance calculations for the woodlot/wetland feature and external drainage area are presented in Table H-9 in Appendix H. Similar to the site-wide water balance methodology discussed in Section 3, a soil moisture storage capacity of 125 mm was used for the predominantly short to moderate-rooted wetland area and a soil moisture storage capacity of 400 mm was used for longer-rooted vegetation, i.e., the wooded areas (refer to Table H-1 (for 125 mm retention) and Table H-2 (for 400 mm retention) in Appendix H). In summary from these appendix tables, the total calculated pre-development infiltration and runoff volumes are summarized in Table 7.

**Table 7: Summary of Pre-Development Runoff to Woodlot/Wetland Feature**

| Land Use Area          | Estimated Pre-Development Infiltration Volume (m <sup>3</sup> /year) | Estimated Pre-Development Runoff Volume (m <sup>3</sup> /year) | Estimated Pre-Development Evapotranspiration (m <sup>3</sup> /year) |
|------------------------|----------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------|
| Wetland                | 2,000                                                                | 2,400                                                          | 10,400                                                              |
| Woodlot                | 2,600                                                                | 2,100                                                          | 11,500                                                              |
| External Drainage Area | 3,400                                                                | 4,200                                                          | 18,100                                                              |
| <b>Total</b>           | <b>8,000</b>                                                         | <b>8,700</b>                                                   | <b>40,000</b>                                                       |

#### 4.2 Post-Development Water Balance and Mitigation Strategies

The development of the East Draft Plan area proposes to build houses and roads within the external drainage area to the feature, essentially eliminating infiltration and surface water contributions from the upland area, and creating infiltration and runoff deficits of approximately 3,400 m<sup>3</sup>/a (~43% of pre-development infiltration) and 4,200 m<sup>3</sup>/a (~48% of pre-development runoff), respectively. The wetland and woodlot areas will remain the same in post-development.

The FSR (Stantec, 2017) proposes to create a buffer area around the woodlot/wetland feature to allow for groundwater to infiltrate and to direct runoff toward the woodlot/wetland feature. The buffer area of approximately 13,700 m<sup>2</sup> will be left to naturalize and provide about 1,900 m<sup>3</sup>/a of infiltration (~55% of target) and 1,500 m<sup>3</sup>/a of runoff (~36% of target) to the woodlot/wetland feature in post-development. The FSR

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also proposes downspout disconnection into the development plan to maintain the surface water runoff contribution to the woodlot/wetland feature. Similar to the methods discussed above in Section 3.8, amended soils are proposed for the rear yards backing onto the woodlot/wetland feature using the infiltration and runoff rates shown in Table H-6 in Appendix H. The volume of precipitation that will infiltrate within the catchment as a result of downspout disconnection from approximately 5,400 m<sup>2</sup> of roof area is approximately 1,000 m<sup>3</sup>/a (~29% of target). The volume of precipitation that will runoff and be directed as sheet flow to the woodlot/wetland feature as a result of runoff from rear yard lawns and downspout disconnection from approximately 5,400 m<sup>2</sup> of roof area is approximately 2,900 m<sup>3</sup>/a (~69% of target). In summary from the appendix tables, the total calculated pre-development infiltration, runoff and evapotranspiration volumes are summarized in Table 8.

**Table 8: Summary of Post-Development Infiltration, Runoff and Evapotranspiration to Woodlot/Wetland Feature With Mitigation**

| Land Use Area          |                                                  | Estimated Post-Development Infiltration Volume (m <sup>3</sup> /year) | Estimated Post-Development Runoff Volume (m <sup>3</sup> /year) | Estimated Post-Development Evapotranspiration (m <sup>3</sup> /year) |
|------------------------|--------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------|
| Wetland                |                                                  | 2,000                                                                 | 2,400                                                           | 10,400                                                               |
| Woodlot                |                                                  | 2,600                                                                 | 2,100                                                           | 11,500                                                               |
| Open Space/Buffer Area |                                                  | 1,800                                                                 | 1,500                                                           | 8,300                                                                |
| External Drainage Area | Natural Infiltration/Runoff from Rear Yard Lawns | 400                                                                   | 300                                                             | 1,700                                                                |
|                        | Roof Downspout Disconnection                     | 1,000                                                                 | 3,000                                                           | 0                                                                    |
| <b>Total</b>           |                                                  | <b>7,800</b>                                                          | <b>9,300</b>                                                    | <b>31,900</b>                                                        |

Natural infiltration that occurs within Feature 1 and the proposed buffer area, along with the proposed mitigative measures, provide enough infiltration to maintain the pre-development infiltration volume for Feature 1 and its existing catchment area. The runoff that occurs within Feature 1 and the proposed buffer area along with the proposed mitigative measures exceed the pre-development runoff volume by approximately 500 m<sup>3</sup>/a (~6% increase in runoff). There is also an overall reduction in evapotranspiration of about 20% (~8,000 m<sup>3</sup>/a).

## **5.0 Construction Considerations**

### **5.1 Water Quality**

Depending on land use, runoff from urban developments may contain a variety of dilute contaminants such as suspended solids, chloride from road salt, oil and grease, metals, pesticide residues, bacteria and viruses. Generally, with the exception of the dissolved constituents such as nitrogen and salt, most contaminants are attenuated by filtration during groundwater transport through the soils. As such, the potential for effects on groundwater quality from infiltration in the urban areas is therefore expected to be limited. Any potential changes to the shallow groundwater quality are not expected to influence conditions in the surface water features given the limited discharge volumes. The deeper aquifer zones in the study area are well protected by thick layers of low hydraulic conductivity sediments and upward gradients and no effect on the groundwater quality in these aquifers is expected from the proposed development.

### **5.2 Construction Below Water Table**

The construction of buried services below the water table has the potential to capture and redirect groundwater flow through more permeable fill materials typically placed in the base of excavated trenches. Over the long-term, these impacts can lower the local groundwater table. To mitigate this effect, services to be installed below the water table should be constructed to prevent redirection of groundwater flow. This will involve the use of anti-seepage collars or clay plugs surrounding the pipes to provide barriers to flow and prevent groundwater flow along granular bedding material and erosion of the backfill materials.

### **5.3 Dewatering/Depressurization Requirements**

The water table can be seasonally close to the existing ground surface in some areas, particularly along the watercourse valleys and in the west-central portion of the East Draft Plan area. Much of the upland area will be above the water table, however, subsurface excavations may encounter wet soil conditions, particularly in the spring and fall. The construction dewatering requirements may vary significantly depending on the local soils, the climate conditions, the construction season and the depth and size of the excavations. Over most of proposed development area, the surficial soils encountered during servicing will predominantly be relatively low hydraulic conductivity silt, clay and till sediments that would not be expected to produce much water. Minor seepage into excavations within the silty clayey soils can likely be handled, as required, by pumping from sumps within the trench excavations.

There are areas where coarser-grained sand or gravel layers and/or heavily weathered and fractured till deposits may be encountered that may produce more significant

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volumes of groundwater flow. The shallow sand layers encountered across the Subject Property appear to be relatively discontinuous (refer to Section 5.3.2) and may not sustain significant flow of groundwater; however, for excavations and servicing, such areas may require more active dewatering or groundwater control systems involving networks of well points or groundwater control wells.

Regional artesian conditions are evident in the western portion of the Subject Property, that are interpreted to be related to the presence of the Thorncliffe Aquifer (refer to Section 2.4.4). It is not anticipated that the regional aquifer will be directly encountered during servicing of the Subject Property; however, deeper excavations may require depressurization for construction.

Dewatering and/or depressurization requirements and anticipated water flow volumes will be confirmed by geotechnical and hydrogeological investigations completed in support of detailed servicing design. The studies will build on the current knowledge of the existing hydrogeological conditions (i.e., areas where saturated sand and gravel layers are present) and determine the most effective method to control groundwater during construction. A groundwater management plan and sediment control system will be established such that the dewatering discharge water is returned to the local environment in a clear (non-turbid) condition.

Recently the MOECC has introduced new regulations that allow for construction related dewatering to proceed under the Environmental Activity Sector Registry (EASR) process if dewatering volumes are below 400,000 L/d. Based on our knowledge of the regulations, the dewatering will either be allowed by a Category 3 Permit to Take Water (PTTW) or under the EASR process depending on the expected volume of water taking. Both the EASR process and the Category 3 PTTW application allow for the uncertainties of the construction process in relation to the duration of the dewatering period. The determination of which process should be followed (PTTW or EASR) is based on the expected volume of taking during dewatering; takings between 50,000 L/d and 400,000 L/d are required to register for the EASR while takings above 400,000 L/d are regulated by the PTTW process.

## **5.4 Well Decommissioning**

Prior to or during construction, it is necessary to ensure that all inactive wells within the development footprint have been located and properly decommissioned by a licensed water well contractor according to Ontario Regulation 903. This regulation applies to the active and inactive irrigation supply wells for the golf course and the groundwater monitoring wells installed for this study unless they are maintained throughout the construction for monitoring purposes.

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## 6.0 Monitoring

Groundwater and surface water monitoring at all monitoring wells, drive-point piezometers, staff gauges and surface water stations will be completed on a monthly basis for a period of one year to establish seasonal fluctuations, confirm stable water elevations and assess the water table response to precipitation. Following one year of monthly monitoring, the monitoring frequency will change to quarterly for a period of one to two years, depending on the type and sensitivity of the features (wetlands, woodlots, etc.) in accordance with the ToR. Automatic water level recorders (dataloggers) were installed in six of the on-site monitoring wells (BH16-5, BH16-7, BH16-12d, BH16-13d, BH16-15d and BH16-16) and in 14 of the piezometers (PZ4s/d, PZ5s/d, PZ8s/d, PZ9s/d, PZ10s/d, PZ11s/d, and PZ12s/d) in order to record continuous water level fluctuations. Dataloggers were also installed at staff gauges SG4, SG5, SG8 and SG9 as well as at culverts SG C-1 and SG C-2.

Monitoring of the groundwater elevation and surface water flow conditions will continue during and post-construction activities following the LID implementation. New monitoring wells may be installed where necessary to replace existing monitoring wells that may be decommissioned to accommodate construction activities. The proposed monitoring locations and frequency will be determined based on the final LID strategy at detailed design.

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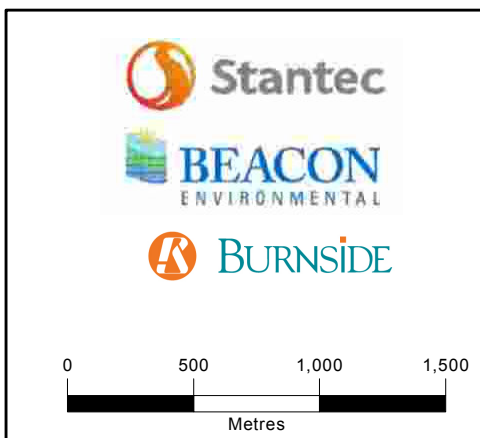
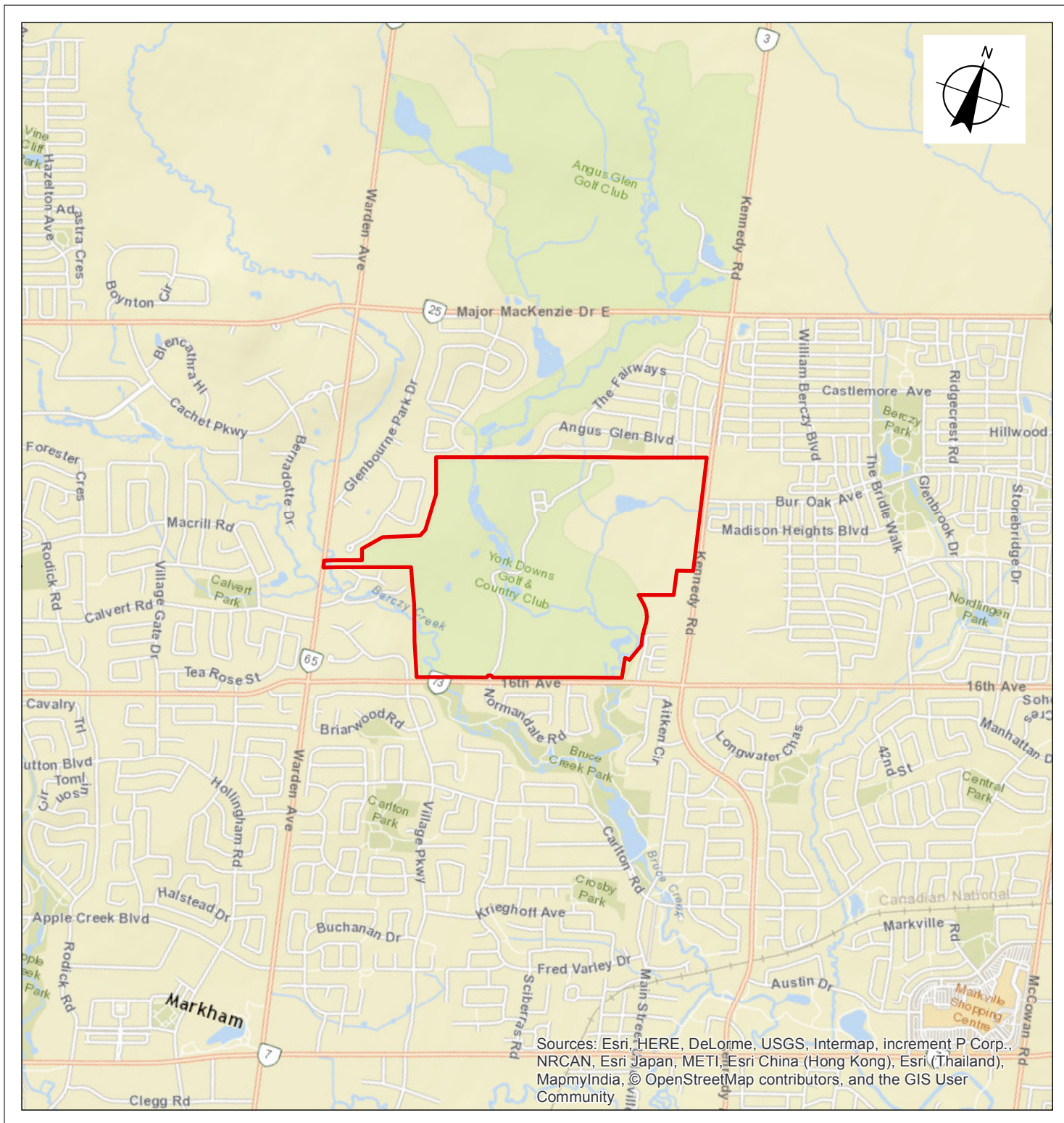


# BURNSIDE

[ THE DIFFERENCE IS OUR PEOPLE ]



Figures



#### LEGEND

SUBJECT LANDS

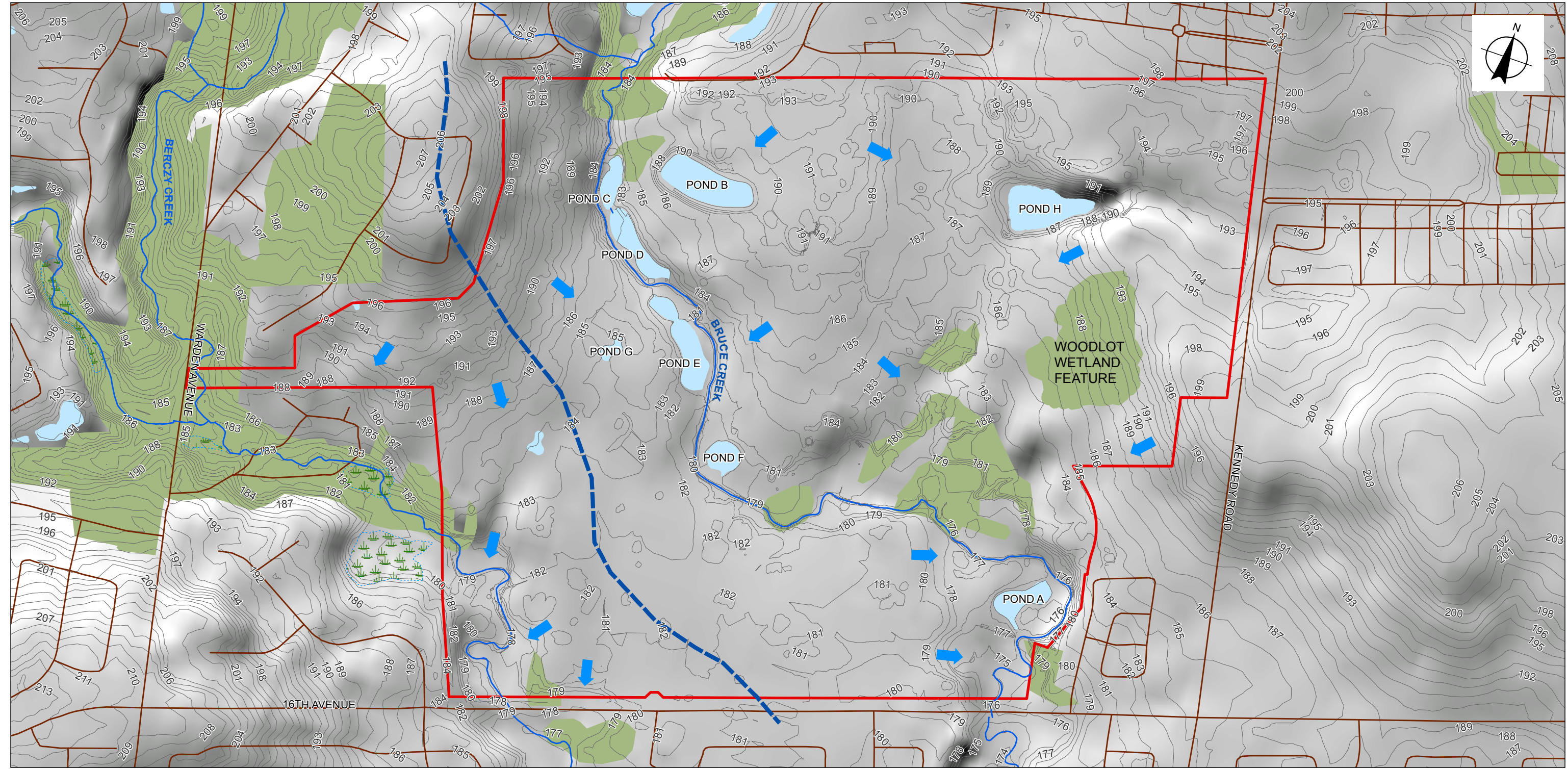
## HYDROGEOLOGICAL ASSESSMENT AND WATER BALANCE 4134 16TH AVENUE

### FIGURE 1

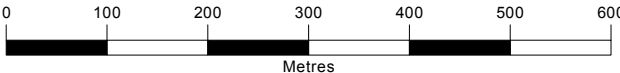
### SITE LOCATION

OCTOBER 2017









**LEGEND**

|                                                                                     |                               |                                                                                       |                              |
|-------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|------------------------------|
|  | SUBJECT LANDS                 |  | WETLAND                      |
|  | WATERCOURSE                   |  | DRAINAGE DIVIDE              |
|  | ROADWAY                       |  | SURFACE WATER FLOW DIRECTION |
|  | WOODED                        |                                                                                       |                              |
|  | CONTOUR (1m intervals - masl) |                                                                                       |                              |
|  | OPEN WATER                    |                                                                                       |                              |

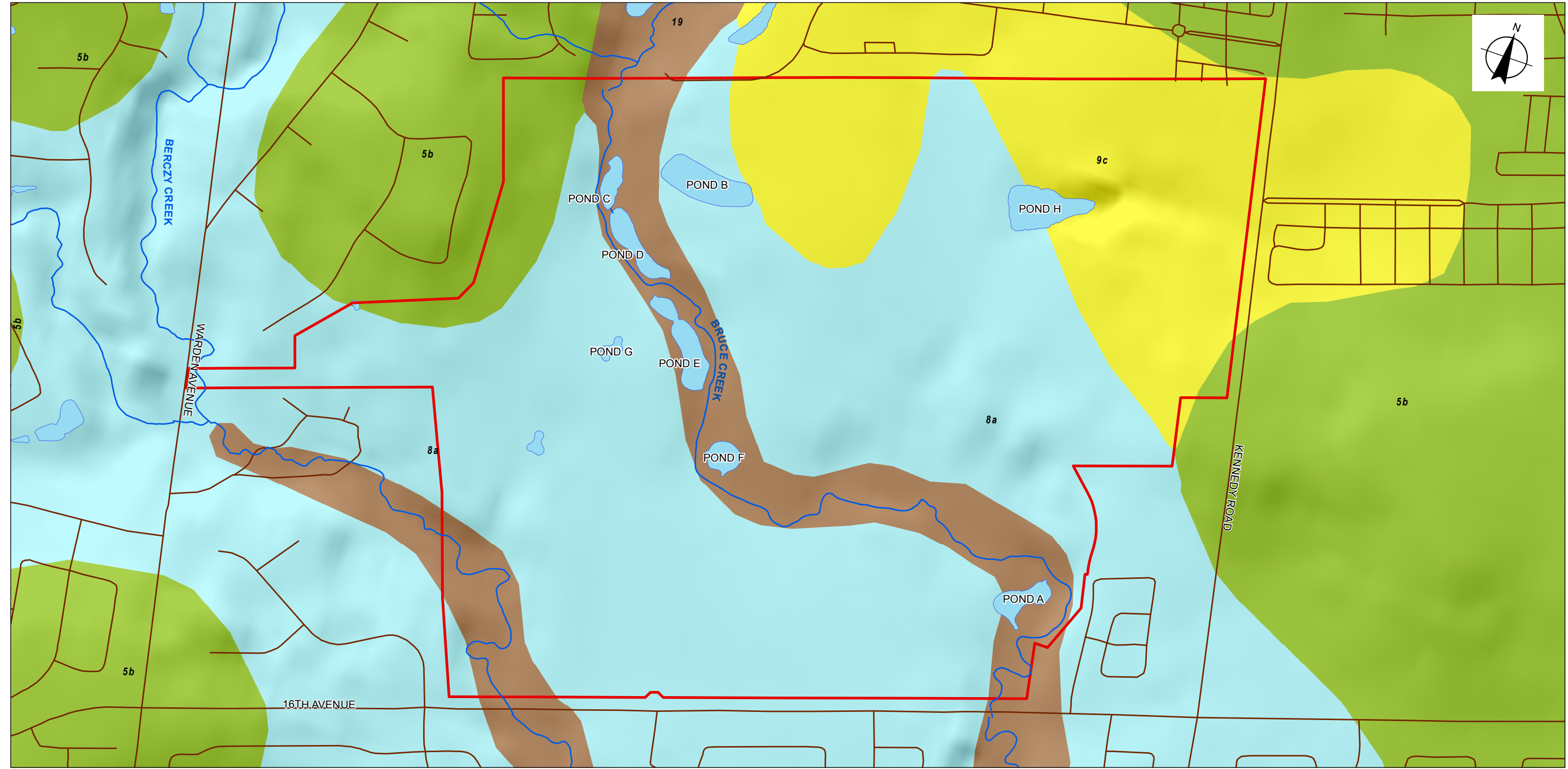
**HYDROGEOLOGICAL ASSESSMENT  
AND WATER BALANCE  
4134 16TH AVENUE**

**FIGURE 2**

**TOPOGRAPHY AND DRAINAGE**

OCTOBER 2017





**LEGEND**

SUBJECT LANDS
 WATERCOURSE
 ROADWAY
 OPEN WATER
 5b: Stone-poor, carbonate-derived silty to sandy till
 8a: Fine-textured glaciolacustrine deposits: Massive-well laminated

9c: Coarse-textured glaciolacustrine deposits: Foreshore-basinal deposits
 19: Modern alluvial deposits

HYDROGEOLOGICAL ASSESSMENT  
AND WATER BALANCE  
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**FIGURE 3**

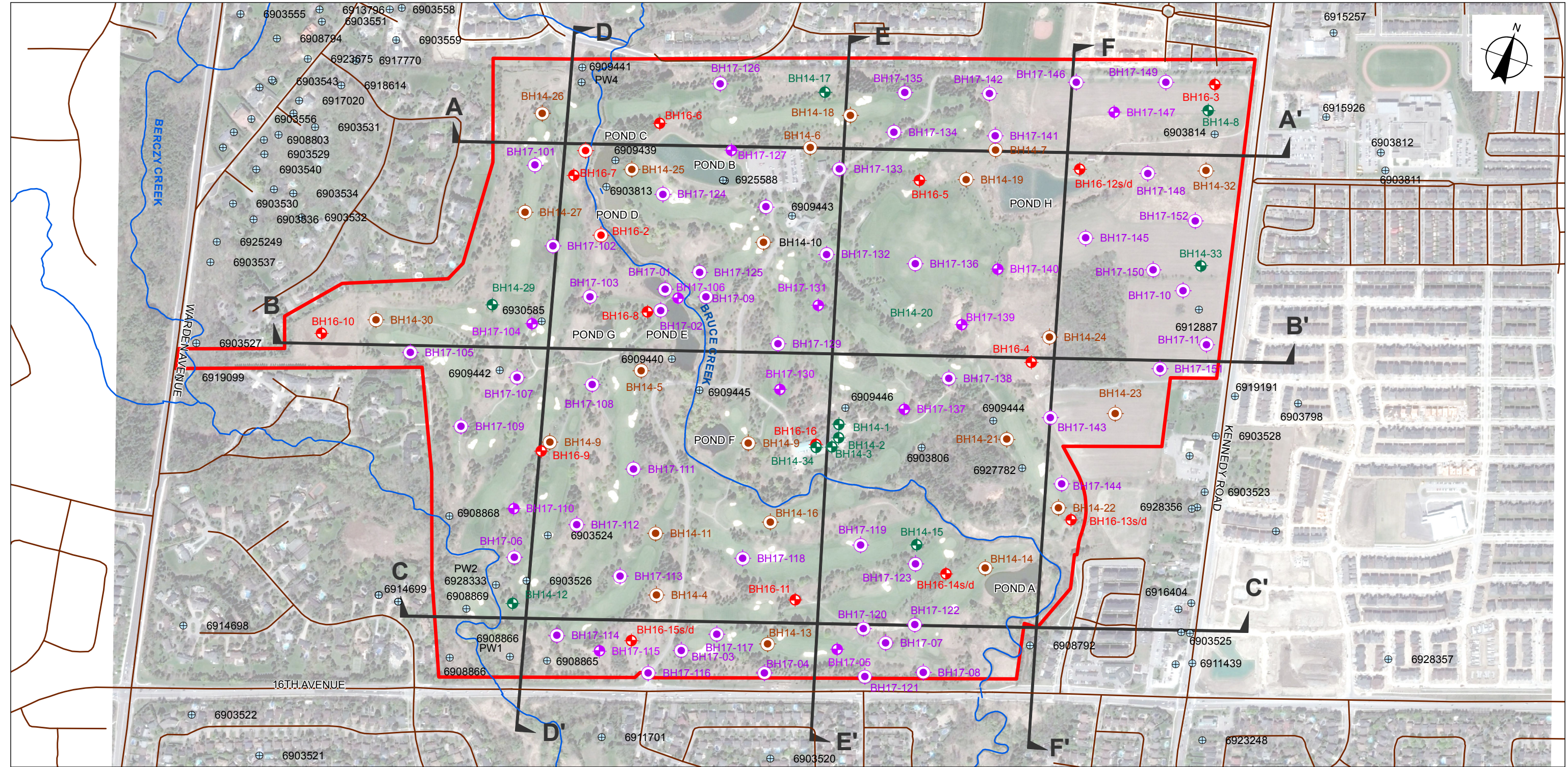
**SURFICIAL GEOLOGY**

OCTOBER 2017

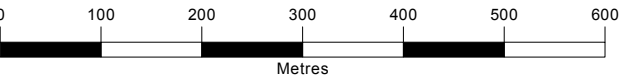












**LEGEND**

-  SUBJECT LANDS
-  WATERCOURSE
-  MONITORING WELL (GOLDER, 2017)
-  MONITORING WELL (GOLDER 2014)
-  MONITORING WELL (GOLDER 2016)
-  BOREHOLE (GOLDER, 2017)

-  BOREHOLE (GOLDER 2016)
-  BOREHOLE (GOLDER, 2014)
-  MOECC WELL RECORD LOCATION
-  CROSS SECTION LOCATION KEY

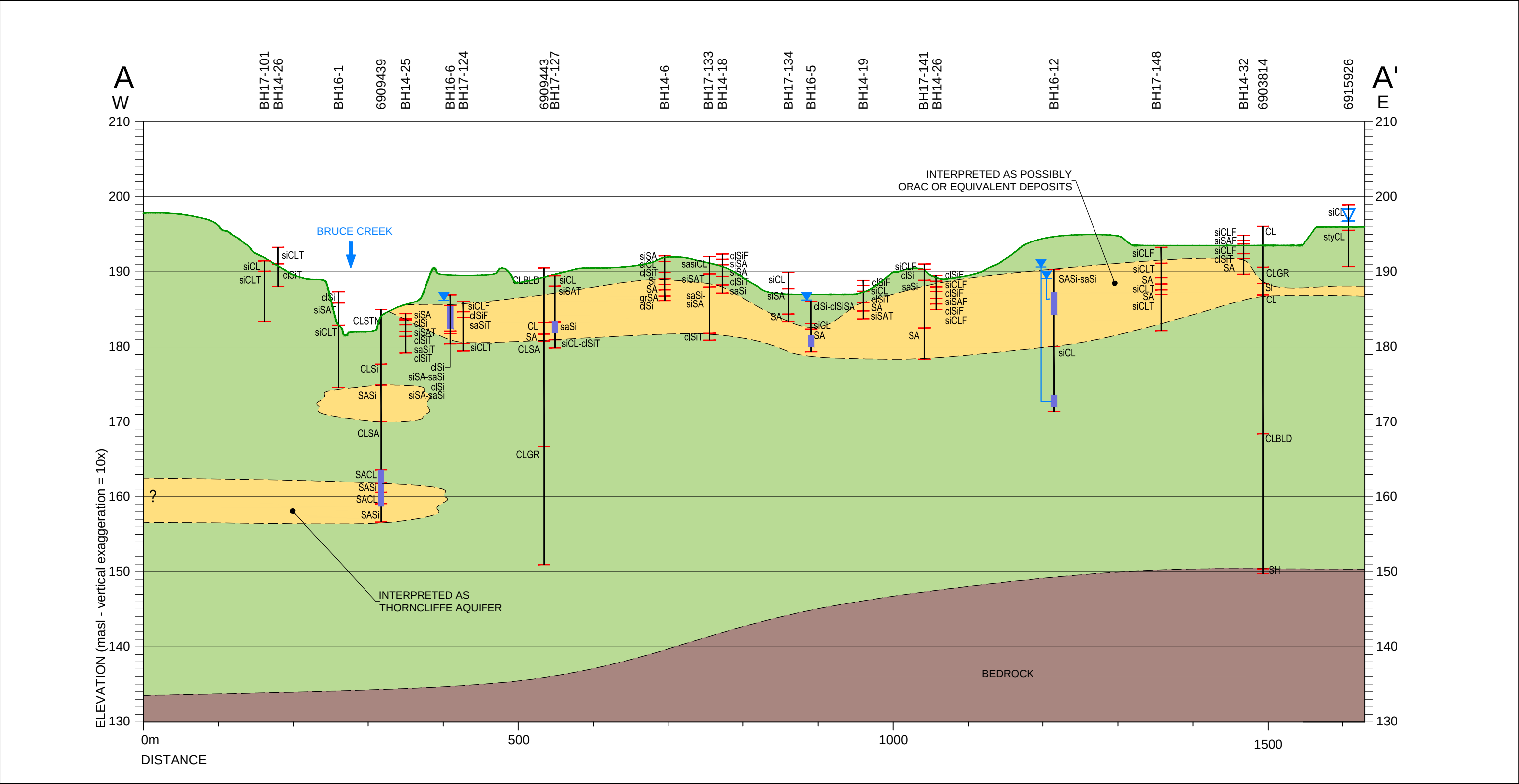
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**FIGURE 5**

**CROSS SECTION LOCATION KEY**

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**Stantec**

**BEACON**  
ENVIRONMENTAL

**BURNSIDE**

0 50 100 200 300 400  
Metres

**Legend**

**WELL IDENTIFICATION**

EXISTING GROUNDLINE

GEOLOGICAL STRATIGRAPHY CONTACT

STATIC WATER LEVEL (MOECC WELL RECORD)

MEASURED WATER LEVEL (APRIL 22, 2016)

WELL SCREEN

CLAYEY SILT TILL

SANDY SILT

SHALE

INTERPRETED GEOLOGICAL CONTACT

cl clayey  
si silty  
sa sandy  
gr gravelly  
TS Topsoil

CL Clay  
SI Silt  
SA Sand  
GR Gravel  
STN Stones  
BLD Boulder  
LMSN Limestone

WATERCOURSE CROSSING

**HYDROGEOLOGICAL ASSESSMENT  
AND WATER BALANCE  
4134 16TH AVENUE**

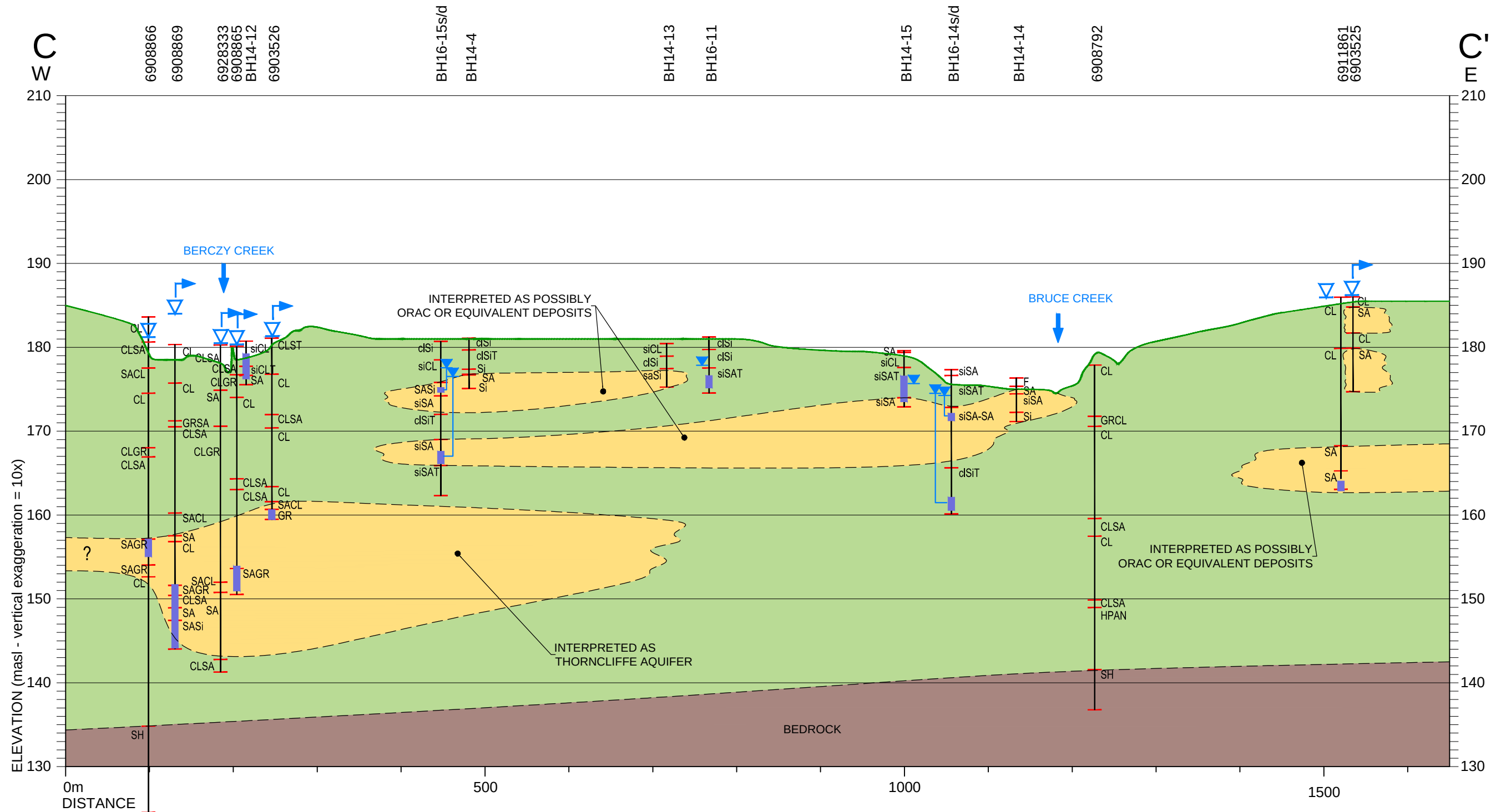
**FIGURE 6**

**INTERPRETED GEOLOGICAL  
CROSS SECTION A-A'**

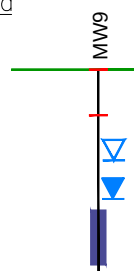
**OCTOBER 2017**







#### Legend



WELL IDENTIFICATION  
EXISTING GROUNDLINE  
GEOLOGICAL STRATIGRAPHY CONTACT  
STATIC WATER LEVEL (MOECC WELL RECORD)  
MEASURED WATER LEVEL (APRIL 22, 2016)  
WELL SCREEN

CLAYEY SILT TILL  
SANDY SILT  
SHALE  
INTERPRETED GEOLOGICAL CONTACT

cl clayey  
si silty  
sa sandy  
gr gravelly  
TS Topsoil

CL Clay  
Si Silt  
SA Sand  
GR Gravel  
STN Stones  
BLD Boulder  
LMSN Limestone

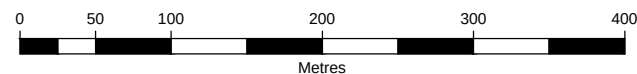
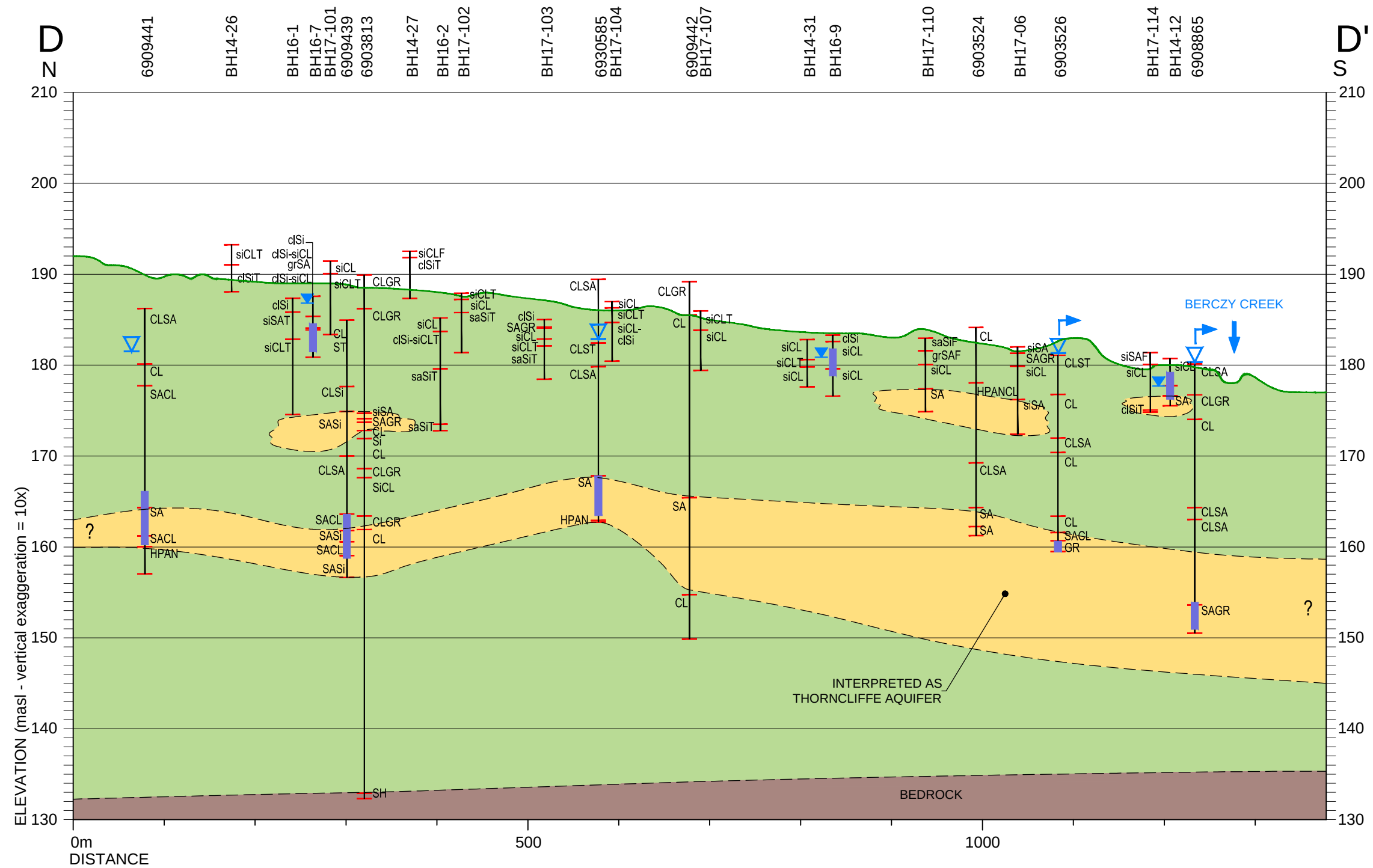
WATERCOURSE CROSSING

HYDROGEOLOGICAL ASSESSMENT  
AND WATER BALANCE  
4134 16TH AVENUE

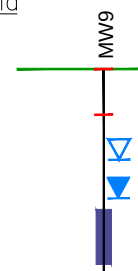
FIGURE 8

INTERPRETED GEOLOGICAL  
CROSS SECTION C-C'

SEPTEMBER 2016



#### Legend



- WELL IDENTIFICATION
- EXISTING GROUNDLINE
- GEOLOGICAL STRATIGRAPHY CONTACT
- STATIC WATER LEVEL (MOECC WELL RECORD)
- MEASURED WATER LEVEL (APRIL 22, 2016)
- WELL SCREEN

- CLAYEY SILT TILL
- SANDY SILT
- SHALE

INTERPRETED GEOLOGICAL CONTACT

cl  
si  
sa  
gr  
TS

clayey  
silty  
sandy  
gravelly  
Topsoil

CL Clay  
Si Silt  
SA Sand  
GR Gravel  
STN Stones  
BLD Boulder  
LMSN Limestone



WATERCOURSE CROSSING

#### HYDROGEOLOGICAL ASSESSMENT AND WATER BALANCE 4134 16TH AVENUE

FIGURE 9

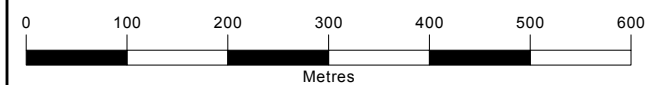
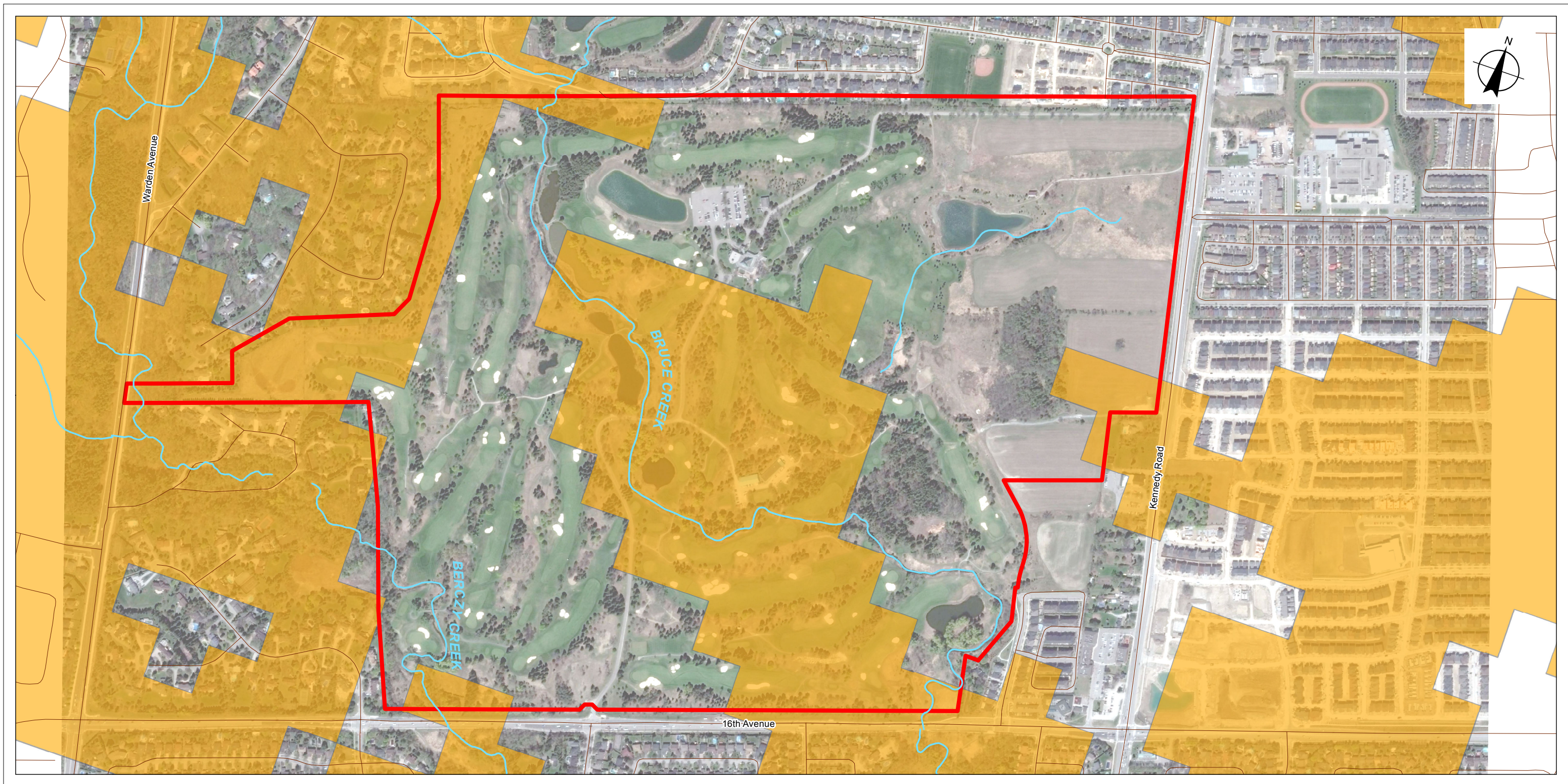
INTERPRETED GEOLOGICAL  
CROSS SECTION D-D'

OCTOBER 2017









#### LEGEND

- SUBJECT LANDS
- WATERCOURSE
- Highly Vulnerable Aquifers TRCA

HYDROGEOLOGICAL ASSESSMENT  
AND WATER BALANCE  
4134 16TH AVENUE

**FIGURE 12**

**HIGHLY VULNERABLE AQUIFER AREAS**

OCTOBER 2017



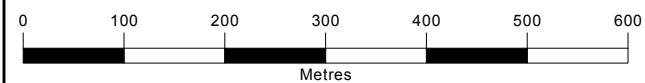






#### LEGEND

- SUBJECT LANDS
- WATERCOURSE
- Significant Groundwater Recharge Areas TRCA



HYDROGEOLOGICAL ASSESSMENT  
AND WATER BALANCE  
4134 16TH AVENUE

**FIGURE 14**

**RECHARGE AREAS**

OCTOBER 2017





# BURNSIDE

[ THE DIFFERENCE IS OUR PEOPLE ]



## Appendix A

### MOECC Well Records

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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|-----------------------------------|----------------------------------------|----------------------------|--------------------------------|------------------------------------------------------------------|---------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MARKHAM TOWN (MARKHA<br>CON 05(014)) | 17 634591<br>4858911 <sup>w</sup> | 1955/08<br>2801                        | 06                         |                                |                                                                  |                           |                              | 6903478 ( )<br>BRWN CLAY 0003 BLUE CLAY 0007 BLDR<br>CLAY MSND 0013 FSND 0024 BLUE CLAY<br>0030 BLUE CLAY MSND 0039 MSND SILT<br>CLAY 0069 BLUE CLAY 0075 MSND SILT<br>CLAY 0088 BLUE CLAY SILT 0123 BLUE<br>CLAY MSND GRVL 0163 BLUE CLAY MSND<br>BLDR 0164 BLUE CLAY MSND 0177 BLUE<br>CLAY MSND GRVL 0181 BLDR CLAY MSND<br>0182 BLUE CLAY MSND 0185 BLUE CLAY<br>GRVL 0208 BLUE SHLE 0212 |
| MARKHAM TOWN (MARKHA<br>CON 05(014)) | 17 635035<br>4859203 <sup>w</sup> | 1972/07<br>4610                        | 08 16<br>10                | SA 0108                        | -008 / 080<br>200 / 24:0                                         | MN                        | 0110<br>07<br>0117<br>07     | 6910992 ( )<br>BLCK LOAM 0002 BLCK MUCK SAND GRVL<br>0015 GREY GRVL BLDR 0020 GREY SAND<br>GRVL CLAY 0028 GREY GRVL CLAY 0035<br>GREY CLAY SAND 0051 GREY CLAY SAND<br>GRVL 0076 GREY CLAY 0096 GREY CLAY<br>SILT 0104 GREY CLAY SILT FSND 0108<br>GREY SAND GRVL CLAY 0111 GREY SAND<br>GRVL 0125 GREY SHLE 0141                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(014)) | 17 635045<br>4858842 <sup>w</sup> | 1965/11<br>2105                        | 02                         | FR 0040                        | 005 /<br>006 / 3:0                                               | DO                        | 0039<br>05                   | 6903518 ( )<br>PRDG 0020 FSND 0022 BLUE CLAY 0040<br>GRVL 0044                                                                                                                                                                                                                                                                                                                                |
| MARKHAM TOWN (MARKHA<br>CON 05(014)) | 17 633735<br>4858434 <sup>w</sup> | 1953/01<br>4623                        | 05 05                      | FR 0225                        | 060 / 090<br>006 / 3:0                                           | DO                        |                              | 6903507 ( )<br>LOAM 0005 HPAN 0055 GRVL 0060 HPAN<br>0095 WHIT MSND 0210 SHLE 0232                                                                                                                                                                                                                                                                                                            |
| MARKHAM TOWN (MARKHA<br>CON 05(014)) | 17 635210<br>4858844 <sup>w</sup> | 1959/02<br>2105                        | 02                         | FR 0038                        | 013 /<br>006 / 3:30                                              | DO                        | 0037<br>05                   | 6903509 ( )<br>LOAM 0004 BRWN CLAY MSND 0013 BLUE<br>CLAY STNS 0038 GRVL 0042                                                                                                                                                                                                                                                                                                                 |
| MARKHAM TOWN (MARKHA<br>CON 05(014)) | 17 635536<br>4859189 <sup>w</sup> | 1964/08<br>5420                        | 34                         | FR 0034                        | 016 /<br>/ :0                                                    | DO                        |                              | 6903516 ( )<br>LOAM 0001 YLLW CLAY 0010 BLUE CLAY<br>0030 BLUE CLAY MSND 0040                                                                                                                                                                                                                                                                                                                 |
| MARKHAM TOWN (MARKHA<br>CON 05(014)) | 17 635077<br>4858972 <sup>w</sup> | 1958/07<br>3414                        | 04                         | FR 0036                        | / 026<br>010 / 2:0                                               | DO                        | 0032<br>04                   | 6903508 ( )<br>PRDG 0013 BLUE CLAY 0032 BRWN CSND<br>0036                                                                                                                                                                                                                                                                                                                                     |
| MARKHAM TOWN (MARKHA<br>CON 05(015)) | 17 633793<br>4859064 <sup>w</sup> | 1984/11<br>2517                        | 06                         | FR 0185                        | 005 /<br>004 / :0                                                | DO                        |                              | 6917518 ( )<br>GREY CLAY GRVL BLDR 0128 GREY GRNT<br>0204                                                                                                                                                                                                                                                                                                                                     |
| MARKHAM TOWN (MARKHA<br>CON 05(015)) | 17 635419<br>4859701 <sup>w</sup> | 1974/12<br>2610                        | 06 06                      |                                |                                                                  |                           |                              | 6912497 ( )<br>BRWN CLAY SAND 0018 GREY CLAY SAND<br>0065 GREY CLAY 0075 GREY CLAY SAND<br>0085 GREY CLAY 0160 GREY CLAY SAND<br>0170 GREY CLAY 0200 GREY CLAY SAND<br>0220 GREY SHLE 0330                                                                                                                                                                                                    |
| MARKHAM TOWN (MARKHA<br>CON 05(015)) | 17 633630<br>4858828 <sup>w</sup> | 1958/05<br>4508                        | 04 04                      | FR 0185                        | 020 / 230<br>002 / 5:0                                           | DO                        |                              | 6903519 ( )<br>BRWN CLAY 0040 BRWN CLAY MSND 0047<br>BRWN MSND 0070 GREY FSND 0185 GREY<br>SHLE 0241                                                                                                                                                                                                                                                                                          |
| MARKHAM TOWN (MARKHA<br>CON 05(015)) | 17 633607<br>4859204 <sup>w</sup> | 1966/03<br>4610                        | 07                         | FR 0208<br>FR 0159             | 070 / 072<br>012 / 5:0                                           | DO                        | 0204<br>09                   | 6903522 ( )<br>LOAM 0001 BRWN CLAY 0010 HPAN BLDR<br>0063 BLUE CLAY GRVL 0110 BLUE CLAY<br>0159 MSND 0161 BLUE CLAY 0171 CLAY<br>MSND 0185 BLUE CLAY 0208 FSND 0212<br>CSND GRVL 0213                                                                                                                                                                                                         |

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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                                                                 |
|--------------------------------------|-----------------------------------|----------------------------------------|----------------------------|--------------------------------|------------------------------------------------------------------|---------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MARKHAM TOWN (MARKHA<br>CON 05(015)) | 17 633755<br>4859063 <sup>w</sup> | 1976/11<br>2651                        | 06                         | FR                             | 033 / 141<br>004 / 4:0                                           | DO                        | 0128<br>08                   | 6913795 ( )<br>FILL 0003 BRWN CLAY 0012 GREY CLAY<br>GRVL 0083 GREY CLAY SAND 0111 FSND<br>0122 GREY CLAY SAND 0131 CSND 0141<br>GREY CLAY SAND 0141                                            |
| MARKHAM TOWN (MARKHA<br>CON 05(015)) | 17 634375<br>4859423 <sup>w</sup> | 1973/07<br>1663                        | 05                         | FR 0069<br>FR 0110             | 013 / 072<br>005 / 2:30                                          | DO                        | 0075<br>04                   | 6911701 ( )<br>BRWN LOAM 0001 YLLW CLAY BLDR 0016<br>BLUE CLAY SAND 0047 BLUE CLAY 0069<br>GREY SAND GRVL 0098 BLUE CLAY GRVL<br>0110 GREY SAND GRVL 0127                                       |
| MARKHAM TOWN (MARKHA<br>CON 05(015)) | 17 633757<br>4859172 <sup>w</sup> | 1962/07<br>1413                        | 05                         | FR 0132                        | 012 / 095<br>002 / 3:0                                           | DO                        | 0128<br>04                   | 6903521 ( )<br>HPAN 0125 FSND 0132                                                                                                                                                              |
| MARKHAM TOWN (MARKHA<br>CON 05(015)) | 17 634699<br>4859490 <sup>w</sup> | 1961/08<br>4813                        | 05                         | FR 0097                        | -001 / 006<br>/ :0                                               | DO                        | 0095<br>05                   | 6903520 ( )<br>FILL 0003 BRWN CLAY 0018 BLUE CLAY<br>0036 CLAY QSND 0050 HPAN 0072 CLAY<br>0091 MSND 0101                                                                                       |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635105<br>4859863 <sup>w</sup> | 1968/08<br>4610                        | 06                         |                                |                                                                  |                           |                              | 6908792 ( )<br>BRWN CLAY 0020 GRVL CLAY BLDR 0024<br>BLUE CLAY 0060 BLUE CLAY MSND 0067<br>BLUE CLAY 0092 CLAY MSND 0095 HPAN<br>0119 BLUE SHLE 0135                                            |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635325<br>4860223 <sup>w</sup> | 1970/06<br>5459                        | 34                         | FR 0018                        | / :0                                                             | DO                        |                              | 6910172 ( )<br>BLCK LOAM 0002 BRWN CLAY MSND 0009<br>BLUE CLAY 0018 GREY MSND 0020 BLUE<br>CLAY STNS 0022                                                                                       |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635391<br>4859987 <sup>w</sup> | 1954/10<br>4619                        | 04                         | FR 0037                        | / :0                                                             | DO                        |                              | 6903525 ( )<br>BRWN CLAY 0004 MSND 0014 BLUE MSND<br>0020 FSND 0037                                                                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635329<br>4860256 <sup>w</sup> | 1955/02<br>1413                        | 06                         | FR 0017                        | / :0                                                             | DO                        |                              | 6903523 ( )<br>PRDG 0009 BLUE CLAY 0017                                                                                                                                                         |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 633369<br>4859817 <sup>w</sup> | 1987/09<br>1413                        | 06                         | FR 0079                        | 004 / 060<br>005 / 4:10                                          | DO                        | 0073<br>06                   | 6919047 (13698)<br>BRWN CLAY STNS HARD 0006 BRWN SAND<br>STNS LOOS 0014 GREY CLAY SLTY 0069<br>BRWN SAND GRVL CLN 0079 GREY CLAY DNSE<br>0088                                                   |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 637355<br>4860778 <sup>w</sup> | 1989/06<br>5459                        | 06                         | FR 0062                        | / 050<br>030 / 1:0                                               | DO                        | 0064<br>03                   | 6920491 (58314)<br>BRWN CLAY 0007 BLUE CLAY SOFT 0016<br>BLUE CLAY GRVL 0019 BLUE CLAY SAND<br>0040 GREY SAND FSND 0054 GREY CLAY<br>STNS 0062 GREY GRVL 0067                                   |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635385<br>4859920 <sup>w</sup> | 1990/11<br>1413                        | 06                         | FR 0118                        | / 100<br>030 / 1:0                                               | DO                        | 0115<br>03                   | 6921321 (91655)<br>BRWN CLAY DNSE 0017 GREY CLAY DNSE<br>0037 GREY CLAY SILT LYRD 0078 BLCK<br>SAND GRVL CGVL 0118 BLCK SHLE HARD<br>0119                                                       |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 633915<br>4859543 <sup>w</sup> | 1978/08<br>4816                        | 06                         | FR 0190                        | 011 / 185<br>002 / 3:0                                           |                           | 0195<br>03                   | 6914701 ( )<br>CLAY GRVL BLDR 0019 SAND 0031 CLAY<br>GRVL SAND 0053 SAND SHLE 0061 CLAY<br>0076 SAND CLAY 0153 CLAY SILT 0183<br>SAND GRVL CLAY 0197 SAND 0204 GRVL<br>SHLE 0209 BRWN SHLE 0210 |

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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                                                                |
|--------------------------------------|-----------------------------------|----------------------------------------|----------------------------|--------------------------------|------------------------------------------------------------------|---------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 634148<br>4859760 <sup>w</sup> | 1953/06<br>4619                        | 04                         | FR 0065                        | /<br>/ :0                                                        | DO                        |                              | 6903524 ()<br>BRWN CLAY 0020 HPAN CLAY STNS 0049<br>BLUE CLAY MSND 0065 FSND 0072 FSND<br>CSND 0075                                                                                            |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 634138<br>4859663 <sup>w</sup> | 1962/10<br>5420                        | 34                         | FR 0030                        | 012 /<br>/ :0                                                    | ST<br>DO                  |                              | 6903526 ()<br>LOAM 0001 YLLW CLAY MSND 0010 BLUE<br>CLAY 0030 GRVL 0032                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 634084<br>4859636 <sup>w</sup> | 2004/08<br>1663                        | 07                         | FR 0095                        | -003 /<br>070 / 1:0                                              | IR                        |                              | 6928333 (Z19436) A013022<br>BLCK LOAM 0001 BRWN CLAY SAND 0018<br>BRWN MSND 0032 BLUE CLAY GRVL LYRD<br>0093 GREY SAND CLAY DRTY 0097 GREY<br>MSND FSND 0123 BLUE CLAY FSND LYRD<br>0128       |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635316<br>4860217 <sup>w</sup> | 1974/08<br>5459                        | 06                         | FR 0069                        | 012 / 055<br>020 / 1:0                                           | DO                        | 0071<br>04                   | 6912452 ()<br>LOAM 0002 BRWN CLAY 0018 BLUE CLAY<br>0060 BLUE CLAY SAND 0069 BLUE CSND<br>0075                                                                                                 |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 631639<br>4858619 <sup>w</sup> | 1999/08<br>1663                        |                            |                                |                                                                  | NU                        |                              | 6925042 (206290)<br>BRWN CLAY SNDY 0000 YLLW UNKN 0007<br>BRWN CLAY SNDY GRVL 0021 YLLW UNKN<br>0063                                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635375<br>4860043 <sup>w</sup> | 1981/08<br>5459                        | 06                         | FR 0038                        | 001 / 035<br>010 / :0                                            | DO                        | 0044<br>03                   | 6916014 ()<br>PRDG 0015 BLUE CLAY STNS 0031 BLUE<br>CLAY SOFT 0038 BLUE SAND 0047                                                                                                              |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 633875<br>4859543 <sup>w</sup> | 1978/07<br>4816                        | 06                         | FR 0189<br>FR 0035             | 019 /<br>004 / 2:0                                               |                           |                              | 6914699 ()<br>CLAY SAND STNS 0025 SAND GRVL BLDR<br>0050 GRVL SAND CLAY 0065 SAND CLAY<br>SILT 0189 MSND 0206 CLAY SAND STNS<br>0211 BRWN SHLE 0215                                            |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 634045<br>4859573 <sup>w</sup> | 1968/12<br>4610                        | 06                         | FR 0108                        | -012 / 077<br>030 / :0                                           | NU                        | 0094<br>25                   | 6908869 ()<br>LOAM 0001 BRWN CLAY 0015 BLUE CLAY<br>0030 GRVL MSND 0032 CLAY MSND 0066<br>MSND CLAY 0075 MSND 0077 BLUE CLAY<br>0094 MSND GRVL 0098 CLAY MSND 0103<br>MSND 0108 MSND SILT 0119 |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635355<br>4860023 <sup>w</sup> | 1982/08<br>5459                        | 06                         | FR 0050                        | 003 / 045<br>010 / :0                                            | DO                        | 0051<br>03                   | 6916404 ()<br>BRWN CLAY 0019 BLUE CLAY STNS 0038<br>BLUE CLAY SAND SOFT 0046 BLUE SAND<br>CLAY SOFT 0050 BLUE SAND 0054                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 633915<br>4859543 <sup>w</sup> | 1978/12<br>4816                        | 06                         | UK 0033                        | 002 / 018<br>004 / 2:0                                           | MN                        | 0038<br>05                   | 6914947 ()<br>SAND CLAY LYRD 0009 CLAY HARD 0015<br>SAND SILT CMTD 0033 FSND MSND SILT<br>0043 CLAY GRVL STNS 0062                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 634155<br>4859513 <sup>w</sup> | 1968/09<br>4610                        | 07                         | FR 0087                        | -003 /<br>016 / 2:0                                              | NU                        | 0086<br>10                   | 6908865 ()<br>LOAM 0008 CLAY MSND GRVL 0011 CLAY<br>GRVL 0020 BLUE CLAY 0052 CLAY MSND<br>GRVL 0056 CLAY MSND 0087 MSND GRVL<br>0097                                                           |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 633535<br>4859363 <sup>w</sup> | 1978/07<br>4816                        | 06                         | FR 0194                        | 069 /<br>010 / 2:0                                               | DO                        | 0197<br>03                   | 6914698 ()<br>SAND CLAY STNS 0062 CLAY HARD 0090<br>CLAY SOFT 0142 CLAY SAND LYRD 0245                                                                                                         |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 633875<br>4859543 <sup>w</sup> | 1978/08<br>4816                        | 06                         | FR 0189                        | 023 /<br>/ :0                                                    |                           |                              | 6914700 ()<br>PRDG 0197                                                                                                                                                                        |

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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                                                                                                 |
|--------------------------------------|-----------------------------------|----------------------------------------|----------------------------|--------------------------------|------------------------------------------------------------------|---------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635375<br>4859983 <sup>w</sup> | 1973/09<br>5459                        | 06                         | FR 0070                        | / 060<br>008 / 2:30                                              | DO                        | 0072<br>03                   | 6911861 ()<br>LOAM 0002 BLUE CLAY 0020 BLUE CLAY<br>SILT 0058 FSND 0068 CSND 0075                                                                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635415<br>4859933 <sup>w</sup> | 1973/05<br>5459                        | 30                         |                                | 010 /<br>/ :0                                                    | DO                        |                              | 6911439 ()<br>BRWN CLAY 0008 BLUE CLAY 0015 BLUE<br>CLAY 0020                                                                                                                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 633369<br>4859817 <sup>w</sup> | 1987/10<br>1413                        | 06                         | FR 0136                        | 012 / 030<br>024 / 2:30                                          | DO<br>ST                  | 0129<br>06                   | 6919099 ()<br>BRWN CLAY SAND PCKD 0016 BLUE CLAY<br>DNSE 0079 GREY SAND SILT CLAY 0122<br>GREY SAND CLN 0136                                                                                                                    |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 635324<br>4860451 <sup>w</sup> | 1987/08<br>5459                        | 06                         | FR 0067                        | -004 / 030<br>020 / 1:0                                          | DO                        | 0068<br>03                   | 6919191 ()<br>BRWN CLAY STNS 0014 BLUE CLAY 0030<br>BLUE CLAY SAND 0035 BLUE CLAY 0058<br>BLUE CLAY SOFT 0064 BLUE SAND CLAY<br>0067 BLUE GRVL 0071                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 634045<br>4859473 <sup>w</sup> | 1968/10<br>4610                        | 07                         | FR 0087                        | 008 / 075<br>075 / 9:0                                           | IR                        | 0087<br>07                   | 6908866 ()<br>BRWN CLAY 0010 CLAY MSND STNS 0020<br>MSND CLAY 0030 BLUE CLAY 0051 CLAY<br>GRVL 0055 CLAY MSND GRVL 0087 MSND<br>GRVL 0097 MSND GRVL CLAY 0102 CLAY<br>MSND GRVL 0160 BLUE SHLE 0194                             |
| MARKHAM TOWN (MARKHA<br>CON 05(016)) | 17 633955<br>4859733 <sup>w</sup> | 1968/11<br>4610                        |                            | UK 0044                        |                                                                  | NU                        |                              | 6908868 ()<br>LOAM 0001 BRWN CLAY 0020 BLUE CLAY<br>0044 MSND 0048 MSND 0084 BLUE CLAY<br>MSND 0094                                                                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(017)) | 17 635278<br>4860313 <sup>w</sup> | 1986/06<br>5459                        | 06                         | FR 0118                        | 020 / 118<br>015 / 2:0                                           | DO                        | 0118<br>06                   | 6918617 (01193)<br>BRWN CLAY SAND 0009 GREY CLAY STNS<br>0023 GREY CLAY SILT 0044 GREY CLAY<br>STNS 0053 GREY SAND STNS SILT 0058<br>GREY CLAY SAND STNS 0097 GREY SILT<br>SAND 0107 GREY CLAY STNS 0111 GREY<br>SAND STNS 0125 |
| MARKHAM TOWN (MARKHA<br>CON 05(017)) | 17 634780<br>4860158 <sup>w</sup> | 1965/08<br>2801                        | 06                         |                                |                                                                  |                           |                              | 6903806 ()<br>LOAM 0004 CLAY GRVL BLDR 0009 MSND<br>0017 BLUE CLAY 0033 MSND SILT 0040<br>CLAY BLDR 0043 SILT FSND 0053 MSND<br>GRVL 0064 CLAY GRVL 0069 CLAY GRVL<br>BLDR 0070 CLAY GRVL SHLE 0128                             |
| MARKHAM TOWN (MARKHA<br>CON 05(017)) | 17 634615<br>4860183 <sup>w</sup> | 1969/06<br>4610                        | 07                         | FR 0046                        |                                                                  | NU                        |                              | 6909446 ()<br>CLAY 0002 MSND GRVL BLDR 0006 MSND<br>BLDR 0022 BLUE CLAY 0030 CLAY MSND<br>0044 GRVL CLAY 0046 FSND CLAY 0052<br>FSND 0058 CLAY 0064 BLUE CLAY GRVL<br>0083                                                      |
| MARKHAM TOWN (MARKHA<br>CON 05(017)) | 17 634335<br>4860123 <sup>w</sup> | 1969/06<br>4610                        | 07                         | FR 0059                        |                                                                  | NU                        |                              | 6909445 ()<br>BRWN CLAY 0007 CLAY BLDR 0010 CLAY<br>0034 CLAY GRVL 0039 CLAY MSND 0059<br>MSND 0062 MSND CLAY 0064 CLAY 0066<br>CLAY GRVL 0122                                                                                  |
| MARKHAM TOWN (MARKHA<br>CON 05(017)) | 17 633380<br>4859891 <sup>w</sup> | 1961/07<br>2204                        | 02                         | FR 0064                        | -014 /<br>020 / :0                                               | DO                        |                              | 6903527 ()<br>BLCK LOAM 0002 GRVL 0004 BLUE CLAY<br>0064 CSND 0065                                                                                                                                                              |



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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                                                                                             |
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| MARKHAM TOWN (MARKHA<br>CON 05(017)) | 17 633955<br>4860033 <sup>w</sup> | 1969/04<br>4610                        |                            |                                |                                                                  |                           |                              | 6909442 ( )<br>CLAY GRVL BLDR 0012 BLUE CLAY 0078<br>FSND CLAY 0113 BLUE CLAY 0129                                                                                                                                          |
| MARKHAM TOWN (MARKHA<br>CON 05(017)) | 17 634265<br>4860163 <sup>w</sup> | 1969/03<br>4610                        | 07                         | FR 0072                        |                                                                  | NU                        |                              | 6909440 ( )<br>BRWN CLAY 0015 BLUE CLAY 0030 CLAY<br>MSND 0063 MSND CLAY 0076 CLAY 0115<br>SHLE CLAY 0125                                                                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 05(017)) | 17 635203<br>4860588 <sup>w</sup> | 1975/08<br>5459                        | 06                         | FR 0070                        | 028 / 070<br>020 / 2:0                                           | DO                        | 0070<br>04                   | 6912887 ( )<br>BRWN CLAY 0015 BLUE CLAY 0035 GREY<br>SAND 0080                                                                                                                                                              |
| MARKHAM TOWN (MARKHA<br>CON 05(017)) | 17 635314<br>4860366 <sup>w</sup> | 1961/09<br>5420                        | 34                         | FR 0019                        | 004 /<br>/ :0                                                    | DO                        |                              | 6903528 ( )<br>LOAM 0001 YLLW CLAY 0009 BLUE CLAY<br>GRVL STNS 0015 MSND CLAY 0021                                                                                                                                          |
| MARKHAM TOWN (MARKHA<br>CON 05(017)) | 17 634895<br>4860253 <sup>w</sup> | 1969/06<br>4610                        | 07                         | FR 0052                        | 012 / 043<br>018 / 5:0                                           | NU                        | 0056<br>14                   | 6909444 ( )<br>LOAM 0002 BRWN CLAY 0014 CLAY GRVL<br>0052 MSND GRVL 0062 MSND FSND 0070<br>CLAY 0073                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633353<br>4860091 <sup>w</sup> | 1999/06<br>1663                        | 06                         | FR 0129                        | 035 / 056<br>018 / 1:0                                           | DO                        | 0133<br>03                   | 6925249 (213471)<br>BLUE LOAM 0001 BRWN GRVL SAND 0009<br>BLUE CLAY SLTY SILT 0041 BLUE CLAY<br>0064 GREY SAND 0066 BLUE CLAY SAND<br>0129 GREY MSND 0137 GREY FSND 0148                                                    |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 634249<br>4860525 <sup>l</sup> | 1996/08<br>1413                        | 06                         | FR 0117                        | 040 / 114<br>020 / 1:0                                           | DO                        | 0114<br>03                   | 6923678 (166608)<br>BRWN CLAY HARD 0017 GREY CLAY HARD<br>0109 GREY CGVL 0117                                                                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633407<br>4860155 <sup>w</sup> | 1966/08<br>4305                        | 04                         | FR 0105                        | 032 / 095<br>015 / 13:0                                          | DO                        | 0105<br>07                   | 6903536 ( )<br>LOAM 0002 CSND 0035 FSND 0068 GREY<br>CLAY 0105 MSND CLAY 0112                                                                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 634395<br>4860503 <sup>w</sup> | 1969/05<br>4610                        | 06                         |                                |                                                                  |                           |                              | 6909443 ( )<br>LOAM 0002 BRWN CLAY BLDR 0024 BLUE<br>CLAY 0029 MSND BLDR 0032 CLAY MSND<br>0078 CLAY GRVL 0130                                                                                                              |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633483<br>4860457 <sup>w</sup> | 1986/10<br>3903                        | 06                         | FR 0134                        | 031 / 087<br>015 / 3:0                                           | DO                        | 0129<br>04                   | 6918614 ( )<br>BRWN CLAY STNS DNSE 0017 GREY CLAY<br>SILT LYRD 0034 GREY CLAY STNS HARD<br>0097 GREY CLAY SILT LYRD 0129 GREY<br>CLAY SAND LOOS 0134                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 634035<br>4860438 <sup>w</sup> | 1965/08<br>2801                        | 02                         | FR 0050                        | / 020<br>027 / 8:0                                               | NU                        | 0066<br>22                   | 6903813 ( )<br>LOAM 0001 BLDR CLAY 0003 CLAY GRVL<br>BLDR 0012 CLAY GRVL 0050 SILT FSND<br>0052 MSND GRVL 0053 CLAY 0056 SILT<br>0059 CLAY 0070 CLAY GRVL 0073 SILT<br>CLAY 0087 CLAY GRVL BLDR 0092 CLAY<br>0187 SHLE 0189 |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633359<br>4860171 <sup>w</sup> | 1963/08<br>1515                        | 04                         | FR 0107                        | 016 / 106<br>007 / 8:0                                           | DO                        | 0108<br>06                   | 6903530 ( )<br>LOAM 0001 MSND GRVL 0080 BLUE CLAY<br>0107 MSND 0114                                                                                                                                                         |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633413<br>4860375 <sup>w</sup> | 1964/04<br>3108                        | 04                         | FR 0139                        | 038 / 065<br>005 / 2:30                                          | DO                        | 0141<br>03                   | 6903533 ( )<br>LOAM 0001 BRWN CLAY STNS 0012 BLUE<br>CLAY STNS 0025 BLUE CLAY MSND 0052<br>BLUE CLAY 0120 BLUE CLAY STNS 0139<br>MSND 0144                                                                                  |

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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                                                                                                                                                                    |
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| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 634249<br>4860525 <sup>L</sup> | 1965/05<br>3108                        | 04                         | FR 0154                        | 045 / 050<br>010 / 4:0                                           | DO                        | 0155<br>04                   | 6903535 ( )<br>LOAM 0001 YLLW CLAY 0052 BLUE CLAY<br>0126 MSND 0135 CLAY MSND 0142 MSND<br>0149 BLUE MSND CLAY 0154 MSND 0159                                                                                                                                                                      |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633334<br>4860402 <sup>W</sup> | 1975/08<br>5459                        | 06                         | FR 0114                        | 050 / 060<br>030 / 3:0                                           | DO                        | 0115<br>03                   | 6912788 ( )<br>LOAM 0002 BRWN CLAY 0019 BLUE CLAY<br>0040 BLUE CLAY GRVL 0080 BLUE CLAY<br>0114 BLUE CSND 0118                                                                                                                                                                                     |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 634245<br>4860525 <sup>L</sup> | 2000/09<br>5459                        | 06                         | FR 0090                        | 015 / 040<br>025 / 1:0                                           |                           | 0090<br>09                   | 6925588 (221537)<br>BRWN CLAY SOFT 0018 GREY CLAY 0032<br>GREY CLAY SNDY 0070 GREY CLAY SAND<br>SOFT 0081 GREY CLAY SNDY 0084 GREY<br>MSND 0088 GREY CLAY SNDY 0090 GREY<br>MSND 0094 GREY MSND 0100                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 634245<br>4860525 <sup>L</sup> | 2000/09<br>5459                        | 06 02                      |                                |                                                                  |                           | 0127<br>05                   | 6925590 (221536)<br>BLCK LOAM 0001 BRWN CLAY 0013 GREY<br>CLAY STNS SOFT 0028 GREY CLAY SAND<br>0070 GREY CLAY SAND SOFT 0079 GREY<br>CSND 0081 GREY CLAY SILT 0083 GREY<br>MSND 0094 GREY FSND 0099 GREY CLAY<br>GRVL 0102 GREY CLAY GRVL 0126 GREY<br>SAND CLAY SOFT 0134 GREY CLAY STNS<br>0142 |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633404<br>4860485 <sup>W</sup> | 1996/08<br>1413                        | 06                         | FR 0117                        | 060 / 100<br>040 / 1:0                                           | DO                        | 0114<br>03                   | 6923675 (166603)<br>BRWN CLAY HARD 0017 GREY CLAY STNS<br>HARD 0050 GREY CLAY DNSE 0105 GREY<br>CSND 0110 GREY CGVL 0117                                                                                                                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633385<br>4860282 <sup>W</sup> | 1958/05<br>2527                        | 02                         | FR 0104                        | 034 /<br>003 / 8:0                                               | DO                        | 0103<br>05                   | 6903529 ( )<br>CLAY 0041 CLAY MSND 0052 BLUE CLAY<br>0078 MSND 0089 QSNL 0093 WHIT CLAY<br>0103 MSND 0108                                                                                                                                                                                          |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633461<br>4860364 <sup>W</sup> | 1963/09<br>5420                        | 34                         | FR 0012                        | 012 /<br>004 / :0                                                | DO                        |                              | 6903531 ( )<br>LOAM 0001 YLLW CLAY 0010 MSND GRVL<br>0014 BLUE CLAY 0034                                                                                                                                                                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633494<br>4860189 <sup>W</sup> | 1963/10<br>5420                        | 34                         | FR 0025                        | 022 /<br>002 / :0                                                | DO                        |                              | 6903532 ( )<br>LOAM 0001 YLLW CLAY 0010 BLUE CLAY<br>0025 MSND 0026 BLUE CLAY 0046                                                                                                                                                                                                                 |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633463<br>4860228 <sup>W</sup> | 1964/06<br>5420                        | 05                         | FR 0146                        | 031 / 045<br>020 / 7:0                                           | DO                        | 0146<br>04                   | 6903534 ( )<br>PRDG 0047 CLAY GRVL 0060 BLUE CLAY<br>0120 CLAY MSND 0141 MSND 0150                                                                                                                                                                                                                 |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 634035<br>4860493 <sup>W</sup> | 1969/02<br>4610                        | 06                         | FR 0049<br>FR 0070             | / 036<br>050 / 24:0                                              | IR                        | 0070<br>16                   | 6909439 ( )<br>LOAM 0002 BRWN CLAY STNS 0024 BLUE<br>CLAY SILT 0033 MSND SILT GRVL 0049<br>CLAY MSND SILT 0070 CSND FSND CLAY<br>0076 FSND SILT 0080 FSND CSND CLAY<br>0085 FSND SILT CLAY 0093                                                                                                    |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633915<br>4860643 <sup>W</sup> | 1969/04<br>4610                        | 07                         | FR 0072                        | 016 / 050<br>100 / 6:0                                           | IR                        | 0066<br>19                   | 6909441 ( )<br>CLAY MSND 0020 BLUE CLAY 0028 FSND<br>CLAY 0072 CSND 0082 MSND CLAY 0086<br>HPAN 0096                                                                                                                                                                                               |

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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                                                                                                                                                                   |
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| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633315<br>4860303 <sup>w</sup> | 1980/04<br>5459                        | 06                         | FR 0113                        | 050 / 110<br>015 / :0                                            | DO                        | 0113<br>03                   | 6915725 ()<br>BLCK LOAM 0002 BRWN CLAY SOFT 0019<br>BLUE CLAY SOFT 0031 BLUE CLAY STNS<br>0079 BLUE CLAY SOFT 0113 BLUE SAND<br>0116                                                                                                                                                              |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633494<br>4860512 <sup>w</sup> | 1985/10<br>3903                        | 06 06                      | FR 0130                        | 046 / 120<br>020 / 5:0                                           | DO                        | 0130<br>03                   | 6917770 ()<br>BRWN CLAY SAND LYRD 0011 GREY CLAY<br>STNS HARD 0031 GREY CLAY DNSE 0060<br>GREY CLAY STNS HARD 0116 BRWN CLAY<br>SAND LYRD 0119 GREY CLAY DNSE 0129<br>BRWN CLAY SAND LYRD 0134 GREY CLAY<br>DNSE 0144 GREY CLAY STNS HARD 0185<br>GREY CLAY SHLE HARD 0196 GREY SHLE<br>DNSE 0207 |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633425<br>4860223 <sup>w</sup> | 1970/07<br>4813                        | 05                         | FR 0159                        | 055 / 060<br>010 / 2:50                                          | DO                        | 0155<br>04                   | 6909881 ()<br>BLCK LOAM 0002 BLUE CLAY STNS 0100<br>SILT 0111 GREY CLAY 0142 GRVL 0150<br>MSND 0159                                                                                                                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633375<br>4860308 <sup>w</sup> | 1968/08<br>5420                        | 05                         | FR 0140                        | 034 / 080<br>009 / 6:0                                           | DO                        | 0159<br>04                   | 6908803 ()<br>BRWN CLAY STNS 0008 GRVL CLAY 0010<br>BRWN CLAY BLDR 0045 BLUE CLAY 0140<br>GRVL SILT CLAY 0155 GREY MSND 0163                                                                                                                                                                      |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633354<br>4860049 <sup>w</sup> | 1965/09<br>2801                        | 06                         | FR 0092                        |                                                                  |                           |                              | 6903537 ()<br>LOAM 0002 GRVL 0006 CLAY 0025 CLAY<br>SILT 0029 CLAY 0069 SILT 0073 CLAY<br>SILT 0080 CLAY 0092 GRVL MSND 0096<br>SILT 0108 SILT FSND 0119 CLAY 0178<br>CLAY BLDR 0192 SHLE 0194                                                                                                    |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633305<br>4860268 <sup>w</sup> | 1967/01<br>3519                        | 05                         | FR 0125                        | 040 / 080<br>010 / 6:0                                           | DO                        | 0126<br>04                   | 6903538 ()<br>LOAM 0002 CLAY STNS 0050 HPAN 0110<br>WHIT CLAY 0125 BLCK CSND 0130                                                                                                                                                                                                                 |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633399<br>4860327 <sup>w</sup> | 1968/01<br>1104                        | 06                         | FR 0105<br>FR 0134             | 039 / 136<br>004 / 48:0                                          | DO                        | 0138<br>04                   | 6903539 ()<br>LOAM 0006 GRVL 0033 HPAN 0044 CLAY<br>0049 CLAY GRVL 0064 SILT CLAY 0105<br>MSND SILT 0112 SILT 0134 MSND 0144                                                                                                                                                                      |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 633380<br>4860249 <sup>w</sup> | 1967/11<br>5420                        | 05                         | FR 0148                        | 040 / 080<br>008 / 3:0                                           | DO                        | 0151<br>04                   | 6903540 ()<br>LOAM 0001 BLDR CLAY 0035 CLAY MSND<br>STNS 0148 MSND 0155                                                                                                                                                                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 05(018)) | 17 635121<br>4860921 <sup>w</sup> | 1965/08<br>2801                        | 06                         |                                |                                                                  |                           |                              | 6903814 ()<br>LOAM 0001 CLAY 0018 CLAY GRVL 0025<br>SILT 0030 CLAY 0091 CLAY BLDR 0150<br>SHLE 0152                                                                                                                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 635015<br>4861470 <sup>w</sup> | 1996/09<br>3108                        |                            |                                |                                                                  |                           |                              | 6923713 (166663)                                                                                                                                                                                                                                                                                  |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633555<br>4860576 <sup>w</sup> | 1966/09<br>5420                        | 05                         | FR 0121                        | 040 / 065<br>010 / 10:0                                          | DO                        | 0121<br>04                   | 6903559 ()<br>PRDG 0005 BRWN CLAY STNS 0040 BLUE<br>CLAY 0100 HPAN 0115 BLUE CLAY 0121<br>MSND GRVL 0125                                                                                                                                                                                          |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633407<br>4860563 <sup>w</sup> | 1965/07<br>5420                        | 05                         | FR 0098                        | 020 / 030<br>010 / 3:0                                           | DO                        | 0096<br>04                   | 6903551 ()<br>CLAY BLDR 0060 BLUE CLAY MSND 0098<br>GRVL MSND 0100                                                                                                                                                                                                                                |

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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                                                            |
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| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633215<br>4860643 <sup>w</sup> | 1968/09<br>2104                        | 06                         | FR 0115                        | 040 / 130<br>004 / 72:0                                          | DO                        |                              | 6908692 ()<br>LOAM 0001 BRWN CLAY MSND 0020 GREY<br>CLAY MSND STNS 0115 GRVL MSND CLAY<br>0137                                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633265<br>4860803 <sup>w</sup> | 1968/06<br>5420                        | 05                         | FR 0120                        | 031 / 110<br>004 / 8:0                                           | DO                        | 0120<br>08                   | 6908769 ()<br>PRDG 0023 BLUE CLAY STNS 0038 BLUE<br>CLAY 0110 BLUE CLAY BLDR 0120 MSND<br>SILT GRVL 0130                                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633235<br>4860783 <sup>w</sup> | 1968/05<br>5420                        | 34                         | FR 0030                        | /<br>/ :0                                                        | DO                        |                              | 6908789 ()<br>LOAM 0001 BRWN CLAY 0011 BLUE CLAY<br>BLDR 0034                                                                                                                              |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 634167<br>4860935 <sup>l</sup> | 1994/10<br>5459                        | 06                         | FR 0148                        | 050 / 080<br>025 / 1:0                                           | DO                        | 0153<br>03                   | 6922923 (141542)<br>BLCK LOAM 0002 BRWN CLAY STNS 0018<br>GREY CLAY STNS 0065 GREY CLAY SLTY<br>0115 GREY SAND GRVL CLAY 0127 GREY<br>CLAY STNS 0148 GREY SAND MUCK 0156<br>GREY CLAY STNS |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 634166<br>4860935 <sup>l</sup> | 2000/04<br>5459                        | 06                         | FR 0071                        | 025 / 060<br>008 / 1:30                                          | DO                        | 0072<br>03                   | 6925321 (211663)<br>BLCK LOAM 0002 BRWN CLAY SAND STNS<br>0014 GREY CLAY SNDY 0058 GREY CLAY<br>SAND SILT 0071 GREY MSND 0075 GREY<br>CLAY SNDY 0075                                       |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 635038<br>4861179 <sup>w</sup> | 1996/09<br>3108                        |                            |                                |                                                                  |                           |                              | 6923714 (166662)<br>CLAY 0010 FILL CLAY CMTD 0010                                                                                                                                          |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633545<br>4860638 <sup>w</sup> | 1974/08<br>5459                        | 06                         | FR 0105                        | 042 / 116<br>008 / 3:0                                           | DO                        | 0113<br>03                   | 6912307 ()<br>BRWN CLAY 0020 BLUE CLAY STNS 0080<br>GREY SAND CLAY 0105 GREY SAND 0116                                                                                                     |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633395<br>4860583 <sup>w</sup> | 1976/11<br>2651                        | 06                         | FR                             | 028 / 114<br>002 / 4:0                                           | DO                        | 0107<br>04                   | 6913796 ()<br>LOAM 0002 BRWN CLAY GRVL 0008 GREY<br>CLAY GRVL 0104 SAND 0114 SAND CLAY<br>0114                                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633455<br>4860688 <sup>w</sup> | 1971/07<br>5459                        | 06                         | FR 0118                        | 041 / 075<br>006 / 5:0                                           | DO                        | 0120<br>05                   | 6910650 ()<br>BLUE CLAY STNS MSND 0035 BLUE CLAY<br>STNS 0118 MSND GRVL 0125                                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633855<br>4860943 <sup>w</sup> | 1977/07<br>3109                        | 30                         | FR 0044                        | 025 /<br>/ :0                                                    | DO                        |                              | 6914159 ()<br>LOAM 0002 BRWN CLAY STNY 0025 BLUE<br>CLAY STNY 0043 SAND 0045 BLUE CLAY<br>STNY 0052                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633516<br>4860903 <sup>w</sup> | 1975/11<br>5459                        | 06                         | UK 0145                        | 070 / 150<br>012 / 3:0                                           | DO                        | 0147<br>06                   | 6912994 ()<br>BRWN CLAY 0012 BRWN GRVL SAND 0027<br>BLUE CLAY STNS 0121 BLUE FSND 0124<br>BLUE CLAY 0145 BLUE CSND 0153                                                                    |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633785<br>4860963 <sup>w</sup> | 1969/07<br>4610                        | 06                         | FR 0059                        | / 039<br>007 / 11:0                                              | DO                        | 0056<br>04                   | 6909421 ()<br>BRWN CLAY 0004 BRWN CLAY MSND GRVL<br>0007 BLUE CLAY MSND 0024 BLUE CLAY<br>0057 GREY MSND SILT 0059 GREY MSND<br>GRVL 0063                                                  |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633335<br>4860503 <sup>w</sup> | 1968/05<br>5420                        |                            | FR 0109<br>FR 0145             | 028 / 150<br>002 / 6:0                                           | NU                        |                              | 6908794 ()<br>BRWN CLAY 0008 YLLW CLAY MSND 0024<br>HPAN 0042 BLUE CLAY 0109 BLUE CLAY<br>SILT 0113 BLUE CLAY 0145 GREY FSND<br>SILT 0153 BLUE CLAY SILT 0167 SHLE<br>0180                 |

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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                |
|--------------------------------------|-----------------------------------|----------------------------------------|----------------------------|--------------------------------|------------------------------------------------------------------|---------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 634818<br>4861336 <sup>w</sup> | 1959/12<br>5420                        | 30                         | FR 0014                        | 010 /<br>002 / :0                                                | ST                        |                              | 6903541 ()<br>YLLW CLAY 0007 BLUE CLAY 0012 GRVL<br>STNS 0015 BLUE CLAY STNS 0027                                                              |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633452<br>4860852 <sup>w</sup> | 1960/09<br>5420                        | 34                         | FR 0018                        | 009 /<br>004 / :0                                                | DO                        |                              | 6903542 ()<br>YLLW CLAY MSND 0006 YLLW CLAY 0012<br>BLUE CLAY 0034                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633355<br>4860422 <sup>w</sup> | 1960/12<br>2527                        | 02                         |                                |                                                                  |                           |                              | 6903543 ()<br>PRDG 0004 BRWN CLAY STNS 0027                                                                                                    |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633352<br>4860424 <sup>w</sup> | 1961/02<br>1622                        | 04                         | FR 0156                        | 100 / 156<br>006 / 8:0                                           | DO                        | 0156<br>04                   | 6903544 ()<br>PRDG 0005 BLUE CLAY BLDR 0030 BLUE<br>CLAY 0115 CSND 0155 FSND 0160                                                              |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633292<br>4860941 <sup>w</sup> | 1962/05<br>3414                        | 04                         | FR 0047                        | 012 / 044<br>005 / 8:0                                           | DO                        |                              | 6903545 ()<br>CLAY MSND STNS 0001 GREY CLAY BLDR<br>0047 GRVL 0048                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 635038<br>4861317 <sup>w</sup> | 1963/12<br>5420                        | 34                         | FR 0014                        | 014 /<br>/ :0                                                    | DO                        |                              | 6903546 ()<br>LOAM 0001 YLLW CLAY 0009 BLUE CLAY<br>MSND 0036                                                                                  |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633586<br>4860912 <sup>w</sup> | 1964/01<br>5420                        | 05                         | FR 0166                        | 042 / 050<br>006 / 4:0                                           | DO                        | 0167<br>05                   | 6903547 ()<br>PRDG 0034 BRWN CLAY MSND 0045 BRWN<br>CLAY BLDR 0070 BLUE CLAY MSND 0110<br>GREY MSND 0135 BLUE CLAY MSND 0166<br>GREY MSND 0172 |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633407<br>4860681 <sup>w</sup> | 1964/05<br>5420                        | 05                         | FR 0118                        | 025 / 115<br>006 / 24:0                                          | DO                        | 0118<br>04                   | 6903548 ()<br>CLAY STNS MSND 0050 BLUE CLAY 0105<br>GRVL CLAY 0118 CSND 0122                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633421<br>4860774 <sup>w</sup> | 1965/06<br>5420                        | 34                         | FR 0035                        | 018 /<br>/ :0                                                    | DO                        |                              | 6903549 ()<br>LOAM 0001 YLLW CLAY 0012 BLUE CLAY<br>STNS 0035 CLAY MSND STNS 0040                                                              |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633240<br>4860635 <sup>w</sup> | 1965/06<br>5420                        | 05                         | FR 0105                        | 039 / 100<br>006 / 5:0                                           | DO                        | 0105<br>04                   | 6903550 ()<br>PRDG 0035 BLUE CLAY 0105 MSND CSND<br>0107 CLAY 0109                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633482<br>4860995 <sup>w</sup> | 1965/10<br>5420                        | 05                         | FR 0094                        | 022 / 090<br>012 / 4:0                                           | DO                        | 0092<br>04                   | 6903552 ()<br>CLAY BLDR 0055 CLAY MSND STNS 0092<br>GRVL MSND 0096                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633205<br>4860797 <sup>w</sup> | 1966/02<br>5420                        | 05                         | FR 0102                        | 030 / 055<br>014 / 15:0                                          | DO                        | 0098<br>04                   | 6903553 ()<br>CLAY BLDR 0045 CLAY STNS 0102 MSND<br>0104                                                                                       |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633472<br>4860820 <sup>w</sup> | 1966/04<br>5420                        | 05                         | FR 0115                        | 045 / 115<br>008 / 4:0                                           | DO                        | 0115<br>04                   | 6903554 ()<br>LOAM 0002 YLLW CLAY MSND 0008 BRWN<br>CLAY BLDR 0045 BLUE CLAY BLDR 0115<br>GREY FSND 0120                                       |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633252<br>4860525 <sup>w</sup> | 1966/05<br>4305                        | 04                         | FR 0103                        | 031 / 085<br>008 / 8:0                                           | DO                        | 0100<br>06                   | 6903555 ()<br>LOAM 0002 CSND STNS 0020 GREY CLAY<br>0100 GRVL CLAY 0102 FSND CLAY 0103<br>CSND 0106                                            |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633339<br>4860339 <sup>w</sup> | 1966/07<br>5420                        | 05                         | FR 0102                        | 028 / 038<br>012 / 5:0                                           | DO                        | 0101<br>04                   | 6903556 ()<br>BRWN MSND 0006 BLDR CLAY 0022 CLAY<br>MSND 0040 BLUE CLAY 0102 GREY MSND<br>0105                                                 |



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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                                                                                                      |
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| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633241<br>4860735 <sup>w</sup> | 1966/08<br>5420                        | 05                         | FR 0111                        | 045 / 105<br>007 / 20:0                                          | DO                        | 0109<br>04                   | 6903557 ()<br>BRWN CLAY 0007 YLLW CLAY STNS 0028<br>BRWN CLAY STNS 0040 BLUE CLAY 0106<br>MSND CLAY 0111 GREY MSND 0113                                                                                                              |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 633524<br>4860628 <sup>w</sup> | 1966/09<br>5420                        | 05                         | FR 0106                        | 035 / 043<br>010 / 10:0                                          | DO                        | 0108<br>04                   | 6903558 ()<br>PRDG 0046 CLAY 0106 MSND 0112                                                                                                                                                                                          |
| MARKHAM TOWN (MARKHA<br>CON 05(019)) | 17 634979<br>4861462 <sup>w</sup> | 1996/09<br>3108                        |                            |                                |                                                                  |                           |                              | 6923715 (166661)                                                                                                                                                                                                                     |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 633315<br>4861213 <sup>w</sup> | 1970/11<br>3903                        | 06                         | UK 0138                        | 030 / 090<br>008 / 4:0                                           | DO                        | 0138<br>04                   | 6910100 ()<br>BLCK CLAY MSND STNS 0006 YLLW CLAY<br>STNS 0021 BLUE CLAY STNS 0065 STNS<br>MSND 0067 BLUE CLAY SILT STNS 0115<br>GREY MSND GRVL 0142                                                                                  |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 633195<br>4861023 <sup>w</sup> | 1983/05<br>5459                        | 06                         | FR 0217                        | 035 / 217<br>010 / 2:0                                           | DO                        | 0217<br>03                   | 6917027 ()<br>BRWN CLAY 0005 BLUE CLAY STNS 0093<br>BLUE CLAY SILT 0111 GREY SAND STNS<br>SILT 0137 BLUE CLAY SILT 0184 GREY<br>SAND SILT 0205 WHIT CLAY STNS 0209<br>GREY SAND STNS CLN 0221                                        |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 634085<br>4861342 <sup>L</sup> | 1991/03<br>5459                        | 06                         | FR 0158                        | /<br>/ 3:0                                                       | DO                        | 0158<br>06                   | 6921420 (85054)<br>BRWN CLAY SNDY 0014 GREY CLAY SAND<br>STNS 0067 GREY CLAY SILT 0113 GREY<br>SAND STNS 0119 GREY CLAY SILT 0147<br>GREY CLAY SAND STNS 0158 GREY SAND<br>FSND 0164 GREY CLAY SAND STNS 0168<br>GREY CLAY SILT 0175 |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 633217<br>4860916 <sup>w</sup> | 1974/05<br>5459                        | 06                         | FR 0127                        | 032 / 125<br>005 / 2:0                                           | DO                        | 0128<br>04                   | 6912318 ()<br>BRWN CLAY 0018 BLUE CLAY SAND STNS<br>0122 SAND 0127 SAND 0132                                                                                                                                                         |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 633135<br>4861123 <sup>w</sup> | 1976/04<br>5459                        | 06                         | FR 0125                        | 040 / 125<br>012 / :0                                            | DO                        | 0127<br>06                   | 6913631 ()<br>BRWN CLAY 0016 BLUE CLAY STNS 0114<br>BLUE CLAY FSND 0125 BLUE MSND 0134                                                                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 633175<br>4860843 <sup>w</sup> | 1982/06<br>2407                        | 06                         | FR 0051                        | 006 / 030<br>004 / 10:0                                          | DO                        |                              | 6916470 ()<br>BLUE HPAN STNS SAND 0051                                                                                                                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 634995<br>4861743 <sup>w</sup> | 1977/07<br>3109                        | 30 30                      | FR 0016                        | 012 /<br>/ :0                                                    | DO                        |                              | 6914160 ()<br>LOAM 0002 BRWN CLAY STNY 0016 SAND<br>GRVL 0036                                                                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 633195<br>4861223 <sup>w</sup> | 1973/09<br>5459                        | 06                         | FR 0074                        | 015 / 070<br>008 / 4:0                                           | DO                        |                              | 6911860 ()<br>CLAY SAND 0020 CLAY STNS 0028 GRVL<br>0035 BLUE CLAY 0070 CLAY 0077                                                                                                                                                    |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 634935<br>4861823 <sup>w</sup> | 1979/11<br>1350                        | 06                         | FR 0065                        | 005 / 035<br>010 / 2:0                                           | DO                        |                              | 6915314 ()<br>GREY CLAY 0018 GREY SILT CLAY STNS<br>0065 GREY GRVL HPAN 0080                                                                                                                                                         |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 633995<br>4861293 <sup>w</sup> | 1969/07<br>4610                        | 06                         | FR 0093                        | -001 / 072<br>003 / 5:0                                          | DO                        | 0094<br>04                   | 6909425 ()<br>PRDG 0036 BLUE CLAY MSND 0077 BLUE<br>CLAY 0093 BLUE MSND 0097 BLUE CLAY<br>GRVL MSND 0104                                                                                                                             |
| MARKHAM TOWN (MARKHA<br>CON 05(020)) | 17 633235<br>4860823 <sup>w</sup> | 1973/07<br>5459                        | 06                         | FR 0154                        | 020 / 135<br>010 / 2:30                                          | DO                        | 0155<br>08                   | 6911526 ()<br>BRWN CLAY 0022 BLUE CLAY 0154 FSND<br>0163                                                                                                                                                                             |

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|-------------------------------------|-----------------------------------|----------------------------------------|----------------------------|--------------------------------|------------------------------------------------------------------|---------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MARKHAM TOWN (MARKHA<br>CON 06(014) | 17 635965<br>4859378 <sup>w</sup> | 1960/06<br>4610                        | 01                         | FR 0050<br>FR 0043             | 006 / 012<br>020 / 6:0                                           | NU                        | 0127<br>10                   | 6903791 ()<br>LOAM 0002 BRWN CLAY 0012 BLUE CLAY<br>STNS 0042 MSND 0043 BLUE CLAY 0050<br>FSND 0100 MSND CLAY SILT 0110 FSND<br>0128 GRVL 0137 CLAY GRVL 0139 CLAY<br>0145 CLAY STNS 0205 SHLE 0215                                            |
| MARKHAM TOWN (MARKHA<br>CON 06(014) | 17 635695<br>4859273 <sup>w</sup> | 1960/07<br>4610                        | 06                         | FR 0025                        | /<br>/ :0                                                        | NU                        |                              | 6903792 ()<br>LOAM 0002 BLUE CLAY STNS 0025 FSND<br>CLAY 0087 CLAY STNS 0175 CLAY BLDR<br>0177 CLAY STNS 0198 SHLE 0200                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 06(014) | 17 637546<br>4860054 <sup>w</sup> | 1962/12<br>5420                        | 05                         | FR 0105                        | 016 / 020<br>007 / 12:0                                          | DO                        |                              | 6903794 ()<br>PRDG 0030 BRWN MSND 0065 CLAY STNS<br>MSND 0100 CLAY MSND 0108                                                                                                                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 06(014) | 17 635582<br>4859182 <sup>w</sup> | 1966/07<br>2610                        | 30                         | FR 0021                        | 002 / 019<br>/ :0                                                | DO                        |                              | 6903796 ()<br>BRWN CLAY 0011 GREY CLAY 0021 GRVL<br>0026                                                                                                                                                                                       |
| MARKHAM TOWN (MARKHA<br>CON 06(014) | 17 636930<br>4859802 <sup>w</sup> | 1962/03<br>1622                        | 04                         | FR 0180                        | 003 / 030<br>012 / 5:0                                           | ST<br>DO                  | 0191<br>04                   | 6903795 ()<br>BRWN CLAY 0018 GRVL BLDR 0050 GRVL<br>CLAY 0180 CSND 0195                                                                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 06(014) | 17 637555<br>4860003 <sup>w</sup> | 1979/11<br>5206                        | 06                         | FR 0105                        | 020 / 100<br>005 / 4:30                                          | DO                        | 0114<br>03                   | 6915260 ()<br>BRWN LOAM 0001 BRWN SAND CLAY 0048<br>GRVL CLAY HARD 0096 CLAY 0108 GREY<br>SAND 0117                                                                                                                                            |
| MARKHAM TOWN (MARKHA<br>CON 06(014) | 17 636160<br>4859483 <sup>w</sup> | 1960/06<br>4610                        | 05                         | FR 0032<br>FR 0003             | -004 / 010<br>060 / 4:0                                          | NU                        | 0052<br>12                   | 6903790 ()<br>LOAM 0002 BLUE CLAY 0005 GRVL 0006<br>BLUE CLAY 0032 MSND STNS 0050 MSND<br>0054 MSND STNS 0060 MSND CLAY 0061<br>FSND 0070 MSND CLAY 0074 GRVL HPAN<br>0086                                                                     |
| MARKHAM TOWN (MARKHA<br>CON 06(014) | 17 635995<br>4859423 <sup>w</sup> | 1960/07<br>4610                        | 04                         | FR 0047                        | 006 / 027<br>040 / 48:0                                          | NU                        | 0111<br>20                   | 6903793 ()<br>LOAM 0001 BRWN CLAY 0002 BLUE CLAY<br>0047 MSND 0117 GRVL BLDR 0131 CLAY<br>STNS 0175 GRVL CLAY 0177 CLAY MSND<br>STNS 0201 SHLE 0205                                                                                            |
| MARKHAM TOWN (MARKHA<br>CON 06(014) | 17 636240<br>4859523 <sup>w</sup> | 1960/06<br>4610                        | 02                         | FR 0024<br>FR 0193             | / 020<br>006 / 10:0                                              | IR                        | 0193<br>13                   | 6903789 ()<br>LOAM 0002 BLUE CLAY 0018 BLUE CLAY<br>STNS 0024 GRVL CLAY 0036 CLAY STNS<br>MSND 0040 CLAY BLDR 0043 BLUE CLAY<br>0100 GRVL CLAY 0137 BLDR 0139 GRVL<br>CLAY 0170 GRVL CLAY BLDR 0193 GRVL<br>CLAY 0206 CLAY STNS 0214 SHLE 0220 |
| MARKHAM TOWN (MARKHA<br>CON 06(015) | 17 636471<br>4860003 <sup>l</sup> | 2002/02<br>3903                        | 12 10                      | FR 0112                        | / 024<br>300 / 70:0                                              | CO                        | 0067<br>50                   | 6926271 (227712)<br>BRWN CLAY STNS HARD 0026 GREY CLAY<br>SILT LYRD 0070 BRWN SAND CLAY LYRD<br>0112                                                                                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 06(015) | 17 635482<br>4859797 <sup>w</sup> | 1995/05<br>3903                        | 04 06                      |                                | 004 /<br>/ :0                                                    | DO                        |                              | 6923248 (26721)<br>PRDG 0034                                                                                                                                                                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 06(016) | 17 638041<br>4856420 <sup>w</sup> | 2003/07<br>1663                        |                            |                                |                                                                  | NU                        |                              | 6927316 (253165)                                                                                                                                                                                                                               |

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| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 637355<br>4860943 <sup>w</sup> | 1980/10<br>5459                        | 06                         | FR 0121                        | 025 / 121<br>030 / 2:0                                           | DO                        | 0121<br>03                   | 6915749 ( )<br>BRWN CLAY STNS 0039 BRWN SAND SILT<br>0059 GREY SAND STNS 0078 BLUE CLAY<br>STNS 0092 BLUE CLAY SILT 0108 GREY<br>SAND STNS 0127    |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 637306<br>4861118 <sup>w</sup> | 1998/11<br>3903                        |                            |                                |                                                                  | NU                        |                              | 6924751 (165712)                                                                                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 637232<br>4860506 <sup>w</sup> | 1997/10<br>1663                        |                            |                                |                                                                  |                           |                              | 6924242 (186409)                                                                                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 634978<br>4860184 <sup>w</sup> | 5459                                   |                            |                                |                                                                  | NU                        |                              | 6927782 (Z05066) A004654                                                                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 635445<br>4860478 <sup>w</sup> | 1963/08<br>5420                        | 05                         | FR 0058                        | 016 / 025<br>008 / 4:0                                           | DO<br>ST                  | 0058<br>04                   | 6903798 ( )<br>LOAM 0002 CLAY MSND 0055 MSND 0062                                                                                                  |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 637347<br>4860927 <sup>w</sup> | 1953/02<br>2419                        | 02                         | FR 0038                        | 033 / 033<br>003 / :0                                            | DO                        | 0038<br>05                   | 6903800 ( )<br>GREY CLAY 0038 MSND 0043                                                                                                            |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 636472<br>4860317 <sup>w</sup> | 1964/04<br>5420                        | 34                         | FR 0014                        | 005 /<br>/ :0                                                    | DO                        |                              | 6903802 ( )<br>LOAM 0001 YLLW CLAY 0008 BLUE CLAY<br>0014 CLAY MSND 0016                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 636783<br>4860448 <sup>w</sup> | 1964/05<br>5420                        | 34                         | FR 0021                        | 021 /<br>002 / :0                                                | DO                        |                              | 6903803 ( )<br>LOAM 0001 CLAY SILT 0012 FSND 0035                                                                                                  |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 636443<br>4860402 <sup>w</sup> | 1967/03<br>5420                        | 34                         | FR 0025                        | 014 /<br>/ :0                                                    | DO                        |                              | 6903805 ( )<br>LOAM 0001 BRWN CLAY 0010 BLUE CLAY<br>0025 BLDR CLAY 0029                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 636445<br>4860373 <sup>w</sup> | 1971/05<br>2407                        | 05                         | FR 0082                        | 008 / 090<br>005 / 2:0                                           | DO                        | 0088<br>03                   | 6910688 ( )<br>LOAM 0001 FILL 0009 BRWN MSND 0021<br>BLUE CLAY 0082 BLUE MSND 0091                                                                 |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 637035<br>4860453 <sup>w</sup> | 1968/08<br>5420                        | 34                         | FR 0025                        | 010 /<br>/ :0                                                    | DO                        |                              | 6908810 ( )<br>LOAM 0001 BRWN CLAY 0012 BLUE CLAY<br>STNS 0023 BLUE CLAY MSND BLDR 0031                                                            |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 637404<br>4860612 <sup>w</sup> | 1997/08<br>6926                        | 01                         | FR 0010                        |                                                                  |                           | 0020<br>03                   | 6924311 (174629)<br>BRWN SILT CLAY SAND 0013 BRWN CLAY<br>FSND DNSE 0023                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 636485<br>4860303 <sup>w</sup> | 1969/06<br>2407                        | 05                         | FR 0064                        | / 088<br>030 / 12:0                                              | ST                        | 0092<br>04                   | 6909188 ( )<br>LOAM 0001 BRWN MSND 0024 BLUE CLAY<br>MSND 0064 BLUE MSND 0096                                                                      |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 637304<br>4861123 <sup>w</sup> | 1998/11<br>3903                        |                            |                                |                                                                  | NU                        |                              | 6924750 (165713)                                                                                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 637220<br>4860500 <sup>w</sup> | 1997/10<br>1663                        |                            |                                |                                                                  |                           |                              | 6924241 (186408)                                                                                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 635485<br>4860229 <sup>w</sup> | 2004/09<br>1413                        | 06                         | FR 0197                        | 072 / 164<br>007 / 1:0                                           | DO<br>ST                  |                              | 6928356 (Z19210) A006686<br>BRWN CLAY STNS HARD 0050 BRWN SAND<br>PCKD 0097 GREY SAND MSND 0125 GREY<br>CLAY STNS HARD 0164 GREY SHLE SOFT<br>0198 |

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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                         |
|--------------------------------------|-----------------------------------|----------------------------------------|----------------------------|--------------------------------|------------------------------------------------------------------|---------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 635773<br>4860064 <sup>w</sup> | 2004/09<br>1413                        | 06                         | FR 0197                        | 085 / 174<br>016 / 1:0                                           | DO<br>ST                  |                              | 6928357 (Z19211) A006687<br>BRWN CLAY STNS HARD 0040 GREY CLAY<br>STNS HARD 0075 BRWN SAND LOOS 0137<br>GREY CLAY SILT GRVL 0177 GREY SHLE<br>HARD 0198 |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 637267<br>4860540 <sup>w</sup> | 1960/12<br>1413                        | 05                         | FR 0046                        | 020 / 038<br>009 / 2:0                                           | ST<br>DO                  | 0038<br>08                   | 6903797 ()<br>CLAY STNS 0020 FSND 0046                                                                                                                  |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 637217<br>4860534 <sup>w</sup> | 1960/10<br>5420                        | 34                         | FR 0024                        | 024 /<br>002 / :0                                                | ST                        |                              | 6903799 ()<br>YLLW CLAY 0006 MSND 0032                                                                                                                  |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 636977<br>4860482 <sup>w</sup> | 1964/01<br>5420                        | 05                         | FR 0103                        | 014 / 022<br>030 / 2:0                                           | DO                        | 0114<br>04                   | 6903801 ()<br>CLAY 0008 MSND SILT 0058 GREY CSND<br>0063 HPAN 0103 GREY MSND 0118                                                                       |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 635859<br>4860281 <sup>w</sup> | 1964/12<br>5420                        | 05                         |                                |                                                                  |                           |                              | 6903804 ()<br>PRDG 0030 BLUE CLAY STNS 0075 BLUE<br>FSND 0164 BLUE FSND CLAY 0192                                                                       |
| MARKHAM TOWN (MARKHA<br>CON 06(016)) | 17 635808<br>4860277 <sup>w</sup> | 1990/04<br>4738                        | 06                         | FR 0075                        | 022 /<br>020 / 1:0                                               | DO                        | 0094<br>03                   | 6920991 (78254)<br>BRWN CLAY STNS 0027 GREY CLAY STNS<br>0075 GREY SAND VERY FSND 0090 GREY<br>SAND MSND 0097                                           |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 635268<br>4861523 <sup>w</sup> | 1997/11<br>1663                        |                            |                                |                                                                  |                           |                              | 6924245 (186425)                                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 636234<br>4861213 <sup>l</sup> | 2001/12<br>6418                        |                            |                                |                                                                  |                           |                              | 6926232 (213180)                                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 635267<br>4861523 <sup>w</sup> | 1997/11<br>1663                        |                            |                                |                                                                  |                           |                              | 6924236 (186427)                                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 635267<br>4861523 <sup>w</sup> | 1997/11<br>1663                        |                            |                                |                                                                  |                           |                              | 6924243 (186426)                                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 635846<br>4861104 <sup>w</sup> | 1962/05<br>2113                        | 06                         | FR 0060                        | 018 / 040<br>012 / 8:0                                           | DO                        | 0059<br>05                   | 6903808 ()<br>LOAM 0001 BRWN CLAY STNS 0030 GREY<br>CLAY STNS 0060 GREY CLAY GRVL 0064                                                                  |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 635690<br>4861041 <sup>w</sup> | 1964/04<br>2113                        | 06                         | FR 0041                        | / 020<br>020 / 3:0                                               | DO                        |                              | 6903810 ()<br>LOAM 0001 BRWN CLAY STNS 0012 GREY<br>CLAY 0041 BRWN GRVL 0042                                                                            |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 638185<br>4856899 <sup>w</sup> | 1999/12<br>1663                        |                            |                                |                                                                  | NU                        |                              | 6925248 (213428)                                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 635268<br>4861523 <sup>w</sup> | 1997/11<br>1663                        |                            |                                |                                                                  |                           |                              | 6924244 (186424)                                                                                                                                        |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 637150<br>4861680 <sup>w</sup> | 1962/03<br>5420                        | 34                         | FR 0048                        | 015 /<br>/ :0                                                    | DO                        |                              | 6903807 ()<br>LOAM 0001 YLLW CLAY 0014 BLUE CLAY<br>STNS 0048 CSND 0050                                                                                 |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 637031<br>4861480 <sup>w</sup> | 1962/08<br>5420                        | 34                         | FR 0028                        | 030 /<br>/ :0                                                    | DO                        |                              | 6903809 ()<br>LOAM 0001 YLLW CLAY 0017 CLAY MSND<br>0028 CSND 0042                                                                                      |

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| TOWNSHIP<br>CONCESSION (LOT)         | UTM <sup>1</sup>                  | DATE <sup>2</sup><br>CNTR <sup>3</sup> | CASING<br>DIA <sup>4</sup> | WATER <sup>5,6</sup><br>DETAIL | STAT LVL/PUMP LVL <sup>7</sup><br>RATE <sup>8</sup> /TIME HR:MIN | WATER<br>USE <sup>9</sup> | SCREEN<br>INFO <sup>10</sup> | WELL # (AUDIT#) WELL TAG #<br>DEPTHS TO WHICH FORMATIONS EXTEND <sup>5,11</sup>                                                                                            |
|--------------------------------------|-----------------------------------|----------------------------------------|----------------------------|--------------------------------|------------------------------------------------------------------|---------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 635458<br>4860962 <sup>w</sup> | 1964/06<br>2113                        | 06                         | FR 0045                        | / 024<br>005 / 2:0                                               | DO                        | 0045<br>04                   | 6903811 ()<br>LOAM 0001 BRWN CLAY 0009 BRWN GRVL<br>MSND 0024 GREY CLAY STNS 0034 BRWN<br>FSND 0040 BRWN FSND STNS 0045 BRWN<br>FSND 0049                                  |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 635438<br>4860992 <sup>w</sup> | 1965/07<br>5420                        | 34                         | FR 0020                        | /<br>010 / :0                                                    | DO                        |                              | 6903812 ()<br>LOAM 0001 BRWN CLAY 0008 BLUE CLAY<br>0020 FSND 0024                                                                                                         |
| MARKHAM TOWN (MARKHA<br>CON 06(018)) | 17 635315<br>4861023 <sup>w</sup> | 1981/06<br>3109                        | 30                         | FR 0011                        | 007 /<br>/ 12:0                                                  | DO                        |                              | 6915926 ()<br>LOAM 0001 BRWN CLAY SLTY 0011 BLUE<br>CLAY STNY 0027                                                                                                         |
| MARKHAM TOWN (MARKHA<br>CON 06(019)) | 17 635275<br>4861183 <sup>w</sup> | 1979/11<br>3109                        | 30                         | FR 0027                        | 012 /<br>/ 8:0                                                   | DO                        |                              | 6915257 ()<br>LOAM 0002 BRWN CLAY SLTY 0016 BLUE<br>CLAY SLTY 0027 CSND 0030                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 06(019)) | 17 636154<br>4861608 <sup>L</sup> | 2001/01<br>1663                        |                            |                                |                                                                  | NU                        |                              | 6925824 (227400)                                                                                                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 06(019)) | 17 637175<br>4861743 <sup>w</sup> | 1978/07<br>2651                        | 06                         | FR 0112                        | 043 /<br>020 / 2:0                                               | DO                        | 0116<br>04                   | 6914959 ()<br>BRWN CLAY SAND 0017 GREN CLAY SAND<br>GRVL 0111 GREN MSND 0124                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 06(020)) | 17 636317<br>4862285 <sup>w</sup> | 1962/10<br>5420                        | 34                         | FR 0030<br>FR 0050             | 026 /<br>/ :0                                                    | DO<br>ST                  |                              | 6903816 ()<br>LOAM 0001 YLLW CLAY 0012 BLUE CLAY<br>STNS 0050 MSND CLAY 0051                                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 06(020)) | 17 635555<br>4861663 <sup>w</sup> | 1979/12<br>3108                        | 06                         | UK 0108                        | 038 / 110<br>060 / 0:30                                          | DO                        | 0113<br>06                   | 6915377 ()<br>YLLW CLAY 0015 CLAY GRVL 0061 BLUE<br>CLAY SNDY 0081 BLUE CLAY GVLY 0108<br>BLUE SAND 0119                                                                   |
| MARKHAM TOWN (MARKHA<br>CON 06(020)) | 17 637003<br>4862529 <sup>w</sup> | 1974/08<br>1413                        | 05                         |                                |                                                                  | NU                        |                              | 6912293 ()<br>BRWN SILT HPAN 0003 GREY SILT CLAY<br>HPAN 0022 GREY SILT SAND STNS 0076<br>GREY SILT CLAY 0100 GREY FSND STNS<br>0187 GREY SAND SILT 0205 GREY SHLE<br>0210 |
| MARKHAM TOWN (MARKHA<br>CON 06(020)) | 17 635385<br>4861780 <sup>w</sup> | 1962/09<br>5420                        | 34                         | FR 0020                        | 018 /<br>/ :0                                                    | ST<br>DO                  |                              | 6903815 ()<br>LOAM 0001 YLLW CLAY STNS 0012 CLAY<br>MSND 0020 GRVL 0029                                                                                                    |
| MARKHAM TOWN (MARKHA<br>CON 06(020)) | 17 635593<br>4861687 <sup>w</sup> | 1998/06<br>1663                        |                            |                                |                                                                  | NU                        |                              | 6924562 (190437)                                                                                                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 06(020)) | 17 636494<br>4862297 <sup>w</sup> | 1998/11<br>1663                        |                            |                                |                                                                  | NU                        |                              | 6924791 (198163)<br>BRWN SAND CLAY 0000 YLLW SAND 0008<br>BRWN SAND CLAY 0009 YLLW SAND 0050                                                                               |
| MARKHAM TOWN (MARKHA<br>CON 06(020)) | 17 638274<br>4862986 <sup>w</sup> | 2002/05<br>1663                        |                            |                                |                                                                  | NU                        |                              | 6926475 (240051)                                                                                                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 06(020)) | 17 638278<br>4862992 <sup>w</sup> | 2002/05<br>1663                        |                            |                                |                                                                  | NU                        |                              | 6926474 (240050)                                                                                                                                                           |
| MARKHAM TOWN (MARKHA<br>CON 06(020)) | 17 636075<br>4862011 <sup>L</sup> | 2003/07<br>5459                        | 36                         |                                |                                                                  | NU                        |                              | 6927158 (264104)                                                                                                                                                           |





# BURNSIDE

[ THE DIFFERENCE IS OUR PEOPLE ]

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## Appendix B

### Borehole and Monitoring Well Logs

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-1**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: November 19, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                        | SOIL PROFILE                                                                                                    |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                    |
|-----------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|--------------------|
|                       |                                                      | DESCRIPTION                                                                                                     | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
|                       |                                                      |                                                                                                                 |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                    |
|                       |                                                      |                                                                                                                 |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup>   |
|                       |                                                      |                                                                                                                 |             |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |        | 10         | 20     | 30                         | 40                                            |                  |                    |
| 0                     |                                                      | GROUND SURFACE                                                                                                  |             | 178.59                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
|                       | CME 85 Truck Mount<br>203 mm O.D. Hollow Stem Augers | ASPHALT (100 mm)                                                                                                |             | 0.00                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
|                       |                                                      | FILL - (SM) SILTY SAND, some clay,<br>trace gravel; grey, trace organics, moist,<br>loose                       |             | 0.10                  | 1       | SS   | 9          |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  | Sand               |
|                       |                                                      |                                                                                                                 |             | 177.90                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
| 1                     |                                                      | (SP) SAND with clay, trace gravel, trace<br>silt; brown with red iron mottling;<br>non-cohesive, moist, compact |             | 0.69                  | 2       | SS   | 11         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  | Bentonite          |
|                       |                                                      |                                                                                                                 |             | 177.14                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
|                       |                                                      | (SW) SAND, some silt; brown; wet,<br>loose to compact                                                           |             | 1.45                  | 3       | SS   | 7          |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  | Sand Nov. 19, 2014 |
| 2                     |                                                      |                                                                                                                 |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
|                       |                                                      |                                                                                                                 |             |                       | 4       | SS   | 14         |                                               |    |    |    |                                    |        |            |        |                            |                                               | Screen           |                    |
| 3                     |                                                      |                                                                                                                 |             | 175.62                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
|                       |                                                      | (SW) SAND, some silt, some gravel;<br>brown; wet, compact                                                       |             | 2.97                  | 5       | SS   | 12         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
|                       |                                                      |                                                                                                                 |             | 174.93                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
| 4                     |                                                      | END OF BOREHOLE                                                                                                 |             | 3.66                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
| 5                     |                                                      |                                                                                                                 |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
| 6                     |                                                      |                                                                                                                 |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
| 7                     |                                                      |                                                                                                                 |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
| 8                     |                                                      |                                                                                                                 |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
| 9                     |                                                      |                                                                                                                 |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |
| 10                    |                                                      |                                                                                                                 |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                    |

1. Water level in  
piezometer measured  
at a depth of 1.30 m  
below ground surface  
(Elev. 177.29 m) on  
November 19, 2014.

1. Water level in  
piezometer measured  
at a depth of 1.30 m  
below ground surface  
(Elev. 177.29 m) on  
November 19, 2014.

DEPTH SCALE

1 : 50



LOGGED: DG

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-2**

SHEET 1 OF 1

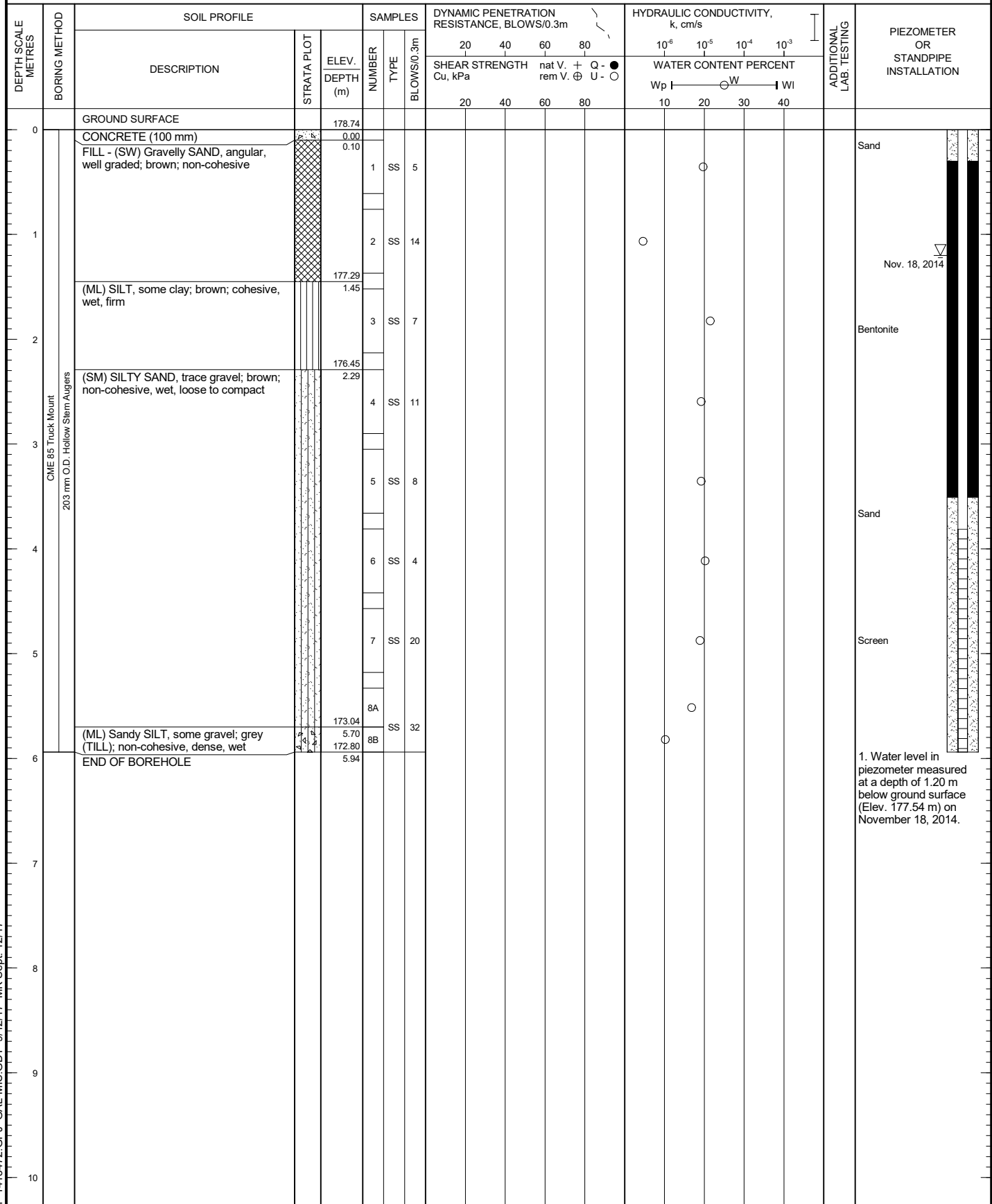
LOCATION: SEE FIGURE 2

BORING DATE: November 18, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC



DEPTH SCALE

1 : 50



LOGGED: DG

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

[illegible]

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-4**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: November 19, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                        | SOIL PROFILE                                                                                              |                                                                                      |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                |    |               | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |    |       | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |  |                  |  |                  |  |                  |  |  |
|-----------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------|---------|------|-----------------------------------------------|----------------|----|---------------|------------------------------------|-----------------------|----|-------|----------------------------|-----------------------------------------------|------------------|--|------------------|--|------------------|--|------------------|--|--|
|                       |                                                      | DESCRIPTION                                                                                               | STRATA PLOT                                                                          | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH |    |               |                                    | WATER CONTENT PERCENT |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               | 20             |    | 40            |                                    | 60                    |    | 80    |                            |                                               | 10 <sup>-6</sup> |  | 10 <sup>-5</sup> |  | 10 <sup>-4</sup> |  | 10 <sup>-3</sup> |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               | Cu, kPa        |    | nat V. rem V. |                                    | + ⊕ - ⊙               |    | Q - U |                            |                                               | ● ○              |  | Wp               |  | W                |  | Wi               |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               | 20             | 40 | 60            | 80                                 |                       | 10 | 20    | 30                         | 40                                            |                  |  |                  |  |                  |  |                  |  |  |
| 0                     |                                                      | GROUND SURFACE                                                                                            |                                                                                      | 181.30                |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       | CME 85 Truck Mount<br>203 mm O.D. Hollow Stem Augers | FILL - SAND and GRAVEL; grey;<br>non-cohesive, dry<br>(ML) CLAYEY SILT; brown; cohesive,<br>w<PL, stiff   |                                                                                      | 0.00                  | 1A      | SS   |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           | 0.10                                                                                 | 1B                    | SS      | 11   |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           | 180.69                                                                               |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           | 0.61                                                                                 |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
| 1                     |                                                      |                                                                                                           |                                                                                      |                       |         | 2    | SS                                            | 6              |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           | (ML) CLAYEY SILT, some sand, some<br>gravel; brown (TILL-LIKE); cohesive, w~PL, firm |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
| 2                     |                                                      | (ML) CLAYEY SILT, some sand, some<br>gravel; brown (TILL); cohesive, w~PL,<br>stiff to very stiff         |                                                                                      | 179.90                |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           | 1.40                                                                                 |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         | 3    | SS                                            | 11             |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         | 4    | SS                                            | 24             |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
| 3                     |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         | 5    | SS                                            | 25             |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      | (ML) SILT, some sand; brown;<br>non-cohesive, wet, dense                                                  |                                                                                      | 177.57                |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      | 3.73                  |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
| 4                     |                                                      |                                                                                                           |                                                                                      |                       |         | 6A   | SS                                            |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      | (SW) SAND, well graded, some silt;<br>brown with orange mottling, stratified;<br>non-cohesive, wet, dense |                                                                                      | 177.03                |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      | 4.27                  |         | 6B   | SS                                            | 45             |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      | 4.42                  |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      | (ML) SILT, some sand; brown, zones of<br>silty fine sand; non-cohesive, wet, dense                        |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
| 5                     |                                                      |                                                                                                           |                                                                                      |                       |         | 7    | SS                                            | 30             |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      |                       |         | 8    | SS                                            | 22             |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
| 6                     |                                                      | END OF BOREHOLE                                                                                           |                                                                                      | 175.36                |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
|                       |                                                      |                                                                                                           |                                                                                      | 5.94                  |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
| 7                     |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
| 8                     |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
| 9                     |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |
| 10                    |                                                      |                                                                                                           |                                                                                      |                       |         |      |                                               |                |    |               |                                    |                       |    |       |                            |                                               |                  |  |                  |  |                  |  |                  |  |  |

DEPTH SCALE

1 : 50



LOGGED: DG

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-5**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: November 19, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                  | SOIL PROFILE                                                                               |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                  |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|------------------------------------------------|--------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                | DESCRIPTION                                                                                | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                |                                                                                            |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q - ●<br>rem V. ⊕ U - ○ |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                |                                                                                            |             |                       |         |      |            | 20                                            | 40 | 60                               | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                |                                                                                            |             |                       |         |      |            | 20                                            | 40 | 60                               | 80 | 10                                 | 20               | 30               | 40               |                            |                                               |
| 0                     |                                                | GROUND SURFACE                                                                             |             | 183.50                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 85 Truck Mount<br>102 mm Solid Stem Augers | (SM) SILTY SAND, trace clay, trace organics; dark brown; non-cohesive, dry, loose          |             | 0.00                  | 1       | SS   | 6          |                                               |    |                                  |    |                                    | ○                |                  |                  |                            |                                               |
|                       |                                                |                                                                                            |             | 182.81                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                | (ML) Sandy SILT, trace clay; brown; non-cohesive, wet, compact                             |             | 0.69                  | 2       | SS   | 11         |                                               |    |                                  |    |                                    | ○                |                  |                  |                            |                                               |
|                       |                                                |                                                                                            |             | 181.98                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                | (CI) SILTY CLAY; brown to grey; cohesive, w~PL, stiff to firm                              |             | 1.52                  | 3A      |      |            |                                               |    |                                  |    |                                    | ○                |                  |                  |                            |                                               |
| 2                     |                                                |                                                                                            |             |                       | 3B      | SS   | 11         |                                               |    |                                  |    |                                    | ○                |                  |                  |                            |                                               |
|                       |                                                |                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                |                                                                                            |             |                       | 4       | SS   | 6          |                                               |    |                                  |    |                                    |                  | ○                |                  |                            |                                               |
| 3                     |                                                |                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                |                                                                                            |             |                       |         | 5    | SS         | 8                                             |    |                                  |    |                                    |                  | ○                |                  |                            |                                               |
|                       |                                                |                                                                                            |             | 179.77                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                | (ML) CLAYEY SILT, some gravel trace sand; grey (TILL); cohesive, w<PL, stiff to very stiff |             | 3.73                  | 6       | SS   | 11         |                                               |    |                                  |    |                                    | ○                |                  |                  |                            |                                               |
|                       |                                                |                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                |                                                                                            |             |                       | 7       | SS   | 26         |                                               |    |                                  |    |                                    | ○                |                  |                  |                            |                                               |
|                       |                                                | (CI) SILTY CLAY, trace to some gravel, trace sand; grey (TILL); w<PL, very stiff           |             | 178.17                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                |                                                                                            |             | 5.33                  | 8       | SS   | 26         |                                               |    |                                  |    |                                    | ○                |                  |                  |                            |                                               |
| 6                     |                                                | END OF BOREHOLE                                                                            |             | 177.56                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                |                                                                                            |             | 5.94                  |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                |                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                |                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                |                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                |                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: DG

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17



PROJECT: 1413472

**RECORD OF BOREHOLE: 14-6**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: November 19, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                  | SOIL PROFILE                                                                                      |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |                      |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s                                  |  |                       |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |  |
|-----------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|--|----------------------|--|---------------------------------------------------------------------|--|-----------------------|--|----------------------------|-----------------------------------------------|--|--|
|                       |                                                | DESCRIPTION                                                                                       | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | 20      40      60      80                    |  |                      |  | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |  | nat V. +<br>rem V. ⊕ |  | Q - ●<br>U - ○                                                      |  | WATER CONTENT PERCENT |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       |         |      |            | 20      40      60      80                    |  |                      |  |                                                                     |  | Wp        W        WI |  |                            |                                               |  |  |
|                       |                                                | GROUND SURFACE                                                                                    |             | 192.10                |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 0                     | CME 85 Truck Mount<br>102 mm Solid Stem Augers | (SM) SILTY SAND, trace to some gravel; mottled brown and orange; non-cohesive, loose              |             | 192.10<br>0.00        | 1       | SS   | 4          |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 1                     |                                                | (CL) SILTY CLAY; light brown to grey; cohesive, w>PL, soft to stiff                               |             | 191.34<br>0.76        | 2       | SS   | 4          |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 2                     |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 3                     |                                                | (ML) CLAYEY SILT, some gravel; grey, with layers of silty clay (TILL-LIKE); cohesive, w<PL, stiff |             | 189.89<br>2.21        | 3       | SS   | 8          |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 4                     |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                | (ML) SILT, trace sand, trace gravel; grey; non-cohesive, wet, compact                             |             | 189.05<br>3.05        | 4       | SS   | 8          |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 3                     |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       | 5A      |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       | SS      | 14   |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       | 5B      |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 4                     |                                                | (SP) SAND, angular to sub-angular, poorly graded, trace gravel; grey; non-cohesive, dense, moist  |             | 188.29<br>3.81        | 6       | SS   | 25         |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 5                     |                                                | (SW) Gravelly SAND, trace silt; grey; non-cohesive, compact                                       |             | 187.60<br>4.50        | 7       | SS   | 17         |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 6                     |                                                | (ML) CLAYEY SILT; grey, stratified; cohesive, w<PL, hard                                          |             | 186.77<br>5.33        | 8       | SS   | 36         |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
|                       |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 6                     |                                                | END OF BOREHOLE                                                                                   |             | 186.16<br>5.94        |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 7                     |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 8                     |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 9                     |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |
| 10                    |                                                |                                                                                                   |             |                       |         |      |            |                                               |  |                      |  |                                                                     |  |                       |  |                            |                                               |  |  |

DEPTH SCALE

1 : 50



LOGGED: DG

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-7**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: November 20, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                  | SOIL PROFILE                                                                            |             |                                     | SAMPLES |                |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|------------------------------------------------|-----------------------------------------------------------------------------------------|-------------|-------------------------------------|---------|----------------|------------|-----------------------------------------------|----|--------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                | DESCRIPTION                                                                             | STRATA PLOT | ELEV.<br>DEPTH<br>(m)               | NUMBER  | TYPE           | BLOWS/0.3m | RESISTANCE, BLOWS/0.3m                        |    |                                |    | k, cm/s                            |                  |                  |                  |                            |                                               |
|                       |                                                |                                                                                         |             |                                     |         |                |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - ● |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                |                                                                                         |             |                                     |         |                |            | 20                                            | 40 | 60                             | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                |                                                                                         |             |                                     |         |                |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 0                     |                                                | GROUND SURFACE                                                                          |             | 189.60                              |         |                |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       | Boomer Track Mount<br>102 mm Solid Stem Augers | FILL - (ML) CLAYEY SILT, some<br>organics, trace gravel; brown; cohesive,<br>w<PL, firm |             | 188.84<br>0.00                      | 1       | SS             | 8          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                | FILL - (CL) SILTY CLAY; grey-brown;<br>cohesive, w~PL, stiff                            |             | 188.08<br>0.76                      | 2       | SS             | 9          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                | FILL - (ML) CLAYEY SILT, some sand,<br>trace gravel; brown; cohesive, w<PL,<br>stiff    |             | 188.08<br>1.52                      | 3       | SS             | 12         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                | FILL - (SM) SILTY SAND, trace gravel;<br>mottled brown; non-cohesive, moist,<br>loose   |             | 187.39<br>2.21                      | 4       | SS             | 9          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                | FILL - (ML) CLAYEY SILT, trace gravel;<br>brown; cohesive, w<PL, firm                   |             | 186.55<br>3.05                      | 5       | SS             | 7          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                | FILL - (CL) SILTY CLAY; grey-brown;<br>cohesive, w~PL, stiff                            |             | 185.79<br>3.81                      | 6       | SS             | 11         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                |                                                                                         |             | END OF BOREHOLE ON<br>CONCRETE PIPE |         | 185.03<br>4.57 |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                |                                                                                         |             |                                     |         |                |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                |                                                                                         |             |                                     |         |                |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                |                                                                                         |             |                                     |         |                |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                |                                                                                         |             |                                     |         |                |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                |                                                                                         |             |                                     |         |                |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                |                                                                                         |             |                                     |         |                |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: DG

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-8**

SHEET 1 OF 1

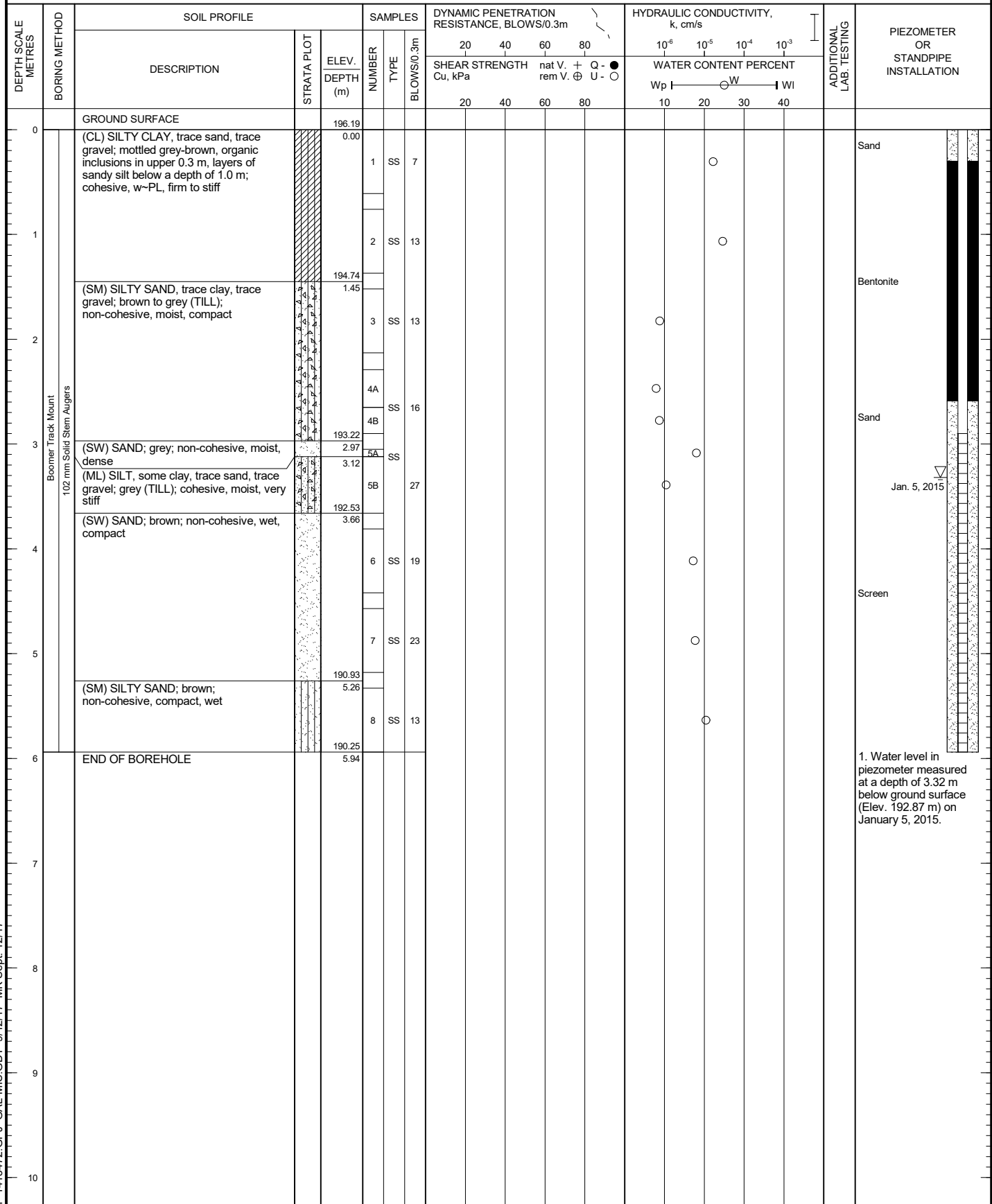
LOCATION: SEE FIGURE 2

BORING DATE: November 20, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC



DEPTH SCALE

1 : 50



LOGGED: DG

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

SHEET 1 OF 1

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

MH

1. Water level in open borehole measured at a depth of 3.7 m below ground surface (Elev. 177.70 m) on December 10, 2014.

CHECKED: SDK

CGTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-10**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 10, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                         | SOIL PROFILE                                                                                                                                                                               |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |                                       | DESCRIPTION                                                                                                                                                                                | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> |
|                       |                                       |                                                                                                                                                                                            |             |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |        | 10         | 20     | 30                         | 40                                            |                  |                  |
| 0                     |                                       | GROUND SURFACE                                                                                                                                                                             |             | 188.60                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       | Mini Mole<br>102 mm Solid Stem Augers | TOPSOIL (130 mm)                                                                                                                                                                           |             | 0.00                  | 1A      |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       | (CI) SILTY CLAY; brown, stratified;<br>cohesive, moist, stiff                                                                                                                              |             | 0.13                  | 1B      | SS   | 11         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 1                     |                                       |                                                                                                                                                                                            |             |                       | 2       | SS   | 11         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       | (SM) SILTY SAND, some gravel, trace<br>clay; brown, containing fissures with<br>oxidation, containing cobbles and<br>boulders (TILL); non-cohesive, moist to<br>dry, compact to very dense |             | 187.15                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             | 1.45                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             |                       | 3       | SS   | 12         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 2                     |                                       |                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             |                       |         | 4    | SS         | 73                                            |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             |                       | 5       | SS   | 76         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 4                     |                                       |                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       | (SM) SILTY SAND, trace clay, trace<br>gravel; brown; non-cohesive, moist,<br>compact                                                                                                       |             | 184.49                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             | 4.11                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 5                     |                                       |                                                                                                                                                                                            |             |                       | 6       | SS   | 29         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       | END OF BOREHOLE                                                                                                                                                                            |             | 183.42                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                       |                                                                                                                                                                                            |             | 5.18                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 6                     |                                       |                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 7                     |                                       |                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 8                     |                                       |                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 9                     |                                       |                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 10                    |                                       |                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |

Dec. 10, 2014

1. Water level in open borehole measured at a depth of 4.6 m below ground surface (Elev. 184.61 m) on December 10, 2014.

Dec. 10, 2014

1. Water level in open  
borehole measured at a  
depth of 4.6 m below  
ground surface (Elev.  
184.61 m) on  
December 10, 2014.

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-11**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 10, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                         | SOIL PROFILE                                                                                                         |                                                                                    |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|
|                       |                                       | DESCRIPTION                                                                                                          | STRATA PLOT                                                                        | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |
|                       |                                       |                                                                                                                      |                                                                                    |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               |
|                       |                                       |                                                                                                                      |                                                                                    |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |        |            |        |                            |                                               |
| 0                     |                                       | GROUND SURFACE                                                                                                       |                                                                                    | 182.20                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       | Mini Mole<br>102 mm Solid Stem Augers | TOPSOIL                                                                                                              |   | 0.00<br>182.00        | 1A      |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                       | (SM) SILTY SAND, trace gravel; brown, organic staining; non-cohesive, dry, compact                                   |   | 0.20                  | 1B      | SS   | 13         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 1                     |                                       | (CI) SILTY CLAY, trace sand, trace to some gravel; brown to grey, some layering; cohesive, w<PL, stiff to very stiff |   | 181.44<br>0.76        | 2       | SS   | 17         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 2                     |                                       | 0.08 m sand seam at a depth of 1.83 m                                                                                |   |                       | 3       | SS   | 21         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 3                     |                                       |                                                                                                                      |   |                       | 4       | SS   | 22         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 4                     |                                       |                                                                                                                      |   |                       | 5       | SS   | 22         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 5                     |                                       | (SM) gravelly SILTY SAND, some clay; grey; non-cohesive, wet, compact                                                |  | 178.09<br>4.11        | 6       | SS   | 16         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 6                     |                                       | END OF BOREHOLE                                                                                                      |                                                                                    | 177.02<br>5.18        |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 7                     |                                       |                                                                                                                      |                                                                                    |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 8                     |                                       |                                                                                                                      |                                                                                    |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 9                     |                                       |                                                                                                                      |                                                                                    |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 10                    |                                       |                                                                                                                      |                                                                                    |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17



PROJECT: 1413472

**RECORD OF BOREHOLE: 14-12**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 16, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                         | SOIL PROFILE                                                                       |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |     |     | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |     |                  |                               |                  |
|-----------------------|---------------------------------------|------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|-----------------------|-----|-----|----------------------------|-----------------------------------------------|-----|------------------|-------------------------------|------------------|
|                       |                                       | DESCRIPTION                                                                        | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT |     |     |                            |                                               |     |                  |                               |                  |
|                       |                                       |                                                                                    |             |                       |         |      |                                               | 20                        | 40 | 60 | 80                                 | nat V. rem V.         | + ⊕ | - ⊖ |                            |                                               | ● ○ | 10 <sup>-6</sup> | 10 <sup>-5</sup>              | 10 <sup>-4</sup> |
|                       |                                       |                                                                                    |             |                       |         |      |                                               | 20                        | 40 | 60 | 80                                 |                       |     | 10  | 20                         | 30                                            | 40  |                  |                               |                  |
| 0                     | Mini Mole<br>102 mm Solid Stem Augers | GROUND SURFACE                                                                     |             | 179.48                |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
|                       |                                       | TOPSOIL                                                                            |             | 0.00                  | 1A      |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  | OP OC<br>Nitrate<br>Phosphate | Cement<br>Sand   |
|                       |                                       | (CI) SILTY CLAY; brown to grey,<br>stratified; cohesive, w>PL, firm to soft        |             | 0.10                  | 1B      | SS   | 7                                             |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
|                       |                                       |                                                                                    |             |                       |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
| 1                     |                                       |                                                                                    |             |                       |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               | Bentonite        |
|                       |                                       |                                                                                    |             |                       |         | 2    | SS                                            | 8                         |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               | M&I              |
|                       |                                       |                                                                                    |             |                       |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
|                       |                                       |                                                                                    |             |                       |         | 3    | SS                                            | 4                         |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               | Sand             |
| 2                     |                                       |                                                                                    |             |                       |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
|                       |                                       |                                                                                    |             |                       |         | 4    | SS                                            | 3                         |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
| 3                     |                                       | (CI) SILTY CLAY, trace sand, trace<br>gravel; (TILL-LIKE); cohesive, w>PL,<br>soft |             | 176.51<br>2.97        |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
|                       |                                       |                                                                                    |             |                       | 5       | SS   | 4                                             |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
| 4                     |                                       | (SW) SAND, some silt; grey;<br>non-cohesive, wet, loose                            |             | 175.37<br>4.11        |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
|                       |                                       |                                                                                    |             |                       | 6       | SS   | N/R                                           |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
| 5                     |                                       | END OF BOREHOLE                                                                    |             | 174.30<br>5.18        |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
| 6                     |                                       | *N/R - Not Recorded                                                                |             |                       |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
| 7                     |                                       |                                                                                    |             |                       |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
| 8                     |                                       |                                                                                    |             |                       |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
| 9                     |                                       |                                                                                    |             |                       |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |
| 10                    |                                       |                                                                                    |             |                       |         |      |                                               |                           |    |    |                                    |                       |     |     |                            |                                               |     |                  |                               |                  |

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

SHEET 1 OF 1

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

[illegible]

DEPTH SCALE

1 : 50

LOGGED: EWB

CHECKED: SDK

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-14**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 9, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                         | SOIL PROFILE                                                                                                |                                                                                     |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                            |    |                              | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                                                     |    |    | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------|---------|------|-----------------------------------------------|----------------------------|----|------------------------------|------------------------------------|---------------------------------------------------------------------|----|----|----------------------------|-----------------------------------------------|--|
|                       |                                       | DESCRIPTION                                                                                                 | STRATA PLOT                                                                         | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | 20      40      60      80 |    |                              |                                    | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa  |    | nat V. + Q -<br>rem V. ⊕ U - |                                    | WATER CONTENT PERCENT                                               |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    | Wp   — W —   Wi                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               | 20                         | 40 | 60                           | 80                                 | 10                                                                  | 20 | 30 | 40                         |                                               |  |
| 0                     |                                       | GROUND SURFACE                                                                                              |                                                                                     | 176.30                |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       | Mini Mole<br>102 mm Solid Stem Augers | FILL - TOPSOIL (150 mm)                                                                                     |    | 0.00                  | 1A      |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       | FILL - (SM) SILTY SAND, some gravel,<br>trace clay; mottled brown and grey;<br>non-cohesive, moist, compact |    | 0.15                  | 1B      | SS   | 22                                            |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       | 175.44  | 2A   |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
| 1                     |                                       | TOPSOIL                                                                                                     |    | 0.86                  | 2B      |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       | (SW) SAND, some gravel; brown;<br>non-cohesive, wet, compact                                                |    | 1.02                  | 2C      | SS   | 12                                            |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       | 174.42  | 3A   | SS                                            | 28                         |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
| 2                     |                                       | (SM) SILTY SAND, some gravel, trace<br>to some clay; brown to grey (TILL);<br>moist, compact to dense       |    | 1.88                  | 3B      |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         | 4    | SS                                            | 20                         |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         | 5    | SS                                            | 40                         |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
| 4                     |                                       |                                                                                                             |                                                                                     | 172.19                |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       | (ML) SILT, some sand, trace clay; grey;<br>non-cohesive, w>PL, very stiff                                   |  | 4.11                  |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
| 5                     |                                       |                                                                                                             |                                                                                     |                       | 6       | SS   | 21                                            |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     | 171.12                |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       | END OF BOREHOLE                                                                                             |                                                                                     | 5.18                  |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
| 6                     |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
| 7                     |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
| 8                     |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
| 9                     |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |
| 10                    |                                       |                                                                                                             |                                                                                     |                       |         |      |                                               |                            |    |                              |                                    |                                                                     |    |    |                            |                                               |  |

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-15**

SHEET 1 OF 1

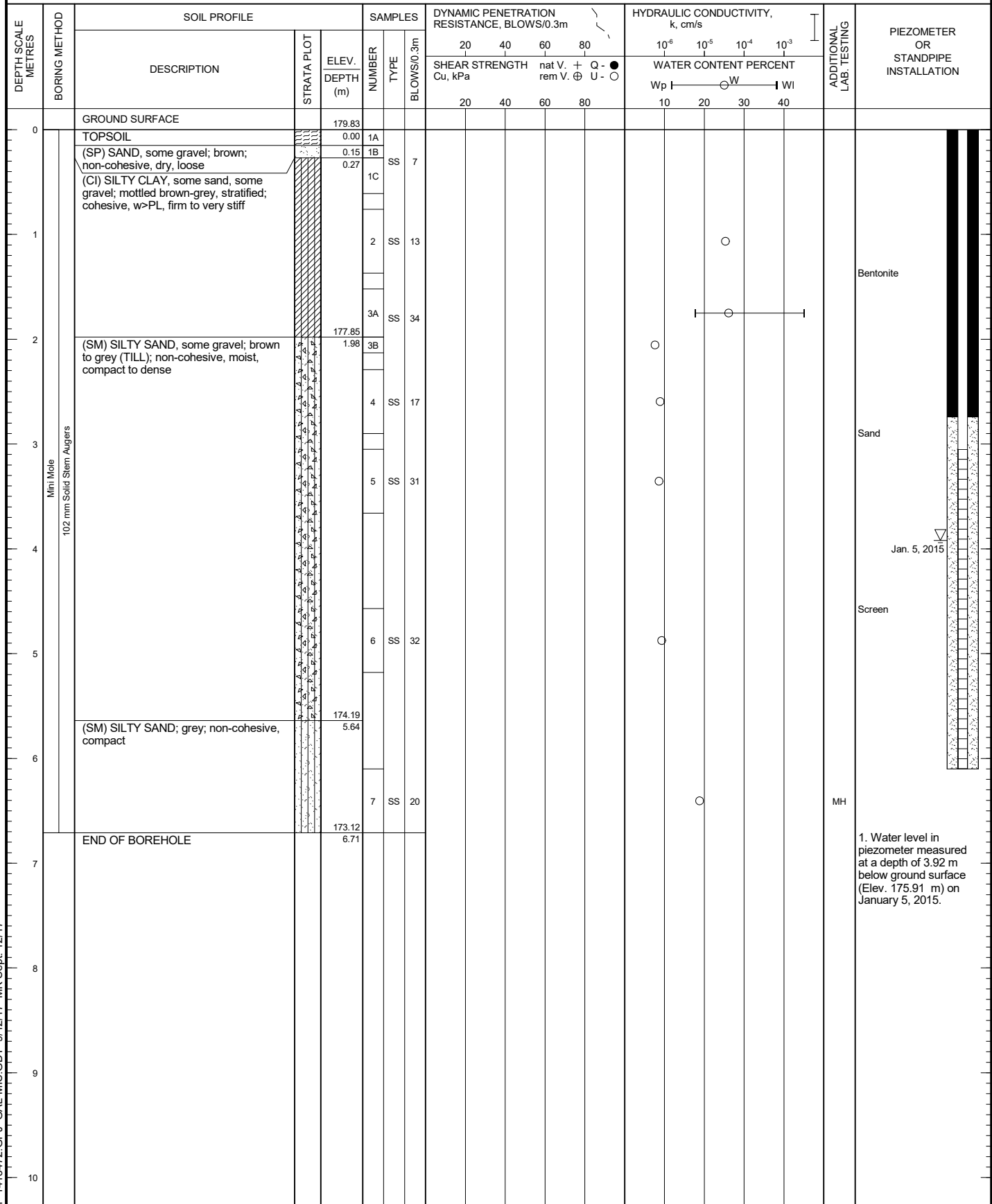
LOCATION: SEE FIGURE 2

BORING DATE: December 9, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC



DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-16**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 9, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                         | SOIL PROFILE                                                                                            |                                                                                    |                       | SAMPLES |      |             | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |    |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |  |    |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |  |                  |  |                  |  |                  |  |
|-----------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------|---------|------|-------------|-----------------------------------------------|--|----|--|------------------------------------|--|----|--|----------------------------|-----------------------------------------------|------------------|--|------------------|--|------------------|--|------------------|--|
|                       |                                       | DESCRIPTION                                                                                             | STRATA PLOT                                                                        | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m  | SHEAR STRENGTH<br>Cu, kPa                     |  |    |  | WATER CONTENT PERCENT              |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       |                                                                                                         |                                                                                    |                       |         |      |             | 20                                            |  | 40 |  | 60                                 |  | 80 |  |                            |                                               | 10 <sup>-6</sup> |  | 10 <sup>-5</sup> |  | 10 <sup>-4</sup> |  | 10 <sup>-3</sup> |  |
|                       |                                       |                                                                                                         |                                                                                    |                       |         |      |             | 20                                            |  | 40 |  | 60                                 |  | 80 |  |                            |                                               | 10 <sup>-6</sup> |  | 10 <sup>-5</sup> |  | 10 <sup>-4</sup> |  | 10 <sup>-3</sup> |  |
| 0                     | Mini Mole<br>102 mm Solid Stem Augers | GROUND SURFACE                                                                                          |                                                                                    | 181.30                |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       | TOPSOIL                                                                                                 |   | 0.00                  | 1A      |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       | (SP) SAND, trace gravel; brown;<br>non-cohesive, dry, compact                                           |   | 0.15                  | 1B      | SS   | 11          |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       |                                                                                                         |                                                                                    | 180.61                |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       |                                                                                                         |                                                                                    | 0.69                  |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 1                     |                                       | (CI) SILTY CLAY; brown, varved,<br>containing sand seams at a depth of<br>1.07 m; cohesive, w>PL, stiff |   |                       | 2       | SS   | 12          |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       |                                                                                                         |                                                                                    | 179.85                |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       |                                                                                                         |                                                                                    | 1.45                  |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 2                     |                                       | (CL) SILTY CLAY, trace sand, trace<br>gravel; brown, stratified; cohesive,<br>w~PL, very stiff          |   |                       | 3       | SS   | 24          |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       |                                                                                                         |                                                                                    |                       |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       |                                                                                                         |                                                                                    |                       | 4       | SS   | 23          |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 3                     |                                       |                                                                                                         |                                                                                    | 178.33                |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       | (SM) SILTY SAND, some gravel; grey<br>(TILL); non-cohesive, moist, compact                              |   | 2.97                  |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       |                                                                                                         |                                                                                    |                       | 5       | SS   | 17          |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 4                     |                                       |                                                                                                         |                                                                                    | 177.19                |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       | (ML) CLAYEY SILT, some sand, some<br>gravel; grey (TILL); cohesive, w<PL,<br>hard                       |  | 4.11                  |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       |                                                                                                         |                                                                                    |                       | 6       | SS   | 50/<br>0.10 |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                       |                                                                                                         |                                                                                    | 176.63                |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 5                     |                                       | END OF BOREHOLE                                                                                         |                                                                                    | 4.67                  |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 6                     |                                       |                                                                                                         |                                                                                    |                       |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 7                     |                                       |                                                                                                         |                                                                                    |                       |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 8                     |                                       |                                                                                                         |                                                                                    |                       |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 9                     |                                       |                                                                                                         |                                                                                    |                       |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 10                    |                                       |                                                                                                         |                                                                                    |                       |         |      |             |                                               |  |    |  |                                    |  |    |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-17**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 15, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                     |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                              |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                                                                                                                                     | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------|------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|------------------------------|----|------------------------------------|------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------|
|                       |               | DESCRIPTION                                                                                                      | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | RESISTANCE, BLOWS/0.3m                        |    |                              |    | CONDUCTIVITY, k, cm/s              |                  |                  |                                                                                                                                     |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - |    | WATER CONTENT PERCENT              |                  |                  |                                                                                                                                     |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            | 20                                            | 40 | 60                           | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup>                                                                                                                    |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 0                     |               | GROUND SURFACE                                                                                                   |             | 194.43                |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
|                       |               | FILL - (ML) CLAYEY SILT, trace sand,<br>trace gravel, some organics; dark brown;<br>cohesive, firm to very stiff |             | 0.00                  | 1       | SS   | 6          |                                               |    |                              |    |                                    |                  |                  | Sand                                                                                                                                |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 1                     |               |                                                                                                                  |             |                       | 2       | SS   | 12         |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 2                     |               |                                                                                                                  |             |                       | 3       | SS   | 22         |                                               |    |                              |    |                                    |                  |                  | Bentonite                                                                                                                           |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
|                       |               |                                                                                                                  |             |                       | 4       | SS   | 22         |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 3                     |               | (CI) SILTY CLAY; mottled brown-grey;<br>cohesive, w>PL, very stiff                                               |             | 191.46<br>2.97        | 5       | SS   | 24         |                                               |    |                              |    |                                    |                  |                  | Sand                                                                                                                                |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 4                     |               | (ML) Sandy SILT, some clay, some<br>gravel; mottled grey-brown (TILL);<br>non-cohesive, moist, very dense        |             | 190.32<br>4.11        | 6       | SS   | 50         |                                               |    |                              |    |                                    |                  |                  | Screen                                                                                                                              |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 5                     |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 6                     |               | (ML) CLAYEY SILT, some sand, some<br>gravel; grey (TILL); cohesive, w<PL,<br>very stiff                          |             | 188.79<br>5.64        | 7       | SS   | 26         |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 7                     |               | END OF BOREHOLE                                                                                                  |             | 187.72<br>6.71        |         |      |            |                                               |    |                              |    |                                    |                  |                  | 1. Water level in<br>piezometer measured<br>at a depth of 2.50 m<br>below ground surface<br>(Elev. 191.93 m) on<br>January 5, 2015. |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 8                     |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 9                     |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
|                       |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |
| 10                    |               |                                                                                                                  |             |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                                                                                                                                     |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: EWB

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17





PROJECT: 1413472

**RECORD OF BOREHOLE: 14-19**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 15, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                      |             |                       | SAMPLES |      |             | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                              |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s                                  |    |    |    | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------|-------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-------------|-----------------------------------------------|----|------------------------------|----|---------------------------------------------------------------------|----|----|----|----------------------------|-----------------------------------------------|
|                       |               | DESCRIPTION                                                                                                       | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m  | 20      40      60      80                    |    |                              |    | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |    |    |    |                            |                                               |
|                       |               |                                                                                                                   |             |                       |         |      |             | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - |    | WATER CONTENT PERCENT                                               |    |    |    |                            |                                               |
|                       |               |                                                                                                                   |             |                       |         |      |             |                                               |    |                              |    | Wp ——— W ——— WI                                                     |    |    |    |                            |                                               |
|                       |               |                                                                                                                   |             |                       |         |      |             | 20                                            | 40 | 60                           | 80 | 10                                                                  | 20 | 30 | 40 |                            |                                               |
| 0                     |               | GROUND SURFACE                                                                                                    |             | 188.80                |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
|                       |               | TOPSOIL                                                                                                           |             | 0.00                  | 1A      |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            | OP OC<br>Nitrate<br>Phosphate                 |
|                       |               | FILL - (ML) CLAYEY SILT, some sand,<br>trace gravel, trace organics; brown to<br>dark brown; cohesive, w>PL, firm |             | 0.10                  | 1B      | SS   | 5           |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
|                       |               |                                                                                                                   |             | 188.11                |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
|                       |               | (CI) SILTY CLAY; brown, stratified;<br>cohesive, w>PL, stiff                                                      |             | 0.69                  |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
| 1                     |               |                                                                                                                   |             |                       | 2       | SS   | 9           |                                               |    |                              |    |                                                                     |    |    |    |                            | M&I                                           |
|                       |               |                                                                                                                   |             | 187.35                |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
|                       |               | (ML) CLAYEY SILT, some sand, some<br>gravel; brown (TILL); cohesive, w<PL,<br>stiff to very stiff                 |             | 1.45                  | 3A      |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
|                       |               |                                                                                                                   |             |                       | 3B      | SS   | 16          |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
| 2                     |               |                                                                                                                   |             |                       |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
|                       |               |                                                                                                                   |             |                       | 4       | SS   | 14          |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
|                       |               |                                                                                                                   | 185.83      |                       |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
| 3                     |               | (SW) SAND, some silt, trace clay;<br>brown; wet, compact                                                          |             | 2.97                  | 5       | SS   | 83/<br>0.25 |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
|                       |               |                                                                                                                   |             |                       |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
| 4                     |               | (SM) SILTY SAND, some gravel, trace<br>clay; brown (TILL); non-cohesive, very<br>dense, wet                       |             | 4.11                  |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
|                       |               |                                                                                                                   |             |                       | 6       | SS   | 45          |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
| 5                     |               | END OF BOREHOLE                                                                                                   |             | 183.62                |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
|                       |               |                                                                                                                   |             | 5.18                  |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
| 6                     |               |                                                                                                                   |             |                       |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
| 7                     |               |                                                                                                                   |             |                       |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
| 8                     |               |                                                                                                                   |             |                       |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
| 9                     |               |                                                                                                                   |             |                       |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |
| 10                    |               |                                                                                                                   |             |                       |         |      |             |                                               |    |                              |    |                                                                     |    |    |    |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: EWB

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-20**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 15, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                         | SOIL PROFILE                                                                                                          |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                      |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |  |                         |    | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |  |                  |  |                  |  |                  |  |
|-----------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----------------------|----|------------------------------------|--|-------------------------|----|----------------------------|-----------------------------------------------|------------------|--|------------------|--|------------------|--|------------------|--|
|                       |                                                       | DESCRIPTION                                                                                                           | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH                                |    |                      |    | WATER CONTENT PERCENT              |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       |                                                                                                                       |             |                       |         |      |            | 20                                            |    | 40                   |    | 60                                 |  | 80                      |    |                            |                                               | 10 <sup>-6</sup> |  | 10 <sup>-5</sup> |  | 10 <sup>-4</sup> |  | 10 <sup>-3</sup> |  |
|                       |                                                       |                                                                                                                       |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. +<br>rem V. ⊕ |    | Q - ●<br>U - ○                     |  | Wp  -----  W  -----  Wi |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       |                                                                                                                       |             |                       |         |      |            | 20                                            | 40 | 60                   | 80 |                                    |  | 10                      | 20 | 30                         | 40                                            |                  |  |                  |  |                  |  |                  |  |
| 0                     | Geoprobe 7822 DT Track Mount<br>83 mm Direct Push SVT | GROUND SURFACE                                                                                                        |             | 184.60                |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       | TOPSOIL (150 mm)                                                                                                      |             | 0.00                  | 1A      |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       | (CI) SILTY CLAY; mottled grey-brown,<br>some layering; cohesive, w>PL, firm                                           |             | 0.15                  | 1B      | SS   | 6          |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       |                                                                                                                       |             | 183.91                |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       | (SM) SILTY SAND, trace clay, trace<br>gravel; brown (TILL-LIKE);<br>non-cohesive, loose                               |             | 0.69                  | 2       | SS   | 9          |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 1                     |                                                       |                                                                                                                       |             | 183.15                |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       | (SM) SILTY SAND, some gravel, trace<br>clay; brown to grey (TILL); non-cohesive,<br>dry to moist, very dense to dense |             | 1.45                  | 3       | SS   | 67         |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 2                     |                                                       |                                                                                                                       |             |                       |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       |                                                                                                                       |             |                       |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       |                                                                                                                       |             |                       |         | 4    | SS         | 46                                            |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 3                     |                                                       | (ML) SILT, trace to some clay; grey,<br>containing seams of silty clay;<br>non-cohesive, wet, dense                   |             | 181.63                |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       |                                                                                                                       |             | 2.97                  | 5       | SS   | 32         |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 4                     |                                                       |                                                                                                                       |             |                       |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       | (SW) SAND, fine grained, trace silt,<br>trace gravel; grey, stratified;<br>non-cohesive, wet, compact                 |             | 180.49                |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       |                                                                                                                       |             | 4.11                  |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 5                     |                                                       |                                                                                                                       |             |                       | 6       | SS   | 16         |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       |                                                                                                                       |             |                       |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       | END OF BOREHOLE                                                                                                       |             | 179.42                |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                       |                                                                                                                       |             | 5.18                  |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 6                     |                                                       |                                                                                                                       |             |                       |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 7                     |                                                       |                                                                                                                       |             |                       |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 8                     |                                                       |                                                                                                                       |             |                       |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 9                     |                                                       |                                                                                                                       |             |                       |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 10                    |                                                       |                                                                                                                       |             |                       |         |      |            |                                               |    |                      |    |                                    |  |                         |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |

</

Dec. 15, 2014

1. Water level in open  
borehole measured at a  
depth of 3.7 m below  
ground surface (Elev.  
180.90 m) on  
December 15, 2014.

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-21**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 15, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                                                                        | SOIL PROFILE                                                                                                 |                                                                                   |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |  |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s                                  |  |  |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                       |  |  |  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|--|--|--|---------------------------------------------------------------------|--|--|--|----------------------------|-----------------------------------------------|-----------------------|--|--|--|
|                       |                                                                                                                      | DESCRIPTION                                                                                                  | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | 20 40 60 80                                   |  |  |  | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |  |  |  | nat V. + Q -<br>rem V. ⊕ U - ⊙                                      |  |  |  |                            |                                               | WATER CONTENT PERCENT |  |  |  |
|                       |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            | 20 40 60 80                                   |  |  |  | 10 20 30 40                                                         |  |  |  |                            |                                               |                       |  |  |  |
| 0                     | Geoprobe 7822 DT Track Mount<br>83 mm Direct Push SVT                                                                | GROUND SURFACE                                                                                               |                                                                                   | 182.80                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      | TOPSOIL (130 mm)                                                                                             |  | 0.00                  | 1A      |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      | (ML) CLAYEY SILT, trace gravel;<br>mottled grey-brown, containing rootlets;<br>cohesive, w>PL, firm to stiff |  | 0.13                  |         | SS   | 4          |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      |                                                                                                              |                                                                                   | 1B                    |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 1                     |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      |                                                                                                              |                                                                                   | 2                     | SS      | 9    |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      | (CI) SILTY CLAY; mottled brown to grey,<br>some varves; cohesive, w<PL, very stiff                           |  | 181.35                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      |                                                                                                              |                                                                                   | 1.45                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 2                     |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      |                                                                                                              |                                                                                   | 3                     | SS      | 17   |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      | (ML) CLAYEY SILT, some gravel, trace<br>sand; brown (TILL); cohesive, w>PL, stiff                            |  | 180.59                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      |                                                                                                              |                                                                                   | 2.21                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 3                     |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       | 4                                                                                                                    |                                                                                                              |                                                                                   | SS                    | 14      |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       | (ML) Sandy SILT, some gravel, trace<br>clay; grey, with zones of clayey silt<br>(TILL); non-cohesive, moist, compact |                             | 180.06                                                                            |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      |                                                                                                              | 2.74                                                                              |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 4                     |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      |                                                                                                              | 5                                                                                 | SS                    | 16      |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 5                     |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       | END OF BOREHOLE                                                                                                      |                                                                                                              |                                                                                   | 177.62                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                                                                      |                                                                                                              |                                                                                   | 5.18                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 6                     |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 7                     |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 8                     |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 9                     |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 10                    |                                                                                                                      |                                                                                                              |                                                                                   |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |

1. Open borehole dry upon completion of drilling on Dec. 15, 2014.

1. Open borehole dry  
upon completion of  
drilling on Dec. 15,  
2014.

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

SHEET 1 OF 1

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

1. Open borehole dry upon completion of drilling on Dec. 15, 2014.

CHECKED: SDK

CGTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-23**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 8, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                                                                      | SOIL PROFILE                                                                                          |                                                                                   |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                            |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                                                     |    |    | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------|------|-----------------------------------------------|----------------------------|----|--------------------------------|------------------------------------|---------------------------------------------------------------------|----|----|----------------------------|-----------------------------------------------|--|
|                       |                                                                                                                    | DESCRIPTION                                                                                           | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | 20      40      60      80 |    |                                |                                    | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa  |    | nat V. + Q -<br>rem V. ⊕ U - ● |                                    | WATER CONTENT PERCENT                                               |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    | Wp   ——— W ———   Wi                                                 |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               | 20                         | 40 | 60                             | 80                                 | 10                                                                  | 20 | 30 | 40                         |                                               |  |
| 0                     | B-45HD Track Mount<br>203 mm O.D. Hollow Stem Augers                                                               | GROUND SURFACE                                                                                        |                                                                                   | 189.10                |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    | TOPSOIL (200 mm)                                                                                      |  | 0.00<br>188.90        | 1A      |      |                                               |                            |    |                                |                                    |                                                                     |    |    | ○                          |                                               |  |
|                       |                                                                                                                    | (CI) SILTY CLAY, trace sand, trace gravel; brown, varved; cohesive, w>PL, firm to stiff               |  | 0.20                  | 1B      | SS   | 6                                             |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
| 1                     |                                                                                                                    |                                                                                                       |                                                                                   |                       |         | 2    | SS                                            | 11                         |    |                                |                                    |                                                                     |    |    | ○                          |                                               |  |
|                       |                                                                                                                    | (ML) CLAYEY SILT, some sand, some gravel; grey, with zones of fine sand (TILL); cohesive, w<PL, stiff |  | 187.80<br>1.30        |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
| 2                     |                                                                                                                    |                                                                                                       |                                                                                   |                       | 3       | SS   | 14                                            |                            |    |                                |                                    |                                                                     |    | ○  |                            |                                               |  |
|                       | (ML) CLAYEY SILT and SAND, some sand, some gravel (TILL-LIKE); grey, with zones of fine sand; cohesive, w<PL, firm |                      | 186.89<br>2.21                                                                    |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
| 3                     |                                                                                                                    |                                                                                                       |                                                                                   |                       | 4       | SS   | 6                                             |                            |    |                                |                                    |                                                                     |    | ○  |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       | 5       | SS   | 8                                             |                            |    |                                |                                    |                                                                     |    | ○  |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
| 4                     |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       | (SM) SILTY SAND, some gravel, trace clay; grey (TILL); non-cohesive, moist, compact                                |                    | 184.99<br>4.11                                                                    |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
| 5                     |                                                                                                                    |                                                                                                       |                                                                                   |                       | 6       | SS   | 27                                            |                            |    |                                |                                    |                                                                     |    | ○  |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    | END OF BOREHOLE                                                                                       |                                                                                   | 183.92<br>5.18        |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
| 6                     |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
| 7                     |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
| 8                     |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
| 9                     |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
|                       |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |
| 10                    |                                                                                                                    |                                                                                                       |                                                                                   |                       |         |      |                                               |                            |    |                                |                                    |                                                                     |    |    |                            |                                               |  |

1. Open borehole dry upon completion of drilling on Dec. 8, 2014.

MH

MH

1. Open borehole dry upon completion of drilling on Dec. 8, 2014.

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-24**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 8, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                        | SOIL PROFILE                                                                                                  |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |  |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s                                  |  |  |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|--|--|--|---------------------------------------------------------------------|--|--|--|----------------------------|-----------------------------------------------|
|                       |                                                      | DESCRIPTION                                                                                                   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa                     |  |  |  | WATER CONTENT PERCENT                                               |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            | 20      40      60      80                    |  |  |  | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            | nat V. + Q - ●<br>rem V. ⊕ U - ○              |  |  |  | Wp   — W —   Wi                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 0                     |                                                      | GROUND SURFACE                                                                                                |             | 186.70                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       | B-45HD Track Mount<br>203 mm O.D. Hollow Stem Augers | FILL - TOPSOIL                                                                                                |             | 0.00                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       | 1       | SS   | 3          |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 1                     |                                                      | (CI) SILTY CLAY, trace sand, trace gravel; mottled brown-grey, block structure; cohesive, w~PL, firm to stiff |             | 186.01<br>0.69        |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       | 2       | SS   | 7          |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 2                     |                                                      |                                                                                                               |             |                       | 3       | SS   | 15         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      | (ML) CLAYEY SILT, some sand, some gravel; grey; cohesive, w<PL, stiff                                         |             | 184.49<br>2.21        |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       | 4       | SS   | 10         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 3                     |                                                      | (ML) SILT, some sand, some gravel; grey, with zones of medium sand (TILL); non-cohesive, moist, compact       |             | 183.73<br>2.97        |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       | 5       | SS   | 15         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 4                     |                                                      | (ML) CLAYEY SILT, some sand, some gravel; grey (TILL); cohesive, w<PL, stiff                                  |             | 182.59<br>4.11        |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 5                     |                                                      |                                                                                                               |             |                       | 6       | SS   | 16         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      | END OF BOREHOLE                                                                                               |             | 181.52<br>5.18        |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 6                     |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 7                     |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 8                     |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 9                     |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 10                    |                                                      |                                                                                                               |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |

Dec 8, 2014

1. Water level in open borehole measured at a depth of 3.7 m below ground surface (Elev. 182.00 m) on December 8, 2014.

  
 Dec 8, 2014

 1. Water level in open  
 borehole measured at a  
 depth of 3.7 m below  
 ground surface (Elev.  
 182.00 m) on  
 December 8, 2014.

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17



PROJECT: 1413472

**RECORD OF BOREHOLE: 14-25**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 15, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                         | SOIL PROFILE                                                                                       |                                                                                                                              |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |  |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s                                  |  |  |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                       |  |  |  |
|-----------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|--|--|--|---------------------------------------------------------------------|--|--|--|----------------------------|-----------------------------------------------|-----------------------|--|--|--|
|                       |                                                       | DESCRIPTION                                                                                        | STRATA PLOT                                                                                                                  | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | 20      40      60      80                    |  |  |  | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       |                                                                                                    |                                                                                                                              |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |  |  |  | nat V. + Q - ●<br>rem V. ⊕ U - ○                                    |  |  |  |                            |                                               | WATER CONTENT PERCENT |  |  |  |
|                       |                                                       |                                                                                                    |                                                                                                                              |                       |         |      |            | 20      40      60      80                    |  |  |  | 10      20      30      40                                          |  |  |  |                            |                                               |                       |  |  |  |
| 0                     | Geoprobe 7822 DT Track Mount<br>83 mm Direct Push SVT | GROUND SURFACE                                                                                     |                                                                                                                              | 184.70                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       | TOPSOIL (150 mm)                                                                                   |                                                                                                                              | 0.00                  | 1A      |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       | FILL - (SM) SILTY SAND, trace gravel,<br>trace rootlets; dark brown; non-cohesive,<br>moist, loose |                                                                                                                              | 0.15                  | 1B      | SS   | 5          |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       |                                                                                                    |                                                                                                                              | 184.01                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       | (ML) CLAYEY SILT; mottled grey-brown;<br>cohesive, w<PL, firm                                      |                                                                                                                              | 0.69                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 1                     |                                                       |                                                                                                    | (SM) SILTY SAND, some gravel, trace<br>clay; brown (TILL); moist, compact                                                    |                       | 0.84    | 2    | SS         | 13                                            |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       |                                                                                                    |                                                                                                                              | 183.25                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       | (ML) CLAYEY SILT, some sand, some<br>gravel; brown to grey (TILL-LIKE);<br>cohesive, w>PL, soft    |                                                                                                                              | 1.45                  | 3       | SS   | 2          |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 2                     |                                                       |                                                                                                    |                                                                                                                              |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       |                                                                                                    | (ML) Sandy SILT, some gravel, some<br>clay; grey (TILL); non-cohesive, wet,<br>compact                                       |                       | 182.34  | 4    | SS         | 18                                            |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       |                                                                                                    |                                                                                                                              | 2.36                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 3                     |                                                       |                                                                                                    | (ML) CLAYEY SILT, some sand, some<br>gravel; grey, with zones of silt, layered<br>(TILL); cohesive, dry to moist, very stiff |                       | 181.73  | 5    | SS         | 27                                            |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       |                                                                                                    | 2.97                                                                                                                         |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 4                     |                                                       |                                                                                                    |                                                                                                                              |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 5                     |                                                       |                                                                                                    |                                                                                                                              |                       | 6       | SS   | 27         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       | END OF BOREHOLE                                                                                    |                                                                                                                              | 179.52                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                       |                                                                                                    |                                                                                                                              | 5.18                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 6                     |                                                       |                                                                                                    |                                                                                                                              |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 7                     |                                                       |                                                                                                    |                                                                                                                              |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 8                     |                                                       |                                                                                                    |                                                                                                                              |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 9                     |                                                       |                                                                                                    |                                                                                                                              |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 10                    |                                                       |                                                                                                    |                                                                                                                              |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |

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 Dec. 15, 2014

 1. Water level in open  
 borehole measured at a  
 depth of 4.7 m below  
 ground surface (Elev.  
 180.80 m) on  
 December 15, 2014.

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-26**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 16, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                        |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|---------------|-----------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |               | DESCRIPTION                                                                                         | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> |
|                       |               |                                                                                                     |             |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |        | 10         | 20     | 30                         | 40                                            |                  |                  |
| 0                     |               | GROUND SURFACE                                                                                      |             | 193.10                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | TOPSOIL (50 mm)                                                                                     |             | 193.10                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | (CI) SILTY CLAY, some gravel, trace sand; brown (TILL); cohesive, w<PL, stiff to very stiff         |             | 190.89                | 1       | SS   | 8          |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 1                     |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       | 2       | SS   | 21         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       | 3       | SS   | 21         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 2                     |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | (ML) CLAYEY SILT, trace sand, some gravel; brown to grey (TILL); cohesive, w<PL, hard to very stiff |             | 190.89                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             | 2.21                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       | 4       | SS   | 34         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 3                     |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       | 5       | SS   | 32         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 4                     |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 5                     |               |                                                                                                     |             |                       | 6       | SS   | 29         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | END OF BOREHOLE                                                                                     |             | 187.92                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             | 5.18                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 6                     |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 7                     |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 8                     |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 9                     |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 10                    |               |                                                                                                     |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: EWB

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 Mk Sept. 12/17

SHEET 1 OF 1

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

[illegible]

DEPTH SCALE

1 : 50

LOGGED: EWB

CHECKED: SDK

SHEET 1 OF 1

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

[illegible]

DEPTH SCALE

1 : 50

LOGGED: EWB

CHECKED: SDK

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-29**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 16, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                         | SOIL PROFILE                                                                                             |             |                       | SAMPLES |             | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                    |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |  |
|-----------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|-------------|-----------------------------------------------|---------------------------|----|----------------------------------|------------------------------------|------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|--|
|                       |                                                       | DESCRIPTION                                                                                              | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE        | BLOWS/0.3m                                    | RESISTANCE, BLOWS/0.3m    |    |                                  |                                    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q - ●<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT              |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               | 20                        | 40 | 60                               | 80                                 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 0                     | Geoprobe 7822 DT Track Mount<br>83 mm Direct Push SVT | GROUND SURFACE                                                                                           |             | 190.39                |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       | TOPSOIL (150 mm)                                                                                         |             | 0.00                  | 1A      |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       | (CI) SILTY CLAY, trace sand, trace gravel; mottled grey-brown (TILL-Like); cohesive, w~PL, firm          |             | 0.15                  | 1B      | 8           |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             | 189.70                |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 1                     |                                                       | (ML) CLAYEY SILT, some gravel, trace sand; mottled grey-brown (TILL); cohesive, w<PL, very stiff to hard |             | 0.69                  |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             | 2                     | SS      | 18          |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             | 3                     | SS      | 32          |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 2                     |                                                       | (ML) Sandy SILT, some gravel, trace clay; brown to grey (TILL); dry to moist, very dense                 |             | 188.18                |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             | 2.21                  |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             | 4                     | SS      | 50/<br>0.10 |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 3                     |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             | 5                     | SS      | 50/<br>0.15 |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             | 6                     | SS      | 50/<br>.125 |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 4                     |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 5                     |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 6                     |                                                       | (CI) SILTY CLAY, trace sand, trace gravel; grey (TILL); cohesive, w<PL, hard                             |             | 184.75                |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             | 5.64                  |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             | 7                     | SS      | 73          |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 7                     |                                                       | END OF BOREHOLE                                                                                          |             | 183.68                |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             | 6.71                  |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 8                     |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 9                     |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
| 10                    |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |
|                       |                                                       |                                                                                                          |             |                       |         |             |                                               |                           |    |                                  |                                    |                                    |                  |                  |                            |                                               |                  |  |

Bentonite

Sand

Screen

Jan. 5, 2015

1. Water level in open borehole measured at a depth of 5.0 m below ground surface (Elev. 185.39 m) on January 5, 2015.

1. Water level in open borehole measured at a depth of 5.0 m below ground surface (Elev. 185.39 m) on January 5, 2015.

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-30**

SHEET 1 OF 1

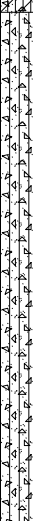
LOCATION: SEE FIGURE 2

BORING DATE: December 16, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                        | SOIL PROFILE                                                                       |                                                                                                                |                                                                                    | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|
|                       |                                                      | DESCRIPTION                                                                        | STRATA PLOT                                                                                                    | ELEV.<br>DEPTH<br>(m)                                                              | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |
|                       |                                                      |                                                                                    |                                                                                                                |                                                                                    |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               |
|                       |                                                      | GROUND SURFACE                                                                     |                                                                                                                | 194.40                                                                             |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 0                     | Geoprobe 7822 DT Track Mount<br>83 mm Dired Push SVT | TOPSOIL (250 mm)                                                                   |                               | 0.00                                                                               | 1A      |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                      | (ML) CLAYEY SILT, some gravel, trace sand; brown (TILL-LIKE); cohesive, w>PL, soft |                               | 194.15                                                                             |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                      |                                                                                    |                                                                                                                | 0.25                                                                               | 1B      | SS   | 3          |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                      | (ML) CLAYEY SILT, some gravel, trace to some sand; (TILL); cohesive, w<PL, stiff   |                               | 193.71                                                                             |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                      |                                                                                    |                                                                                                                | 0.69                                                                               |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 1                     |                                                      |                                                                                    | (ML) Sandy SILT, some clay, some gravel; brown to grey (TILL); non-cohesive, moist to dry, dense to very dense |  | 192.95  |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                      | 1.45                                                                               |                                                                                                                |                                                                                    |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                      |                                                                                    |                                                                                                                |                                                                                    |         | 3    | SS         | 17                                            |    |    |    |                                    |        |            |        |                            |                                               |
| 2                     |                                                      |                                                                                    |                                                                                                                |                                                                                    |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                      |                                                                                    |                                                                                                                |                                                                                    |         | 4    | SS         | 28                                            |    |    |    |                                    |        |            |        |                            |                                               |
| 3                     |                                                      |                                                                                    |                                                                                                                |                                                                                    |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                      |                                                                                    |                                                                                                                |                                                                                    | 5       | SS   | 26         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 4                     |                                                      |                                                                                    |                                                                                                                |                                                                                    |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                      |                                                                                    |                                                                                                                |                                                                                    | 6       | SS   | 50/.125    |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 5                     |                                                      | END OF BOREHOLE                                                                    |                                                                                                                | 189.55                                                                             |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                      |                                                                                    |                                                                                                                | 4.85                                                                               |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 6                     |                                                      |                                                                                    |                                                                                                                |                                                                                    |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 7                     |                                                      |                                                                                    |                                                                                                                |                                                                                    |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 8                     |                                                      |                                                                                    |                                                                                                                |                                                                                    |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 9                     |                                                      |                                                                                    |                                                                                                                |                                                                                    |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 10                    |                                                      |                                                                                    |                                                                                                                |                                                                                    |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-31**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 16, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |                  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|                       |               | DESCRIPTION  | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       |               |              |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |                  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       |               |              |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       |               |              |             |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |        |            |        |                            |                                               |                  |                  |                  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

DEPTH SCALE

1 : 50



LOGGED: EWB

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17



PROJECT: 1413472

**RECORD OF BOREHOLE: 14-32**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 5, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                  | SOIL PROFILE                                                                                              |                                                                                                                           |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |  |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s                                  |  |  |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|--|--|--|---------------------------------------------------------------------|--|--|--|----------------------------|-----------------------------------------------|
|                       |                                                | DESCRIPTION                                                                                               | STRATA PLOT                                                                                                               | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | 20      40      60      80                    |  |  |  | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |  |  |  | nat V. + Q - ●<br>rem V. ⊕ U - ○                                    |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            | 20      40      60      80                    |  |  |  | 10      20      30      40                                          |  |  |  |                            |                                               |
| 0                     | B-45HD Track Mount<br>102 mm Solid Stem Augers | GROUND SURFACE                                                                                            |                                                                                                                           | 194.90                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                | TOPSOIL (100 mm)                                                                                          |                                                                                                                           | 0.00                  | 1A      |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                | FILL - (CI) SILTY CLAY, trace sand,<br>trace gravel; brown, containing organics;<br>cohesive, w>PL, stiff |                                                                                                                           | 0.10                  | 1B      | SS   | 12         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           | 194.21                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                | FILL - (SM) SILTY SAND, trace gravel,<br>trace silt; brown/grey; non-cohesive,<br>moist, loose            |                                                                                                                           | 0.69                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 1                     |                                                |                                                                                                           |                                                                                                                           | 193.76                | 2       | SS   | 7          |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           | FILL - (CL) SILTY CLAY, some sand,<br>trace gravel; mixed brown and grey,<br>containing organics; cohesive, w<PL,<br>firm |                       | 1.14    |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 2                     |                                                |                                                                                                           |                                                                                                                           |                       |         | 3    | SS         | 6                                             |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           |                       | 192.46  |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                | (ML) CLAYEY SILT, some sand, some<br>gravel; grey (TILL-LIKE); cohesive, firm                             |                                                                                                                           | 2.44                  | 4       | SS   | 6          |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 3                     |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                | (SM) SILTY SAND, trace gravel; grey;<br>non-cohesive, moist, compact                                      |                                                                                                                           | 191.80                | 5       | SS   | 16         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           | 3.10                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 4                     |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 5                     |                                                |                                                                                                           |                                                                                                                           |                       | 6       | SS   | 19         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                | END OF BOREHOLE                                                                                           |                                                                                                                           | 189.72                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           | 5.18                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 6                     |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 7                     |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 8                     |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 9                     |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 10                    |                                                |                                                                                                           |                                                                                                                           |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |

MH

1. Open borehole dry  
upon completion of  
drilling on Dec. 5, 2014.

DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-33**

SHEET 1 OF 1

LOCATION: SEE FIGURE 2

BORING DATE: December 5, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                        | SOIL PROFILE                                                                                                 |                                                                                                          |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |  |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |  |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|--|--|------------------------------------|-----------------------|--|--|----------------------------|-----------------------------------------------|--|
|                       |                                                      | DESCRIPTION                                                                                                  | STRATA PLOT                                                                                              | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |  |  |                                    | WATER CONTENT PERCENT |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 0                     |                                                      | GROUND SURFACE                                                                                               |                                                                                                          | 194.67                |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       | B-45HD Track Mount<br>203 mm O.D. Hollow Stem Augers | TOPSOIL (150 mm)                                                                                             |                                                                                                          | 0.00                  | 1A      |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      | (CL) SILTY CLAY, trace gravel; mottled grey-brown; containing rootlets in upper zones; cohesive, w>PL, stiff |                                                                                                          | 0.15                  | 1B      | SS   | 10                                            |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 1                     |                                                      |                                                                                                              |                                                                                                          |                       |         | 2    | SS                                            | 12                        |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              | (SM) SILTY SAND, some clay, some gravel; mottled grey-brown to grey; non-cohesive, moist to wet, compact |                       | 193.22  |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       | 1.45    |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 2                     |                                                      |                                                                                                              |                                                                                                          |                       |         | 3    | SS                                            | 12                        |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         | 4    | SS                                            | 21                        |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 3                     |                                                      |                                                                                                              | (CL) sandy SILTY CLAY, trace to some gravel; grey (TILL); cohesive, moist, stiff to hard                 |                       | 191.70  |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          | 2.97                  |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       | 5       | SS   | 12                                            |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 4                     |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 5                     |                                                      |                                                                                                              |                                                                                                          |                       | 6       | SS   | 16                                            |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 6                     |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 7                     |                                                      |                                                                                                              |                                                                                                          |                       | 7       | SS   | 66                                            |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 8                     |                                                      | (SP) SAND, fine grained, trace silt; grey, with layers of clayey silt; moist, compact                        |                                                                                                          | 187.51                |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          | 7.16                  |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       | 8       | SS   | 21                                            |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      | END OF BOREHOLE                                                                                              |                                                                                                          | 186.44                |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          | 8.23                  |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 9                     |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
|                       |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |
| 10                    |                                                      |                                                                                                              |                                                                                                          |                       |         |      |                                               |                           |  |  |                                    |                       |  |  |                            |                                               |  |

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DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

**RECORD OF BOREHOLE: 14-34**

SHEET 1 OF 1

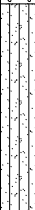
LOCATION: SEE FIGURE 2

BORING DATE: December 8, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                        | SOIL PROFILE                                                                |                                                                                                        |                                                                                   | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                |    |                 | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |    |    |    |    |
|-----------------------|------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|------|-----------------------------------------------|----------------|----|-----------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|----|----|----|----|
|                       |                                                      | DESCRIPTION                                                                 | STRATA PLOT                                                                                            | ELEV.<br>DEPTH<br>(m)                                                             | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH |    |                 |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      |                                                                             |                                                                                                        |                                                                                   |         |      |                                               | Cu, kPa        |    | nat V. + rem V. |                                    | Q - U                 |                  | Wp               |                            |                                               | W                |    | Wi |    |    |
|                       |                                                      |                                                                             |                                                                                                        |                                                                                   |         |      |                                               | 20             | 40 | 60              | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> | 10 | 20 | 30 | 40 |
| 0                     | B-45HD Track Mount<br>203 mm O.D. Hollow Stem Augers | GROUND SURFACE                                                              |                                                                                                        | 180.40                                                                            |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      | ASPHALT                                                                     |                       | 0.00                                                                              | 1A      |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      | GRANULAR FILL                                                               |                       | 0.15                                                                              | 1B      | SS   | 10                                            |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      |                                                                             |                                                                                                        |                                                                                   |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
| 1                     |                                                      |                                                                             | (SW) Gravelly SAND, trace silt; brown; non-cohesive, moist to wet, compact                             |  | 179.56  | 2    | SS                                            | 11             |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      |                                                                             |                                                                                                        |                                                                                   | 0.84    |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      |                                                                             |                                                                                                        |                                                                                   |         | 3    | SS                                            | 25             |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
| 2                     |                                                      |                                                                             |                                                                                                        |                                                                                   |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      |                                                                             | (SM) SILTY SAND, fine grained, some gravel, trace clay; grey; non-cohesive, wet, compact to very loose |  | 178.04  | 4    | SS                                            | 12             |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      |                                                                             |                                                                                                        |                                                                                   | 2.36    |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
| 3                     |                                                      |                                                                             |                                                                                                        |                                                                                   | 5       | SS   | WR                                            |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      |                                                                             |                                                                                                        |                                                                                   |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
| 4                     |                                                      | (SM) SILTY SAND, fine grained, trace clay; grey; non-cohesive, wet, compact |                      | 176.67                                                                            | 6       | SS   | 17                                            |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      |                                                                             |                                                                                                        | 3.73                                                                              |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
| 5                     |                                                      |                                                                             |                                                                                                        |                                                                                   | 7       | SS   | 14                                            |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      | END OF BOREHOLE                                                             |                                                                                                        | 175.22                                                                            |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
|                       |                                                      |                                                                             |                                                                                                        | 5.18                                                                              |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
| 6                     |                                                      |                                                                             |                                                                                                        |                                                                                   |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
| 7                     |                                                      |                                                                             |                                                                                                        |                                                                                   |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
| 8                     |                                                      |                                                                             |                                                                                                        |                                                                                   |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
| 9                     |                                                      |                                                                             |                                                                                                        |                                                                                   |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |
| 10                    |                                                      |                                                                             |                                                                                                        |                                                                                   |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |                  |    |    |    |    |

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DEPTH SCALE

1 : 50



LOGGED: AVR

CHECKED: SDK

GTA-BHS 001 1413472.GPJ GAL-MIS.GDT 9/12/17 MK Sept. 12/17

PROJECT: 1413472

LOCATION: N 4860422.01; E 633976.14

**RECORD OF BOREHOLE: 16-1**

SHEET 1 OF 2

BORING DATE: February 29 to March 1, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                       | SOIL PROFILE                                                                                                                                      |                                                                                     | SAMPLES               |        |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                      | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                       | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------|--------|------|-----------------------------------------------|---------------------------|----|----------------------|------------------------------------|------------------|------------------|-----------------------|----------------------------|-----------------------------------------------|--|
|                       |                                                                     | DESCRIPTION                                                                                                                                       | STRATA PLOT                                                                         | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE | BLOWS/0.3m                                    |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V. +<br>rem V. ⊕ |                                    | Q - ●<br>U - ○   |                  | WATER CONTENT PERCENT |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      | 20                                            | 40                        | 60 | 80                   |                                    | 10 <sup>-6</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup>      | 10 <sup>-3</sup>           |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      | Wp   ———— W ————   WI              |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      | 20                                            | 40                        | 60 | 80                   |                                    | 10               | 20               | 30                    | 40                         |                                               |  |
| 0                     |                                                                     | GROUND SURFACE                                                                                                                                    |                                                                                     | 187.38                |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       | CME-85 TRUCK MOUNTED - POWER AUGER<br>100 mm O.D. Solid Stem Augers | TOPSOIL                                                                                                                                           |    | 0.00                  |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     | (CL-ML) Sandy CLAYEY SILT, trace gravel; brown to dark brown to grey; cohesive, w>PL, stiff to very stiff                                         |    | 187.00                | 1      | SS   | 8                                             |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     | 0.38                  |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 1                     |                                                                     |                                                                                                                                                   |                                                                                     |                       |        | 2    | SS                                            | 17                        |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     | (SM) SILTY SAND, trace gravel, some cohesive fines; brown to grey, oxidation staining to a depth of 3.8 m (TILL); moist, non-cohesive, very dense |    | 185.86                |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     | 1.52                  |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 2                     |                                                                     |                                                                                                                                                   |                                                                                     |                       |        | 3    | SS                                            | 49                        |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     | - Fibrous organics noted to a depth of 2.1 m                                                                                                      |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        | 4    | SS                                            | 62                        |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 3                     |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       | 5      | SS   | 69                                            |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 4                     |                                                                     | -Becoming grey below a depth of 3.8 m                                                                                                             |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       | 6      | SS   | 53                                            |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 5                     |                                                                     | (CL-ML) Sandy SILTY CLAY to Sandy CLAYEY SILT, trace to some gravel; grey (TILL); cohesive, w<PL to w~PL, very stiff to hard                      |  | 182.88                |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     | 4.50                  |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       | 7      | SS   | 24                                            |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 6                     |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       | 8      | SS   | 25                                            |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 7                     |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 8                     |                                                                     |                                                                                                                                                   |                                                                                     |                       | 9      | SS   | 23                                            |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 9                     |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       | 10     | SS   | 57                                            |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 10                    |                                                                     |                                                                                                                                                   |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                     | CONTINUED NEXT PAGE                                                                                                                               |                                                                                     |                       |        |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472

**RECORD OF BOREHOLE: 16-1**

SHEET 2 OF 2

LOCATION: N 4860422.01; E 633976.14

BORING DATE: February 29 to March 1, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                       | SOIL PROFILE                                                                                                                                                                  |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                |                      | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |   |    | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |  |
|-----------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-----------------------------------------------|------------|----------------|----------------------|------------------------------------|----|---|----|----------------------------|-----------------------------------------------|--|--|
|                       |                                                                     | DESCRIPTION                                                                                                                                                                   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m | SHEAR STRENGTH |                      | WATER CONTENT PERCENT              |    |   |    |                            |                                               |  |  |
|                       |                                                                     |                                                                                                                                                                               |             |                       |        |                                               |            | Cu, kPa        | nat V. +<br>rem V. ⊕ | Q -<br>U -                         | Wp | W | Wi |                            |                                               |  |  |
| 10                    | CME-85 TRUCK MOUNTED - POWER AUGER<br>100 mm O.D. Solid Stem Augers | --- CONTINUED FROM PREVIOUS PAGE ---<br>(CL-ML) Sandy SILTY CLAY to Sandy<br>CLAYEY SILT, trace to some gravel;<br>grey (TILL); cohesive, w<PL to w~PL,<br>very stiff to hard |             |                       |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 11                    |                                                                     |                                                                                                                                                                               |             | 11                    | SS     | 48                                            |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 12                    |                                                                     |                                                                                                                                                                               |             |                       |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 12                    |                                                                     |                                                                                                                                                                               |             | 12                    | SS     | 37                                            |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 13                    |                                                                     | END OF BOREHOLE                                                                                                                                                               |             | 174.58                |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 13                    |                                                                     | NOTES:                                                                                                                                                                        |             | 12.80                 |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 14                    |                                                                     | 1. Water level measured in open<br>borehole at a depth of 11.2 m upon<br>completion of drilling.                                                                              |             |                       |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 15                    |                                                                     |                                                                                                                                                                               |             |                       |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 16                    |                                                                     |                                                                                                                                                                               |             |                       |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 17                    |                                                                     |                                                                                                                                                                               |             |                       |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 18                    |                                                                     |                                                                                                                                                                               |             |                       |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 19                    |                                                                     |                                                                                                                                                                               |             |                       |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |
| 20                    |                                                                     |                                                                                                                                                                               |             |                       |        |                                               |            |                |                      |                                    |    |   |    |                            |                                               |  |  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

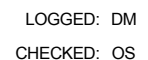
LOCATION: N 4860347.14; E 634037.23

SHEET 1 OF 2

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE  
1 : 50



GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK\_GOLF\_COURSE\02\_DATA\GINT\1413472\_FROM\_RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472  
LOCATION: N 4860347.14; E 634037.23

## RECORD OF BOREHOLE: 16-2

SHEET 2 OF 2  
DATUM: Geodetic

BORING DATE: March 1, 2016

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                       | SOIL PROFILE                                                                                                                                            |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |             |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-----------------------------------------------|-------------|---------------------------|----|------------------------------------|----|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                     | DESCRIPTION                                                                                                                                             | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m  | SHEAR STRENGTH<br>Cu, kPa |    | WATER CONTENT PERCENT              |    |                  |                  |                            |                                               |
|                       |                                                                     |                                                                                                                                                         |             |                       |        |                                               |             | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup> | 10 <sup>-5</sup> |                            |                                               |
|                       |                                                                     | --- CONTINUED FROM PREVIOUS PAGE ---<br>(ML) Sandy SILT, some cohesive fines,<br>trace gravel; grey (TILL); non-cohesive,<br>moist, dense to very dense |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
| 10                    | CME-85 TRUCK MOUNTED - POWER AUGER<br>100 mm O.D. Solid Stem Augers |                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
| 11                    |                                                                     |                                                                                                                                                         |             |                       | 11     | SS                                            | 54          |                           |    |                                    |    |                  |                  |                            |                                               |
| 12                    |                                                                     |                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
|                       |                                                                     | END OF BOREHOLE                                                                                                                                         |             | 172.94                | 12     | SS                                            | 50/<br>0.08 |                           |    |                                    |    |                  |                  |                            |                                               |
|                       |                                                                     | NOTES:<br><br>1. Water level measured in open<br>borehole at a depth of 2.0 m upon<br>completion of drilling, March 1, 2016                             |             | 12.42                 |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
| 13                    |                                                                     |                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
| 14                    |                                                                     |                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
| 15                    |                                                                     |                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
| 16                    |                                                                     |                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
| 17                    |                                                                     |                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
| 18                    |                                                                     |                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
| 19                    |                                                                     |                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |
| 20                    |                                                                     |                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                  |                  |                            |                                               |

DEPTH SCALE  
1 : 50



LOGGED: DM  
CHECKED: OS



PROJECT: 1413472

LOCATION: N 4861018.31; E 635094.77

**RECORD OF BOREHOLE: 16-3**

SHEET 1 OF 1

BORING DATE: February 24, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                                    | SOIL PROFILE                                                                                                                                                                                                               |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                  |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|
|                       |                                                                                  | DESCRIPTION                                                                                                                                                                                                                | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q - ●<br>rem V. ⊕ U - ○ |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            | 20                                            | 40 | 60                               | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
| 0                     |                                                                                  | GROUND SURFACE                                                                                                                                                                                                             |             | 197.56                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       | CME-85 TRUCK MOUNTED - POWER AUGER<br>110 mm I.D. 200 mm O.D. Hollow Stem Augers | TOPSOIL                                                                                                                                                                                                                    |             | 0.00                  | 1A      |      |            |                                               |    |                                  |    |                                    |                  |                  |                  | Concrete                   |                                               |  |
|                       |                                                                                  | (CL) SILTY CLAY, some sand to sandy, trace to some gravel; light brown to light brown mottled grey, oxidation staining, fibrous organics; cohesive, w~PL, stiff                                                            |             | 197.36                | 1B      | SS   | 9          |                                               |    |                                  |    |                                    |                  |                  |                  | Cuttings                   |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
| 1                     |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  | (SM) SILTY SAND, some gravel, trace to some cohesive fines; brown to grey, oxidation staining (TILL); non-cohesive, moist, compact to dense<br>- Auger grinding on probable cobbles/boulders from depths of 1.5 m to 2.1 m |             | 196.11                | 2       | SS   | 9          |                                               |    |                                  |    |                                    |                  |                  |                  | Bentonite                  |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
| 2                     |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  | (ML/SM) Sandy SILT to SILTY SAND; grey; non-cohesive, moist to wet, dense<br>- 50 mm thick sand seam at a depth of 4.3 m                                                                                                   |             | 193.83                | 6       | SS   | 33         |                                               |    |                                  |    |                                    |                  |                  |                  | Sand                       |                                               |  |
| 4                     |                                                                                  |                                                                                                                                                                                                                            |             | 3.73                  |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                                  |                                                                                                                                                                                                                            |             |                       |         |      |            |                                               |    | </                               |    |                                    |                  |                  |                  |                            |                                               |  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE GPJ GAL-MIS.GDT 4/18/16

LOCATION: N 4860382.52; E 634929.27

**RECORD OF BOREHOLE: 16-4**

SHEET 1 OF 1

DATUM: Geodetic

BORING DATE: February 23, 2016

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

[illegible]

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK\_GOLF\_COURSE\02\_DATA\GINT\1413472\_FROM\_RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472

LOCATION: N 4860647.72; E 634606.69

**RECORD OF BOREHOLE: 16-5**

SHEET 1 OF 1

BORING DATE: February 24, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                        | SOIL PROFILE                                                                                                                                                                                           |                                                                   |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                      |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                       |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |    |   |
|-----------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----------------------|----|------------------------------------|------------------|-----------------------|------------------|----------------------------|-----------------------------------------------|----|---|
|                       |                                                                      | DESCRIPTION                                                                                                                                                                                            | STRATA PLOT                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. +<br>rem V. ⊕ |    | Q - ●<br>U - ○                     |                  | WATER CONTENT PERCENT |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            | 20                                            | 40 | 60                   | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup>      | 10 <sup>-3</sup> |                            |                                               | Wp | W |
|                       |                                                                      | GROUND SURFACE                                                                                                                                                                                         |                                                                   | 186.08                |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 0                     | CME-85 TRUCK MOUNTED - POWER AUGER<br>200 mm O.D. Hollow Stem Augers | TOPSOIL                                                                                                                                                                                                |                                                                   | 0.00                  | 1       | SS   | 6          |                                               |    |                      |    |                                    |                  |                       |                  | Concrete<br>March 11, 2016 |                                               |    |   |
|                       |                                                                      | (CL-ML) CLAYEY SILT to CLAYEY SILT<br>and SAND, trace to some gravel; brown<br>mottled grey, becoming grey below a<br>depth of 2.3 m, trace fibrous organics;<br>cohesive, w~PL to w>PL, soft to stiff |                                                                   | 185.47                |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  | Sand                       |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   | 0.61                  | 2       | SS   | 12         |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 1                     |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   | 2                     | SS      | 13   |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 2                     |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      | 4                                                                                                                                                                                                      | SS                                                                | 4                     |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  | Bentonite Seal             |                                               |    |   |
| 3                     |                                                                      |                                                                                                                                                                                                        | (CL) SILTY CLAY, trace sand; light<br>brown; cohesive, w>PL, firm |                       | 183.11  |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        | 2.97                                                              |                       | 5       | SS   | 6          |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 4                     |                                                                      | (SW) SAND, trace to some gravel, trace<br>fines; brown; non-cohesive, wet, very<br>loose to dense                                                                                                      |                                                                   | 182.35                |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   | 3.73                  | 6       | SS   | 6          |                                               |    |                      |    |                                    |                  |                       |                  | Sand                       |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 5                     |                                                                      |                                                                                                                                                                                                        |                                                                   |                       | 7       | SS   | 4          |                                               |    |                      |    |                                    |                  |                       |                  | M                          |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  | Screen                     |                                               |    |   |
| 6                     |                                                                      |                                                                                                                                                                                                        |                                                                   |                       | 8       | SS   | 35         |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 7                     |                                                                      | END OF BOREHOLE                                                                                                                                                                                        |                                                                   | 179.37                |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      | NOTE:                                                                                                                                                                                                  |                                                                   | 6.71                  |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      | 1. Water level measured in monitoring<br>well at a depth of 0.5 m, February 25,<br>2016.                                                                                                               |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 8                     |                                                                      | 2. Water level measured in monitoring<br>well at a depth of 0.11 m, March 11,<br>2016.                                                                                                                 |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 9                     |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 10                    |                                                                      |                                                                                                                                                                                                        |                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN\_GOLF COURSE\02\_DATA\GINT\1413472 FROM RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

LOCATION: N 4860589.30; E 634092.95

**RECORD OF BOREHOLE: 16-6**

SHEET 1 OF 1

BORING DATE: March 2, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

[illegible]

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

PROJECT: 1413472

LOCATION: N 4860439.38; E 633967.65

**RECORD OF BOREHOLE: 16-7**

SHEET 1 OF 1

BORING DATE: February 29, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                       | SOIL PROFILE                                                                                                                                                                                                      |                                                                                                                                   | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                       |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |                |
|-----------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------|-----------------------------------------------|------------|----------------|----|------------------------------------|----|-----------------------|------------------|----------------------------|-----------------------------------------------|--|----------------|
|                       |                                                                     | DESCRIPTION                                                                                                                                                                                                       | STRATA PLOT                                                                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m | SHEAR STRENGTH |    |                                    |    | WATER CONTENT PERCENT |                  |                            |                                               |  |                |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        |                                               |            | Cu, kPa        |    | nat V. + Q -<br>rem V. ⊕ U - ○     |    | Wp   — W —   WI       |                  |                            |                                               |  |                |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        |                                               |            | 20             | 40 | 60                                 | 80 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup>           | 10 <sup>-3</sup>                              |  |                |
| 0                     |                                                                     | GROUND SURFACE                                                                                                                                                                                                    |                                                                                                                                   | 187.59                |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
|                       | CME-85 TRUCK MOUNTED - POWER AUGER<br>100 mm O.D. Solid Stem Augers | TOPSOIL                                                                                                                                                                                                           |                                                                                                                                   | 0.00                  |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  | Concrete       |
|                       |                                                                     | (CL-ML) Sandy CLAYEY SILT, trace gravel; brown, trace fibrous organics; cohesive, w<PL to w~PL, soft to very stiff                                                                                                |                                                                                                                                   | 187.18                | 1      | SS                                            | 4          |                |    |                                    |    |                       |                  |                            |                                               |  | Bentonite      |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   | 0.41                  |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
| 1                     |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        | 2                                             | SS         | 12             |    |                                    |    |                       |                  | ○                          |                                               |  |                |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        | 3                                             | SS         | 19             |    |                                    |    |                       |                  | ○                          |                                               |  | Sand           |
| 2                     |                                                                     |                                                                                                                                                                                                                   | (ML-CL) Sandy CLAYEY SILT to Sandy SILTY CLAY, trace to some gravel; light brown, oxidation staining (TILL); cohesive, w<PL, hard |                       | 185.38 |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   | 2.21                  |        | 4                                             | SS         | 41             |    |                                    |    |                       | ○                |                            |                                               |  | AL/MH          |
| 3                     |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  | March 11, 2016 |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        |                                               | 5          | SS             | 41 |                                    |    |                       |                  | ○                          |                                               |  | Screen         |
|                       |                                                                     | (SW) Gravelly SAND, some fines; brown; non-cohesive, moist, dense (ML/CL) Sandy CLAYEY SILT to SILTY CLAY, trace to some gravel; grey, oxidation staining (TILL); cohesive, w<PL to w~PL, stiff to very stiff     |                                                                                                                                   | 184.08                |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
| 4                     |                                                                     |                                                                                                                                                                                                                   | 3.51                                                                                                                              |                       |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
|                       |                                                                     |                                                                                                                                                                                                                   | 3.66                                                                                                                              |                       | 6      | SS                                            | 14         |                |    |                                    |    |                       | ○                |                            |                                               |  |                |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
| 5                     |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       | 7      | SS                                            | 17         |                |    |                                    |    |                       | ○                |                            |                                               |  |                |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
| 6                     |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       | 8      | SS                                            | 22         |                |    |                                    |    |                       | ○                |                            |                                               |  |                |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
| 7                     |                                                                     | END OF BOREHOLE                                                                                                                                                                                                   |                                                                                                                                   | 180.88                |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
|                       |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   | 6.71                  |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
| 8                     |                                                                     | NOTE:<br><br>1. Water level measured in open borehole at a depth of 4.3 m upon completion of drilling, February 29, 2016.<br><br>2. Water level measured in monitoring well at a depth of 2.78 m, March 11, 2016. |                                                                                                                                   |                       |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
| 9                     |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |
| 10                    |                                                                     |                                                                                                                                                                                                                   |                                                                                                                                   |                       |        |                                               |            |                |    |                                    |    |                       |                  |                            |                                               |  |                |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472

LOCATION: N 4860234.20; E 634189.57

**RECORD OF BOREHOLE: 16-8**

SHEET 1 OF 1

BORING DATE: February 29, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                       | SOIL PROFILE                                                                                                                   |                                                                                                                             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |                                                                     | DESCRIPTION                                                                                                                    | STRATA PLOT                                                                                                                 | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 0                     |                                                                     | GROUND SURFACE                                                                                                                 |                                                                                                                             | 183.22                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       | CME-85 TRUCK MOUNTED - POWER AUGER<br>100 mm O.D. Solid Stem Augers | TOPSOIL                                                                                                                        |                                                                                                                             | 0.00                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            | Concrete                                      |                  |                  |
|                       |                                                                     | (CL-ML) Sandy CLAYEY SILT, trace gravel; light brown to brown, oxidation staining; cohesive, w~PL to w>PL, stiff to very stiff |                                                                                                                             | 182.97                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               | March 11, 2016   |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             | 0.25                  | 1       | SS   | 12         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 1                     |                                                                     |                                                                                                                                |                                                                                                                             |                       |         | 2    | SS         | 13                                            |    |    |    |                                    |        |            |        |                            |                                               | Bentonite        |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         | 3    | SS         | 22                                            |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 2                     |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                | (SM/ML) SILTY SAND to Sandy SILT, some gravel, some cohesive fines; grey (TILL); non-cohesive, moist, compact to very dense |                       | 181.01  |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     | 2.21                                                                                                                           |                                                                                                                             |                       | 4       | SS   | 24         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 3                     |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  | Sand             |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      | 5          | SS                                            | 33 |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 4                     |                                                                     |                                                                                                                                |                                                                                                                             |                       | 6       | SS   | 64         |                                               |    |    |    |                                    |        |            |        |                            |                                               | MH               |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 5                     |                                                                     |                                                                                                                                |                                                                                                                             |                       | 7       | SS   | 52         |                                               |    |    |    |                                    |        |            |        |                            |                                               | Screen           |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 6                     |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               | Sand             |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       | 8       | SS   | 63         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 7                     |                                                                     | END OF BOREHOLE                                                                                                                |                                                                                                                             | 176.51                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             | 6.71                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 7                     |                                                                     | NOTE:                                                                                                                          |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     | 1. Water level measured in open borehole at a depth of 6.0 m upon drilling completion, February 29, 2016.                      |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 8                     |                                                                     | 2. Water level measured in monitoring well at a depth of 0.64 m, March 11, 2016.                                               |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 9                     |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 10                    |                                                                     |                                                                                                                                |                                                                                                                             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472

**RECORD OF BOREHOLE: 16-9**

SHEET 1 OF 1

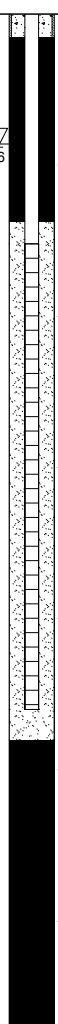
LOCATION: N 4859910.90; E 634082.19

BORING DATE: February 29, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                                                                                                                                               | SOIL PROFILE                                                                                                                                         |                                                                                   |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |        |            | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |        |                  |                                                                                      |                             |                  |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|-----------------------|--------|------------|----------------------------|-----------------------------------------------|--------|------------------|--------------------------------------------------------------------------------------|-----------------------------|------------------|
|                       |                                                                                                                                                                                             | DESCRIPTION                                                                                                                                          | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               | 20                        | 40 | 60 | 80                                 | nat V.<br>rem V.      | +<br>⊕ | Q -<br>U - |                            |                                               | ●<br>○ | 10 <sup>-6</sup> | 10 <sup>-5</sup>                                                                     | 10 <sup>-4</sup>            | 10 <sup>-3</sup> |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               | 20                        | 40 | 60 | 80                                 |                       | 10     | 20         | 30                         | 40                                            |        |                  |                                                                                      |                             |                  |
| 0                     | CME-85 TRUCK MOUNTED - POWER AUGER<br>100 mm O.D. Solid Stem Augers                                                                                                                         | GROUND SURFACE                                                                                                                                       |                                                                                   | 183.30                |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        | Concrete         |  |                             |                  |
|                       |                                                                                                                                                                                             | TOPSOIL                                                                                                                                              |  | 0.00                  | 1A      |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             | (CL-ML) Sandy CLAYEY SILT; brown, some fibrous organics; cohesive, w~PL, stiff                                                                       |  | 183.00                |         | SS   | 9                                             |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   | 0.30                  | 1B      |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             | (CL) SILTY CLAY, sandy to trace sand, varved; brown to light brown, becoming grey below a depth of 1.8 m; cohesive, w~PL to w<PL, firm to very stiff |  | 182.61                |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      | Bentonite<br>March 11, 2016 |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   | 0.69                  |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
| 1                     |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   | 2                     | SS      | 5    |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   | 3                     | SS      | 21   |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             | Sand             |
| 2                     |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       | 4                                                                                                                                                                                           |                                                                                                                                                      |                                                                                   | SS                    | 15      |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
| 3                     |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        | Screen           |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
| 4                     | (CI) SILTY CLAY, trace sand; grey; cohesive, w~PL, very stiff to hard                                                                                                                       |                                                                    | 179.57                                                                            |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  | MH                                                                                   |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      | 3.73                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      | 6                                                                                 | SS                    | 19      |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
| 5                     |                                                                                                                                                                                             |                                                                                                                                                      | 7                                                                                 | SS                    | 40      |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  | Sand                                                                                 |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
| 6                     |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        | Bentonite        |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
| 7                     | END OF BOREHOLE<br><br>NOTE:<br><br>1. Borehole dry upon completion of drilling, February 29, 2016.<br><br>2. Water level measured in monitoring well at a depth of 0.86 m, March 11, 2016. |                                                                                                                                                      | 176.59                                                                            |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
|                       |                                                                                                                                                                                             |                                                                                                                                                      | 6.71                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
| 8                     |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
| 9                     |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |
| 10                    |                                                                                                                                                                                             |                                                                                                                                                      |                                                                                   |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                                                                                      |                             |                  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472

LOCATION: N 4859988.01; E 633603.68

**RECORD OF BOREHOLE: 16-10**

SHEET 1 OF 1

BORING DATE: February 29, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                       | SOIL PROFILE                                                                                                                                                                                     |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |  |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s                                  |  |  |                | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                       |  |  |  |
|-----------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|--|--|--|---------------------------------------------------------------------|--|--|----------------|----------------------------|-----------------------------------------------|-----------------------|--|--|--|
|                       |                                                                     | DESCRIPTION                                                                                                                                                                                      | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | 20      40      60      80                    |  |  |  | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |  |  |  | nat V. +      Q -<br>rem V. ⊕      U -      ○                       |  |  |                |                            |                                               | WATER CONTENT PERCENT |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            | 20      40      60      80                    |  |  |  | 10      20      30      40                                          |  |  |                |                            |                                               |                       |  |  |  |
| 0                     | CME-85 TRUCK MOUNTED - POWER AUGER<br>100 mm O.D. Solid Stem Augers | GROUND SURFACE                                                                                                                                                                                   |             | 190.66                |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     | TOPSOIL                                                                                                                                                                                          |             | 0.00                  |         |      |            |                                               |  |  |  |                                                                     |  |  | Concrete       |                            |                                               |                       |  |  |  |
|                       |                                                                     | (CL-ML) Sandy CLAYEY SILT, trace gravel; light brown; cohesive, w-PL, firm to very stiff                                                                                                         |             | 190.41                |         |      |            |                                               |  |  |  |                                                                     |  |  | March 11, 2016 |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             | 0.25                  | 1       | SS   | 6          |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
| 1                     |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
| 2                     |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     | (ML) Sandy SILT to SILT and SAND, some gravel, trace to some cohesive, fines; brown, oxidation staining (TILL); non-cohesive, moist, compact                                                     |             | 188.45                |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             | 2.21                  |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
| 3                     |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     | (SM) SILTY SAND, trace gravel; brown; non-cohesive, wet, very dense                                                                                                                              |             | 187.69                |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             | 2.97                  | 5A      | SS   | 50/        |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     | (ML) Sandy SILT to SILT and SAND, some gravel, trace to some cohesive, fines; brown, becoming grey below a depth of 4.1 m, oxidation staining (TILL); non-cohesive, moist, compact to very dense |             | 187.46                | 5B      | SS   | 0.13       |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             | 3.20                  |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
| 4                     |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
| 5                     |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
| 6                     |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     | - Auger grinding on probable cobbles and boulders at a depth of about 5.5 m                                                                                                                      |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |
|                       |                                                                     |                                                                                                                                                                                                  |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |                |                            |                                               |                       |  |  |  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE GPJ GAL-MIS.GDT 4/18/16



PROJECT: 1413472

**RECORD OF BOREHOLE: 16-11**

SHEET 1 OF 1

LOCATION: N 4859797.82; E 634643.69

BORING DATE: February 25, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                       | SOIL PROFILE                                                                                                                                                |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                  |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                     | DESCRIPTION                                                                                                                                                 | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH                                |    |                                  |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                     |                                                                                                                                                             |             |                       |         |      |            | Cu, kPa                                       |    | nat V. + Q - ●<br>rem V. ⊕ U - ○ |    | Wp   — W —   WI                    |                  |                  |                  |                            |                                               |
|                       |                                                                     |                                                                                                                                                             |             |                       |         |      |            | 20                                            | 40 | 60                               | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                     | GROUND SURFACE                                                                                                                                              |             | 181.20                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 0                     | CME-85 TRUCK MOUNTED - POWER AUGER<br>100 mm O.D. Solid Stem Augers | TOPSOIL                                                                                                                                                     |             | 0.00                  |         |      |            |                                               |    |                                  |    |                                    |                  |                  | Concrete         |                            |                                               |
|                       |                                                                     | (CL-ML) Sandy CLAYEY SILT; light brown, mottled grey, trace fibrous organics; cohesive, w>PL, firm to stiff                                                 |             | 0.10                  | 1       | SS   | 6          |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                     |                                                                                                                                                             |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                     |                                                                                                                                                             |             |                       | 2       | SS   | 13         |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                     | (CL-ML) CLAYEY SILT, some sand; brown to grey; cohesive, w<PL, stiff                                                                                        |             | 179.75                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                     | - 80 mm sand seam at a depth of 1.8 m                                                                                                                       |             | 1.45                  | 3       | SS   | 15         |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                     |                                                                                                                                                             |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                     |                                                                                                                                                             |             |                       | 4       | SS   | 13         |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                     |                                                                                                                                                             |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                     |                                                                                                                                                             |             |                       | 5       | SS   | 10         |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                     | (SM) SILTY SAND, gravelly to some gravel, trace to some cohesive fines; grey, contains crushed rock fragments (TILL); non-cohesive, moist, compact to dense |             | 177.47                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                     |                                                                                                                                                             |             | 3.73                  | 6       | SS   | 30         |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                                     |                                                                                                                                                             |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                     |                                                                                                                                                             |             |                       | 7       | SS   | 43         |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                                     |                                                                                                                                                             |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                     |                                                                                                                                                             |             |                       | 8       | SS   | 36         |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                     | END OF BOREHOLE                                                                                                                                             |             | 174.49                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                                     | NOTE:<br><br>1. Water level measured in monitoring well at a depth of 3.33 m, March 11, 2016.                                                               |             | 6.71                  |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                                     |                                                                                                                                                             |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                                     |                                                                                                                                                             |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                                     |                                                                                                                                                             |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472

LOCATION: N 4860771.27; E 634894.00

**RECORD OF BOREHOLE: 16-12**

SHEET 1 OF 3

BORING DATE: February 25, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                   |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                       |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|-----------------------|------------------|----------------------------|-----------------------------------------------|
|                       |               | DESCRIPTION                                                                                                                                    | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa |    | WATER CONTENT PERCENT              |    | WATER CONTENT PERCENT |                  |                            |                                               |
|                       |               |                                                                                                                                                |             |                       |        |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> |                            |                                               |
| 0                     |               | GROUND SURFACE                                                                                                                                 |             | 190.11                |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
|                       |               | TOPSOIL                                                                                                                                        |             | 0.00                  |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
|                       |               | (SM/ML) SAND and SILT to Sandy SILT,<br>some gravel, trace to some cohesive<br>finer; grey (TILL); non-cohesive, moist,<br>dense to very dense |             | 189.88                | 1      | SS                                            | 4          |                           |    |                                    |    |                       |                  |                            |                                               |
|                       |               |                                                                                                                                                |             | 0.23                  |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 1                     |               |                                                                                                                                                |             |                       | 2      | SS                                            | 45         |                           |    |                                    |    |                       |                  |                            |                                               |
|                       |               | - Auger grinding on probable<br>cobbles/boulders at a depth of 1.2 m                                                                           |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 2                     |               |                                                                                                                                                |             |                       | 3      | SS                                            | 48         |                           |    |                                    |    |                       |                  |                            |                                               |
|                       |               |                                                                                                                                                |             |                       | 4      | SS                                            | 49         |                           |    |                                    |    |                       |                  |                            |                                               |
| 3                     |               |                                                                                                                                                |             |                       | 5      | SS                                            | 32         |                           |    |                                    |    |                       |                  |                            |                                               |
|                       |               |                                                                                                                                                |             |                       | 6      | SS                                            | 38         |                           |    |                                    |    |                       |                  |                            |                                               |
| 4                     |               |                                                                                                                                                |             |                       | 7      | SS                                            | 40         |                           |    |                                    |    |                       |                  |                            |                                               |
|                       |               |                                                                                                                                                |             |                       | 8      | SS                                            | 35         |                           |    |                                    |    |                       |                  |                            |                                               |
| 5                     |               |                                                                                                                                                |             |                       | 9      | SS                                            | 46         |                           |    |                                    |    |                       |                  |                            |                                               |
|                       |               |                                                                                                                                                |             |                       | 10     | SS                                            | 63         |                           |    |                                    |    |                       |                  |                            |                                               |
| 6                     |               |                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 7                     |               |                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 8                     |               |                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 9                     |               |                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 10                    |               |                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |

CONTINUED NEXT PAGE

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472

**RECORD OF BOREHOLE: 16-12**

SHEET 2 OF 3

LOCATION: N 4860771.27; E 634894.00

BORING DATE: February 25, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                        | SOIL PROFILE                                                                                               |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                |    |                 | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |                  |  |  |
|-----------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|----------------|----|-----------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|------------------|--|--|
|                       |                                                                      | DESCRIPTION                                                                                                | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH |    |                 |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |  |                  |  |  |
|                       |                                                                      |                                                                                                            |             |                       |         |      |                                               | Cu, kPa        |    | nat V. + rem V. |                                    | Q - U                 |                  | Wp   — W —   Wi  |                            |                                               |  |                  |  |  |
|                       |                                                                      |                                                                                                            |             |                       |         |      |                                               | 20             | 40 | 60              | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               |  | 10 <sup>-3</sup> |  |  |
| 10                    | CME-85 TRUCK MOUNTED - POWER AUGER<br>200 mm O.D. Hollow Stem Augers | --- CONTINUED FROM PREVIOUS PAGE ---                                                                       |             | 179.90                |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
|                       |                                                                      | (Cl) SILTY CLAY, trace to some sand, varved; grey; cohesive, w>PL, stiff to hard                           |             | 10.21                 |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
| 11                    |                                                                      |                                                                                                            |             | 11                    | SS      | 37   |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
|                       |                                                                      |                                                                                                            |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
| 12                    |                                                                      |                                                                                                            |             | 12                    | SS      | 45   |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
|                       |                                                                      |                                                                                                            |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
| 13                    |                                                                      |                                                                                                            |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
| 14                    |                                                                      |                                                                                                            |             | 13                    | SS      | 27   |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
|                       |                                                                      |                                                                                                            |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
| 15                    |                                                                      |                                                                                                            |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
| 16                    |                                                                      |                                                                                                            |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
| 17                    |                                                                      | - 50 mm sand seam at a depth of 16.9 m                                                                     |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
|                       |                                                                      |                                                                                                            |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
| 18                    |                                                                      |                                                                                                            |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
|                       |                                                                      |                                                                                                            |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
| 19                    |                                                                      | END OF BOREHOLE                                                                                            |             | 171.21                |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
|                       |                                                                      | NOTE:                                                                                                      |             | 18.90                 |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
|                       |                                                                      | 1. Water level measured in monitoring well A at a depth of -0.70 m (above ground surface), March 11, 2016. |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
| 20                    |                                                                      | 2. Water level measured in monitoring                                                                      |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |
|                       |                                                                      | CONTINUED NEXT PAGE                                                                                        |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                               |  |                  |  |  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472  
LOCATION: N 4860771.27; E 634894.00

# RECORD OF BOREHOLE: 16-12

SHEET 3 OF 3  
DATUM: Geodetic

BORING DATE: February 25, 2016

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                            |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                      |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|-----------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|--------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                             | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                  |                            |                                               |                  |
|                       |               |                                                                                         |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |               |                                                                                         |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10                                   | 20               | 30               |                            |                                               | 40               |
| 20                    |               | --- CONTINUED FROM PREVIOUS PAGE ---<br>well B at a depth of 0.41 m, March 11,<br>2016. |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 21                    |               |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 22                    |               |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 23                    |               |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 24                    |               |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 25                    |               |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 26                    |               |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 27                    |               |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 28                    |               |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 29                    |               |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 30                    |               |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |

DEPTH SCALE  
1 : 50



LOGGED: DM  
CHECKED: OS

PROJECT: 1413472

LOCATION: N 4860121.00; E 635100.28

**RECORD OF BOREHOLE: 16-13**

SHEET 1 OF 2

BORING DATE: February 22, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                                    | SOIL PROFILE                                                                                                                                                 |                                                                                                                                           |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |  |
|-----------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|--|
|                       |                                                                                  | DESCRIPTION                                                                                                                                                  | STRATA PLOT                                                                                                                               | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    | Wp — W — WI           |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      | 20                                            | 40                        | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup>      | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 0                     |                                                                                  | GROUND SURFACE                                                                                                                                               |                                                                                                                                           | 184.14                |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       | CME-46 TRUCK MOUNTED - POWER AUGER<br>110 mm I.D. 200 mm O.D. Hollow Stem Augers | TOPSOIL                                                                                                                                                      |                                                                                                                                           | 0.00                  | 1A      |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  | (CL-ML) Sandy SILTY CLAY to CLAYEY SILT, trace gravel; brown to brown mottled grey, fibrous organics, oxidation staining; cohesive, w-PL, firm to very stiff |                                                                                                                                           | 0.08                  | 1B      | SS   | 6                                             |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 1                     |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       | 2       | SS   | 16                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       | 3       | SS   | 21                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 2                     |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              | (SP) SAND, trace fines; grey; non-cohesive, moist to wet, compact                                                                         |                       | 181.93  |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       | 2.21    | 4A   |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              | (ML/SM) Sandy SILT to SILTY SAND, gravelly to some gravel, trace to some cohesive fines; grey (TILL); non-cohesive, moist to wet, compact |                       | 181.55  | 4B   | SS                                            | 15                        |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       | 2.59    |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 3                     |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       | 5       | SS   | 22                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 4                     |                                                                                  |                                                                                                                                                              | - Auger grinding on probable cobbles/boulders at a depth of 3.8 m                                                                         |                       |         | 6    | SS                                            | 18                        |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              | - Auger grinding on probable cobbles/boulders at a depth of 4.6 m                                                                         |                       |         | 7    | SS                                            | 22                        |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 5                     |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 6                     |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           | 177.89                | 8A      |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  | (SM) SILTY SAND; grey; non-cohesive, wet, compact                                                                                                            |                                                                                                                                           | 6.25                  | 8B      | SS   | 17                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           | 177.49                | 8C      |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  | (SM) SILTY SAND, trace to some gravel, trace cohesive fines; grey (TILL); moist to wet, compact to dense                                                     |                                                                                                                                           | 6.65                  |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  | - Auger grinding on probable cobbles/boulders from depths of 6.9 m to 7.5 m                                                                                  |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 7                     |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       | 9       | SS   | 32                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 8                     |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           | 175.45                |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  | (ML) Sandy SILT; grey; non-cohesive, wet, loose                                                                                                              |                                                                                                                                           | 8.69                  |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 9                     |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       | 10A     | SS   | 9                                             |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       | 10B     |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
| 10                    |                                                                                  |                                                                                                                                                              |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |
|                       |                                                                                  | CONTINUED NEXT PAGE                                                                                                                                          |                                                                                                                                           |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472  
LOCATION: N 4860121.00; E 635100.28

# RECORD OF BOREHOLE: 16-13

SHEET 2 OF 2  
DATUM: Geodetic

BORING DATE: February 22, 2016

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                                                                                                                                                                                                                                                                                                                                                                                      | SOIL PROFILE                                                                                                                             |             |                       | SAMPLES |             | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                      | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                       | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |    |   |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|-------------|-----------------------------------------------|---------------------------|----|----------------------|------------------------------------|------------------|------------------|-----------------------|----------------------------|-----------------------------------------------|------------------|----|---|
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    | DESCRIPTION                                                                                                                              | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE        | BLOWS/0.3m                                    |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             |                       |         |             |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V. +<br>rem V. ⊕ |                                    | Q - ●<br>U - ○   |                  | WATER CONTENT PERCENT |                            |                                               |                  |    |   |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             |                       |         |             |                                               | 20                        | 40 | 60                   | 80                                 | 10 <sup>-6</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup>      |                            |                                               | 10 <sup>-3</sup> | Wp | W |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             |                       |         |             |                                               | 20                        | 40 | 60                   | 80                                 | 10               | 20               | 30                    | 40                         |                                               |                  |    |   |
| 10                    | CME-85 TRUCK MOUNTED - POWER AUGER<br>110 mm I.D. 200 mm O.D. Hollow Stem Augers                                                                                                                                                                                                                                                                                                                                                   | --- CONTINUED FROM PREVIOUS PAGE ---                                                                                                     |             |                       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    | (SM) SILTY SAND trace to some gravel;<br>trace cohesive fines; grey (TILL);<br>non-cohesive, moist, dense                                |             | 173.93<br>10.21       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
| 11                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             | 11                    | SS      | 38          |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    | (SM) SILTY SAND, some gravel; grey;<br>non-cohesive, wet, loose                                                                          |             | 172.41<br>11.73       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
| 12                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             | 12                    | SS      | 5           |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    | (SW) SAND, trace gravel; grey;<br>non-cohesive, wet, very dense<br>- Auger grinding on probable<br>cobbles/boulders at a depth of 13.6 m |             | 170.88<br>13.26       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
| 13                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             |                       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
| 14                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             | 13                    | SS      | 56          |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    | (ML) Sandy SILT to SILT and SAND;<br>grey; non-cohesive, moist to wet, very<br>dense                                                     |             | 169.81<br>14.33       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
| 15                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             |                       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
| 16                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             | 14                    | SS      | 80          |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             |                       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
| 17                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             | 15                    | SS      | 94/<br>0.28 |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    | END OF BOREHOLE                                                                                                                          |             | 166.94<br>17.20       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
| 18                    | NOTE:<br>1. Water level measured in hollow stems<br>at a depth of 3.9 m after advance augers<br>to a depth of 3.8 m.<br>2. Water level measured in open<br>borehole at a depth of 7.5 m upon<br>completion of drilling, February 22, 2016.<br>3. Water level measured in monitoring<br>well A at a depth of 0.96 m, March 11,<br>2016.<br>4. Water level measured in monitoring<br>well B at a depth of 1.91 m, March 11,<br>2016. |                                                                                                                                          |             |                       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
| 19                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             |                       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |
| 20                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                          |             |                       |         |             |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |                  |    |   |

DEPTH SCALE

1 : 50



LOGGED: DM  
CHECKED: OS

LOCATION: N 4859941.64; E 634905.52

**RECORD OF BOREHOLE: 16-14**

SHEET 1 OF 2

BORING DATE: February 26, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

[illegible]

DEPTH SCALE

1 : 50

LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK\_GOLF\_COURSE\02\_DATA\GINT\1413472\_FROM\_RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472  
LOCATION: N 4859941.64; E 634905.52

# RECORD OF BOREHOLE: 16-14

SHEET 2 OF 2  
DATUM: Geodetic

BORING DATE: February 26, 2016

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                                            | SOIL PROFILE                                                                                                                                          |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                                  |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |  |  |
|-----------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|----------------------------------|----|----|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|--|--|
|                       |                                                                                          | DESCRIPTION                                                                                                                                           | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
|                       |                                                                                          |                                                                                                                                                       |             |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa        |    |    |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |  |  |  |
|                       |                                                                                          |                                                                                                                                                       |             |                       |         |      |                                               |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
|                       |                                                                                          |                                                                                                                                                       |             |                       |         |      |                                               | 20                               | 40 | 60 | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup>           |                                               |  |  |  |
|                       |                                                                                          |                                                                                                                                                       |             |                       |         |      |                                               | nat V. + Q - ●<br>rem V. ⊕ U - ○ |    |    |                                    | Wp   — W —   WI       |                  |                  |                            |                                               |  |  |  |
|                       |                                                                                          |                                                                                                                                                       |             |                       |         |      |                                               | 20                               | 40 | 60 | 80                                 | 10                    | 20               | 30               | 40                         |                                               |  |  |  |
| 10                    | CME-85 TRUCK MOUNTED - POWER AUGER<br>110 mm I.D. 200 mm O.D. Hollow Stem Augers         | --- CONTINUED FROM PREVIOUS PAGE ---<br>(SM/SW) SILTY SAND to SAND, trace<br>to some gravel, trace clay; grey;<br>non-cohesive, wet, loose to compact |             |                       |         |      |                                               |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
| 11                    |                                                                                          |                                                                                                                                                       |             |                       | 11      | SS   | 29                                            |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
| 12                    |                                                                                          |                                                                                                                                                       |             | 165.72<br>11.73       |         |      |                                               |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
| 13                    |                                                                                          |                                                                                                                                                       |             |                       | 12      | SS   | 92/<br>0.25                                   |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
| 14                    |                                                                                          |                                                                                                                                                       |             |                       | 13      | SS   | 69                                            |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
| 15                    | TRICONE<br>100 mm Diameter                                                               | (CL-ML) Sandy CLAYEY SILT, trace<br>gravel; grey (TILL); cohesive, w<PL,<br>hard                                                                      |             |                       | 14      | SS   | 50/<br>0.08                                   |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
| 16                    |                                                                                          |                                                                                                                                                       |             |                       |         |      |                                               |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
| 17                    |                                                                                          |                                                                                                                                                       |             | 160.25<br>17.20       | 15      | SS   | 95/<br>0.28                                   |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
| 18                    | END OF BOREHOLE:                                                                         |                                                                                                                                                       |             |                       |         |      |                                               |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
| 19                    | NOTE:                                                                                    |                                                                                                                                                       |             |                       |         |      |                                               |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
| 20                    | 1. Water level measured in monitoring<br>well A at a depth of 1.67 m, March 11,<br>2016. |                                                                                                                                                       |             |                       |         |      |                                               |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |
|                       | 3. Water level measured in monitoring<br>well B at a depth of 1.99 m, March 11,<br>2016. |                                                                                                                                                       |             |                       |         |      |                                               |                                  |    |    |                                    |                       |                  |                  |                            |                                               |  |  |  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02\_DATA\GINT\1413472 FROM RUNNYMEDE GPJ GAL-MIS.GDT 4/18/16



PROJECT: 1413472

# RECORD OF BOREHOLE: 16-15

SHEET 1 OF 2

LOCATION: N 4859619.51; E 634368.01

BORING DATE: March 4, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                        | SOIL PROFILE                                                                                             |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                |    |                 | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>50 mm DIAMETER<br>MONITORING WELL<br>WITH ABOVE<br>GROUND STEEL<br>CASING |                  |    |    |
|-----------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|----------------|----|-----------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------------------------------------------------------|------------------|----|----|
|                       |                                                                      | DESCRIPTION                                                                                              | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH |    |                 |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               | Cu, kPa        |    | nat V. + rem V. |                                    | Q - U                 |                  | Wp   W   Wi      |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               | 20             | 40 | 60              | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                                                                               | 10 <sup>-3</sup> | 10 | 20 |
| 0                     | CME-85 TRUCK MOUNTED - POWER AUGER<br>200 mm O.D. Hollow Stem Augers | GROUND SURFACE                                                                                           |             | 180.87                |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      | TOPSOIL                                                                                                  |             | 0.00                  |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      | (CL-ML) CLAYEY SILT, trace to some sand; grey, oxidation staining; cohesive, w<PL to w~PL, firm to stiff |             | 0.15                  | 1       | SS   | 4                                             |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
| 1                     |                                                                      |                                                                                                          |             | 2                     | SS      | 10   |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          | 3           | SS                    | 12      |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
| 2                     |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      | (CL-ML) SILTY CLAY, trace sand, trace gravel; grey; cohesive, w>PL, stiff to very soft                   |             | 178.66                |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             | 2.21                  |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             | 4                     | SS      | 11   |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
| 3                     |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          | 5           | SS                    | 5       |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
| 4                     |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      | 6                                                                                                        | SS          | WH                    |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
| 5                     |                                                                      | (SM/SW) SAND and SILT to SAND, some gravel; grey; non-cohesive, wet, loose to compact                    |             | 175.99                |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          | 4.88        |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
| 6                     |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      | - Auger grinding on probable cobbles/boulders at a depth of 6.1 m                                        |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      | (SM) SILTY SAND, trace to some gravel, some cohesive fines; grey; non-cohesive, wet, compact to dense    |             | 174.39                |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
| 7                     |                                                                      |                                                                                                          |             | 6.48                  |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
| 8                     |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      | - 150 mm sand and silt seam at a depth of 8.1 m                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
| 9                     |                                                                      | (ML-CL) Sandy CLAYEY SILT, trace gravel; grey (TILL); cohesive, w<PL, hard                               |             | 172.18                |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             | 8.69                  |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
| 10                    |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |
|                       |                                                                      |                                                                                                          |             |                       |         |      |                                               |                |    |                 |                                    |                       |                  |                  |                            |                                                                                               |                  |    |    |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

LOCATION: N 4859619.51; E 634368.01

**RECORD OF BOREHOLE: 16-15**

SHEET 2 OF 2

DATUM: Geodetic

BORING DATE: March 4, 2016

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

[illegible]

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK\_GOLF\_COURSE\02\_DATA\GINT\1413472\_FROM\_RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472

**RECORD OF BOREHOLE: 16-16**

SHEET 1 OF 2

LOCATION: N 4860097.78; E 634583.69

BORING DATE: February 22, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                        | SOIL PROFILE                                                                                                                         |                                                                                      |                       | SAMPLES        |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                                  |  |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                                                     |  |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------|----------------|------|-----------------------------------------------|----------------------------------|--|--|------------------------------------|---------------------------------------------------------------------|--|--|----------------------------|-----------------------------------------------|--|
|                       |                                                                      | DESCRIPTION                                                                                                                          | STRATA PLOT                                                                          | ELEV.<br>DEPTH<br>(m) | NUMBER         | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa        |  |  |                                    | WATER CONTENT PERCENT                                               |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               | 20 40 60 80                      |  |  |                                    | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               | nat V. + Q - ●<br>rem V. ⊕ U - ○ |  |  |                                    | Wp   — W —   Wl                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 0                     |                                                                      | GROUND SURFACE                                                                                                                       |                                                                                      | 179.60                |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  | March 11, 2016             |                                               |  |
|                       | CME-65 TRUCK MOUNTED - POWER AUGER<br>200 mm O.D. Hollow Stem Augers | TOPSOIL                                                                                                                              |                                                                                      | 0.00<br>179.40        | 1A             |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      | FILL - (CL) Sandy SILTY CLAY, some gravel; dark brown to brown; cohesive, w<PL, soft to firm                                         |                                                                                      | 0.20                  | 1B             | SS   | 8                                             |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 1                     |                                                                      |                                                                                                                                      |                                                                                      |                       |                | 2    | SS                                            | 4                                |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      | (OL) ORGANIC SILT, some sand; black                                                  |                       | 178.15<br>1.45 | 3A   | SS                                            | 13                               |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 2                     |                                                                      |                                                                                                                                      | (SW) SAND and GRAVEL, trace fines, trace gravel; brown; non-cohesive, moist, compact |                       | 177.57<br>2.03 | 3B   |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      | (SM) SILTY SAND; grey; non-cohesive, wet, loose to compact                           |                       | 177.39<br>2.21 |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                | 4    | SS                                            | 24                               |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 3                     |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                | 5    | SS                                            | 6                                |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 4                     |                                                                      |                                                                                                                                      | - 80 mm thick gravelly sand seam noted at a depth of 4.0 m                           |                       |                | 6    | SS                                            | 6                                |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      | (SW) SAND, trace silt, trace gravel; grey; non-cohesive, wet, compact                                                                |                                                                                      | 175.10<br>4.50        | 7A             |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 5                     |                                                                      |                                                                                                                                      |                                                                                      |                       | 7B             | SS   | 19                                            |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 6                     |                                                                      | (SM/ML) SAND and SILT to Sandy SILT, trace gravel, trace to some cohesive fines; grey (TILL); non-cohesive, wet to moist, very dense |                                                                                      | 173.96<br>5.64        |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       | 8              | SS   | 63                                            |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 7                     |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       | 9              | SS   | 100                                           |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 8                     |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      |                                                                                                                                      |                                                                                      |                       | 10             | SS   | 76                                            |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 9                     |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
| 10                    |                                                                      |                                                                                                                                      |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |
|                       |                                                                      | CONTINUED NEXT PAGE                                                                                                                  |                                                                                      |                       |                |      |                                               |                                  |  |  |                                    |                                                                     |  |  |                            |                                               |  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472

**RECORD OF BOREHOLE: 16-16**

SHEET 2 OF 2

LOCATION: N 4860097.78; E 634583.69

BORING DATE: February 22, 2016

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                                                        | SOIL PROFILE                                                                                                                                                                                                                                                                                                                                   |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                       |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|-----------------------|------------------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |                                                                      | DESCRIPTION                                                                                                                                                                                                                                                                                                                                    | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ●     |    | WATER CONTENT PERCENT |                  |                            |                                               |                  |                  |
|                       |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> |                            |                                               | 10 <sup>-4</sup> | 10 <sup>-3</sup> |
|                       |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 10                    | CME-35 TRUCK MOUNTED - POWER AUGER<br>200 mm O.D. Hollow Stem Augers | --- CONTINUED FROM PREVIOUS PAGE ---<br><br>- Auger grinding on probable<br>cobbles/boulders at a depth of 9.9 m and<br>at a depth of 10.2 m<br><br>(SM/GW) SILTY SAND to Sandy<br>GRAVEL, some fines; grey;<br>non-cohesive, wet, compact to very<br>dense                                                                                    |             | 169.39                |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             | 10.21                 |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 11                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       | 11     | SS                                            | 16         |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 12                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                      | - Auger grinding on probable<br>cobbles/boulders at a depth of 12.3 m<br>END OF BOREHOLE:<br><br>NOTE:<br><br>1. Water level measured in hollow stem<br>augers at a depth of 3.10 m after<br>advancing to a depth of 3.8 m.<br><br>2. Water level measured monitoring well<br>at a depth of -0.12 m (above ground<br>surface), March 11, 2016. |             | 167.26                |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             | 12.34                 | 12     | SS                                            | 50         |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 13                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 14                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 15                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 16                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 17                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 18                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 19                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 20                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: DM

CHECKED: OS

GTA-BHS 001 S:\CLIENTS\RUNNYMEDE\YORK DOWN GOLF COURSE\02 DATA\GINT\1413472 FROM RUNNYMEDE.GPJ GAL-MIS.GDT 4/18/16

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-1**

BORING DATE: March 16, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                     |             | SAMPLES               |        |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|------|-----------------------------------------------|---------------------------|----|----------------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |                                                                | DESCRIPTION                                                                                      | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE | BLOWS/0.3m                                    |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q - ●<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               | 20                        | 40 | 60                               | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 0                     |                                                                | GROUND SURFACE                                                                                   |             | 181.56                |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                          |             | 0.00                  |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                | (SC) CLAYEY SAND, trace gravel; dark brown, organic matter, rootlets; non-cohesive, moist, loose |             | 181.32                |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             | 0.24                  | 1      | SS   | 10                                            |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 1                     |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                  |             |                       |        |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: SEMP

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-1

BORING DATE: March 16, 2017

SHEET 2 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                                                                                                 |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |             |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                                      |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-----------------------------------------------|-------------|---------------------------|----|------------------------------------|----|--------------------------------------|------------------|----------------------------|-----------------------------------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                                                                                                  | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m  | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. U -         |    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                            |                                               |
|                       |               |                                                                                                                                                                                                                                                                              |             |                       |        |                                               |             | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> |                            |                                               |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —<br>(CL-ML) SILTY CLAY to CLAYEY SILT,<br>trace sand, trace gravel; grey, (TILL);<br>cohesive, w<PL, hard                                                                                                                                    |             | 170.76<br>10.81       | 10     | SS                                            | 50/<br>0.13 |                           |    |                                    |    |                                      |                  |                            |                                               |
| 11                    |               | END OF BOREHOLE                                                                                                                                                                                                                                                              |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |
| 12                    |               | Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 1.5 m below ground<br>surface.<br><br>2. Borehole open upon completion of<br>drilling.<br><br>3. Groundwater measured at a depth of<br>1.89 m below ground surface upon<br>completion of drilling. |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |
| 13                    |               |                                                                                                                                                                                                                                                                              |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |
| 14                    |               |                                                                                                                                                                                                                                                                              |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |
| 15                    |               |                                                                                                                                                                                                                                                                              |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |
| 16                    |               |                                                                                                                                                                                                                                                                              |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |
| 17                    |               |                                                                                                                                                                                                                                                                              |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |
| 18                    |               |                                                                                                                                                                                                                                                                              |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |
| 19                    |               |                                                                                                                                                                                                                                                                              |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |
| 20                    |               |                                                                                                                                                                                                                                                                              |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |

DEPTH SCALE  
1 : 50



LOGGED: PT  
CHECKED: SEMP

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-2

BORING DATE: March 16, 2017

SHEET 1 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                               |                                                                                     |                       | SAMPLES  |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------|----------|------|------------|-----------------------------------------------|----|--------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                                                                | STRATA PLOT                                                                         | ELEV.<br>DEPTH<br>(m) | NUMBER   | TYPE | BLOWS/0.3m |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - ⊖ |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            | 20                                            | 40 | 60                             | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            | 20                                            | 40 | 60                             | 80 | 10                                 | 20               | 30               | 40               |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                                                             |                                                                                     | 180.53                |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                                                                    |    | 0.00<br>180.32        |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (CL) sandy SILTY CLAY, some gravel;<br>brown, organic matter, rootlets;<br>cohesive, w~PL, firm                                            |    | 0.21                  | 1        | SS   | 5          |                                               |    |                                |    |                                    |                  | ○                |                  |                            |                                               |
|                       |                                                                | (CL-ML) sandy SILTY CLAY to sandy<br>CLAYEY SILT, some to trace gravel;<br>brown to grey, (TILL); cohesive, w~PL to<br>w<PL, stiff to hard |    | 179.85<br>0.69        |          |      |            |                                               |    |                                |    |                                    |                  | ○                |                  |                            |                                               |
| 1                     |                                                                |                                                                                                                                            |                                                                                     |                       | 2        | SS   | 12         |                                               |    |                                |    |                                    |                  | ○                |                  |                            |                                               |
|                       |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | -becoming grey at 1.5 m depth                                                                                                              |    |                       | 3        | SS   | 17         |                                               |    |                                |    |                                    |                  | ○                |                  |                            |                                               |
| 2                     |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                            |                                                                                     |                       |          | 4    | SS         | 14                                            |    |                                |    |                                    |                  |                  | ○                |                            |                                               |
| 3                     |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                            |                                                                                     |                       |          | 5    | SS         | 34                                            |    |                                |    |                                    |                  | ○                |                  |                            |                                               |
| 4                     |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                            |                                                                                     |                       |          | 6    | SS         | 66                                            |    |                                |    |                                    |                  | ○                |                  |                            |                                               |
| 5                     |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                            |                                                                                     |                       |          | 7    | SS         | 38                                            |    |                                |    |                                    |                  | ○                |                  |                            |                                               |
| 6                     |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | -0.3 m grey sandy silt seam at 7.6 m<br>depth                                                                                              |  |                       | 8A<br>8B | SS   | 42         |                                               |    |                                |    |                                    |                  | ○<br>○           |                  |                            |                                               |
| 8                     |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (CL) SILTY CLAY, layered with thin sand<br>seams; grey; cohesive, w<PL, hard                                                               |  | 172.00<br>8.53        |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                                |                                                                                                                                            |                                                                                     |                       | 9        | SS   | 42         |                                               |    |                                |    |                                    |                  | ○                |                  |                            |                                               |
| 10                    |                                                                |                                                                                                                                            |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | CONTINUED NEXT PAGE                                                                                                                        |                                                                                     |                       |          |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE  
1 : 50



LOGGED: PT  
CHECKED: SEMP

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-2

BORING DATE: March 16, 2017

SHEET 2 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JLL/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                                                                |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                            | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                                                                 | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. U - |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |
|                       |               |                                                                                                                                                                                                                                             |             |                       |         |      |                                               | 20                        | 40 | 60                         | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —<br>(CL) SILTY CLAY, layered with thin sand<br>seams; grey; cohesive, w<PL, hard                                                                                                                            |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |
| 11                    |               |                                                                                                                                                                                                                                             |             | 169.41<br>11.13       | 10      | SS   | 37                                            |                           |    |                            |                                    |                       |                  |                  |                            |                                               |
| 12                    |               | END OF BOREHOLE<br><br>Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 7.9 m below ground<br>surface.<br><br>2. Groundwater measured at a depth of<br>10.6 m below ground surface upon<br>completion of drilling. |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |
| 13                    |               |                                                                                                                                                                                                                                             |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |
| 14                    |               |                                                                                                                                                                                                                                             |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |
| 15                    |               |                                                                                                                                                                                                                                             |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |
| 16                    |               |                                                                                                                                                                                                                                             |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |
| 17                    |               |                                                                                                                                                                                                                                             |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |
| 18                    |               |                                                                                                                                                                                                                                             |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |
| 19                    |               |                                                                                                                                                                                                                                             |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |
| 20                    |               |                                                                                                                                                                                                                                             |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |

DEPTH SCALE  
1 : 50



LOGGED: PT  
CHECKED: SEMP



LOCATION: SEE FIGURE 1

## BORING DATE: March 14, 2017

DATUM: Geodetic

14-MAR-17

1 : 50



CHECKED: EW

\\GOLDER.GDS\GAL\SUBBURY\CAD-GIS\SIM\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017 GPJ GAL-MIS.GDT 10/17/17 JLT/BTB

PROJECT: 1413472

**RECORD OF BOREHOLE: 17-3**

SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 14, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 J.LJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                            |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                      |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|--------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                             | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                  |                            |                                               |                  |
|                       |               |                                                                                                                                                                                                         |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 11                    |               | Notes:<br><br>1. Groundwater encountered during drilling at a depth of 4.6 m below ground surface.<br><br>2. Groundwater measured at a depth of 5.5 m below ground surface upon completion of drilling. |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

LOCATION: SEE FIGURE 1

## BORING DATE: March 14, 2017

DATUM: Geodetic

1 : 50



\\GOLDER.GDS\GAL\SUBBURY\CAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017 GPJ GAL-MIS.GDT 10/17/17 JLT/BTB

PROJECT: 1413472

**RECORD OF BOREHOLE: 17-4**

SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 14, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                  |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|-----------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ● |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |
|                       |               |                                                                                               |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |               | --- CONTINUED FROM PREVIOUS PAGE ---                                                          |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 10                    |               | Notes:                                                                                        |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |               | 1. Groundwater encountered during drilling at a depth of 6.1 m below ground surface.          |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 11                    |               | 2. Borehole caved to a depth of 6.1 m below ground surface upon completion of drilling.       |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |               | 3. Groundwater measured at a depth of 6.1 m below ground surface upon completion of drilling. |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-5

BORING DATE: March 15, 2017

SHEET 1 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURYCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                     |                                                                                   |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|--------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                      | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - ⊖ |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            | 20                                            | 40 | 60                             | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                | GROUND SURFACE                                                                                   |                                                                                   | 179.67                |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                                   |  | 0.00                  |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | FILL - (SP) gravelly SAND, trace silt;<br>brown, organic matter; non-cohesive,<br>moist, compact |                                                                                   | 0.12                  | 1       | SS   | 10         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (ML) sandy SILT; brown; non-cohesive,<br>wet, compact                                            | 178.99                                                                            |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  | 0.69                                                                              |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (CL) SILTY CLAY, trace sand; grey;<br>cohesive, w<PL to w>PL, firm to stiff                      | 178.30                                                                            |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  | 1.37                                                                              |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (ML-CL) SILTY CLAY to CLAYEY SILT,<br>some sand; grey, (TILL); cohesive,<br>w<PL, stiff to hard  |                                                                                   | 175.51                |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   | 4.17                  |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE  
1 : 50



LOGGED: MB  
CHECKED: EW

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-5

BORING DATE: March 15, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 J.JL/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                                                                                                        |                                                                                    |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                  |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |            |    | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |  |                  |  |                  |  |                  |  |
|-----------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|------------------|----|------------------------------------|----|------------|----|----------------------------|-----------------------------------------------|------------------|--|------------------|--|------------------|--|------------------|--|
|                       |                                                                | DESCRIPTION                                                                                                                                                                                                         | STRATA PLOT                                                                        | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            | 20                                            |    | 40               |    | 60                                 |    | 80         |    |                            |                                               | 10 <sup>-6</sup> |  | 10 <sup>-5</sup> |  | 10 <sup>-4</sup> |  | 10 <sup>-3</sup> |  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V.<br>rem V. |    | +<br>⊕                             |    | Q -<br>U - |    |                            |                                               | Wp               |  | W                |  | Wi               |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            | 20                                            | 40 | 60               | 80 |                                    | 10 | 20         | 30 | 40                         |                                               |                  |  |                  |  |                  |  |                  |  |
| 10                    | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | — CONTINUED FROM PREVIOUS PAGE —                                                                                                                                                                                    |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                | (ML-CL) SILTY CLAY to CLAYEY SILT,<br>some sand; grey, (TILL); cohesive,<br>w<PL, stiff to hard                                                                                                                     |  |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 11                    |                                                                |                                                                                                                                                                                                                     |                                                                                    | 10                    | SS      | 12   |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 12                    |                                                                | (ML) sandy SILT; grey; non-cohesive,<br>wet, compact to very dense                                                                                                                                                  |                                                                                    | 168.02<br>11.66       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       | 11      | SS   | 17         |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 13                    |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 14                    |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       | 12      | SS   | 72         |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                | END OF BOREHOLE                                                                                                                                                                                                     |                                                                                    | 165.50<br>14.17       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                | Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 7.6 m below ground<br>surface.<br><br>2. Groundwater measured at a depth of<br>5.6 m below ground surface upon<br>completion of drilling. |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 15                    |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 16                    |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 17                    |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 18                    |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 19                    |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 20                    |                                                                |                                                                                                                                                                                                                     |                                                                                    |                       |         |      |            |                                               |    |                  |    |                                    |    |            |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-6**

BORING DATE: March 13, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                  |                                                                                                   |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                   | STRATA PLOT                                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            | 20                                            | 40 | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            | nat V. + Q - ●                                |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            | rem V. ⊕ U - ○                                |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                |                                                                                                   | 182.34                |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                                |                                                                                                   | 0.00                  |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   | 181.99                | 1       | SS   | 8          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | FILL - (SM) SILTY SAND; dark brown,<br>organic matter, rottlets; cohesive, moist,<br>loose    |                                                                                                   | 0.35                  |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   | 181.66                |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | FILL - (SP/GP) SAND and GRAVEL,<br>trace fines; brown; non-cohesive, wet,<br>compact to dense |                                                                                                   | 0.69                  |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                |                                                                                               |                                                                                                   |                       | 2       | SS   | 21         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       | 3       | SS   | 30         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               | (CL) SILTY CLAY, trace sand, trace<br>gravel; grey; cohesive, w~PL to w>PL,<br>stiff to very soft |                       | 180.21  |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       | 2.13    | 4    | SS         | 11                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       | 5       | SS   | 8          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       | 6       | SS   | 1          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                               |                                                                                                   |                       |         |      |            | </                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: SEMP

LOCATION: SEE FIGURE 1

## BORING DATE: March 13, 2017

DATUM: Geodetic

STATA-BHS 001 \\GOLDERGPS\GAL\SUDBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017 GPJ GAL-MIS.GDT 10/17/17 JUL17B

1 : 50



CHECKED: SEMP



PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-7**

BORING DATE: March 16, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                       |                                                                                                                               |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                                        | STRATA PLOT                                                                                                                   | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            | 20                                            | 40 | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            | nat V. + Q - ●<br>rem V. ⊕ U - ○              |    |    |    | Wp — W — Wi                        |                  |                  |                  |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                                     |                                                                                                                               | 180.08                |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                                            |                                                                                                                               | 0.00                  |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (SM) SILTY SAND to gravelly SAND, silty clay pockets; brown, oxidation staining; non-cohesive, moist to wet, loose |                                                                                                                               | 0.15                  | 1       | SS   | 7          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                |                                                                                                                    |                                                                                                                               |                       | 2       | SS   | 9          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (CL) SILTY CLAY, trace sand; grey, layered; cohesive, w~PL to w>PL, stiff                                          |                                                                                                                               | 178.71                |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                    |                                                                                                                               | 1.37                  | 3       | SS   | 12         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                |                                                                                                                    |                                                                                                                               |                       | 4       | SS   | 15         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                    |                                                                                                                               |                       | 5       | SS   | 10         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                |                                                                                                                    | (CL-ML) sandy CLAYEY SILT to sandy SILTY CLAY, trace to some gravel; grey, (TILL); cohesive, w~PL to w>PL, very stiff to hard |                       | 176.05  |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                    |                                                                                                                               | 4.04                  | 6       | SS   | 46         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                    |                                                                                                                               |                       | 7       | SS   | 63         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                                |                                                                                                                    |                                                                                                                               |                       | 8       | SS   | 15         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                    |                                                                                                                               |                       | 9       | SS   | 13         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                                |                                                                                                                    |                                                                                                                               |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | CONTINUED NEXT PAGE                                                                                                |                                                                                                                               |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |

16-MAR-17

CONTINUED NEXT PAGE

16-MAR-17

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: SEMP

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-7

BORING DATE: March 16, 2017

SHEET 2 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURYCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                                                                                                        |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |                      |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |  |                       |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |  |                  |  |                  |  |                  |  |
|-----------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|--|----------------------|--|------------------------------------|--|-----------------------|--|----------------------------|-----------------------------------------------|------------------|--|------------------|--|------------------|--|------------------|--|
|                       |                                                                | DESCRIPTION                                                                                                                                                                                                         | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            | 20                                            |  | 40                   |  | 60                                 |  | 80                    |  |                            |                                               | 10 <sup>-6</sup> |  | 10 <sup>-5</sup> |  | 10 <sup>-4</sup> |  | 10 <sup>-3</sup> |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |  | nat V. +<br>rem V. ⊕ |  | Q - ●<br>U - ○                     |  | WATER CONTENT PERCENT |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  | Wp ——— W ——— WI       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 10                    |                                                                | --- CONTINUED FROM PREVIOUS PAGE ---                                                                                                                                                                                |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | (SM) SILTY SAND; grey; non-cohesive,<br>wet, very loose                                                                                                                                                             |             | 169.95                |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             | 10.13                 |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 11                    |                                                                | (SP) SAND, some fines, trace gravel;<br>grey; non-cohesive, wet, compact                                                                                                                                            |             | 169.03                | 10      | SS   | 1          |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             | 11.05                 |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 12                    |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       | 11      | SS   | 19         |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                | END OF BOREHOLE                                                                                                                                                                                                     |             | 167.43                |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             | 12.65                 |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 13                    |                                                                | Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 1.5 m below ground<br>surface.<br><br>2. Groundwater measured at a depth of<br>9.0 m below ground surface upon<br>completion of drilling. |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 14                    |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 15                    |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 16                    |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 17                    |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 18                    |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 19                    |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 20                    |                                                                |                                                                                                                                                                                                                     |             |                       |         |      |            |                                               |  |                      |  |                                    |  |                       |  |                            |                                               |                  |  |                  |  |                  |  |                  |  |

DEPTH SCALE

1 : 50



LOGGED: MB  
CHECKED: SEMP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-8**

BORING DATE: March 16, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                   |             |                       | SAMPLES |      |             | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-------------|-----------------------------------------------|----|--------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                                                    | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m  |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       |         |      |             | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - ● |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       |         |      |             | 20                                            | 40 | 60                             | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                                                 |             | 180.90                |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                                                                 |             | 0.00<br>0.09          |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (SM) SILTY SAND, some gravel to<br>gravelly; brown, oxidation staining, silty<br>clay pockets; non-cohesive, moist,<br>compact |             | 180.22<br>0.69        | 1       | SS   | 16          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                |                                                                                                                                |             |                       | 2       | SS   | 10          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       | 3       | SS   | 16          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                |                                                                                                                                |             | 178.77<br>2.13        |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (CL) SILTY CLAY; grey; cohesive, w>PL,<br>firm to very stiff                                                                   |             |                       | 4       | SS   | 10          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                |                                                                                                                                |             |                       | 5       | SS   | 17          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                                | (CL-ML) sandy CLAYEY SILT to sandy<br>SILTY CLAY, some gravel; grey, (TILL);<br>cohesive, w~PL to w>PL, hard                   |             | 175.34<br>5.56        |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       | 7       | SS   | 50/<br>0.13 |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                                |                                                                                                                                |             |                       | 8       | SS   | 38          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                                |                                                                                                                                |             |                       | 9       | SS   | 45          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                                | END OF BOREHOLE                                                                                                                |             | 171.30<br>9.60        |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | CONTINUED NEXT PAGE                                                                                                            |             |                       |         |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

  
16-MAR-17

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-8**

BORING DATE: March 16, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UDBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                 |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                      |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|--------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----------------------------------|------------------------------------|--------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                                  | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ● ○ |                                    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                  |                            |                                               |                  |
|                       |               |                                                                                                              |             |                       |         |      |                                               | 20                        | 40 | 60                               | 80                                 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —                                                                             |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
|                       |               | Note:<br>1. Groundwater measured at a depth of<br>8.1 m below ground surface upon<br>completion of drilling. |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 11                    |               |                                                                                                              |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                                              |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                                              |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                                              |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                                              |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                                              |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                                              |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                                              |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                                              |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                                              |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-9**

BORING DATE: March 17, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                             |                                                                                     |                                                                                   | SAMPLES        |             |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------|-------------|------------|-----------------------------------------------|----|--------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                              | STRATA PLOT                                                                         | ELEV.<br>DEPTH<br>(m)                                                             | NUMBER         | TYPE        | BLOWS/0.3m |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - ● |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            | 20                                            | 40 | 60                             | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            | 20                                            | 40 | 60                             | 80 | 10                                 | 20               | 30               | 40               |                            |                                               |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | GROUND SURFACE                                                                           |                                                                                     | 183.31                                                                            |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | FILL - TOPSOIL                                                                           |    | 0.00<br>183.10                                                                    |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | FILL - (CL) sandy SILTY CLAY; dark brown, organic matter, rootlets; cohesive, w>PL, firm |    | 0.21                                                                              | 1              | SS          | 9          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (ML) sandy CLAYEY SILT, some gravel; brown, (TILL); cohesive, w<PL, stiff to very stiff  |    | 182.63<br>0.69                                                                    |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                |                                                                                          |                                                                                     |                                                                                   | 2              | SS          | 14         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     |                                                                                   | 3              | SS          | 25         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          | -becoming grey at 2.1 m depth                                                       |                                                                                   |                | 4           | SS         | 18                                            |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                |                                                                                          | (SM) SILTY SAND; grey; non-cohesive, wet, loose to compact                          |  | 180.42<br>2.90 |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     | 5                                                                                 | SS             | 6           |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     | 6A                                                                                | SS             | 21          |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                                | (CL) SILTY CLAY; grey; cohesive, w<PL to w~PL, very stiff to hard                        |  | 178.44<br>4.88                                                                    | 6B             |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     | 7                                                                                 | SS             | 17          |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                                |                                                                                          |                                                                                     | 8                                                                                 | SS             | 80          |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                          |                                                                                     | 9                                                                                 | SS             | 50/<br>0.15 |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                                |                                                                                          |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | CONTINUED NEXT PAGE                                                                      |                                                                                     |                                                                                   |                |             |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-9**

BORING DATE: March 17, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 J.JL/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                        |             |                       | SAMPLES    |      |             | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------|-----------------------|------------|------|-------------|-----------------------------------------------|----|--------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                         | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER     | TYPE | BLOWS/0.3m  |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - ⊙ |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             | 20                                            | 40 | 60                             | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             | 20                                            | 40 | 60                             | 80 | 10                                 | 20               | 30               | 40               |                            |                                               |
| 10                    |                                                                | -- CONTINUED FROM PREVIOUS PAGE --                                                                  |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | (CL) SILTY CLAY; grey; cohesive, w<PL<br>to w~PL, very stiff to hard                                |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 11                    |                                                                |                                                                                                     |             | 172.43<br>10.88       | 10A<br>10B | SS   | 82/<br>0.28 |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 12                    |                                                                |                                                                                                     |             |                       | 11         | SS   | 90/<br>0.25 |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 13                    |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 14                    |                                                                |                                                                                                     |             | 169.35<br>13.96       | 12         | SS   | 50/<br>0.10 |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | END OF BOREHOLE                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | Notes:                                                                                              |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 15                    |                                                                | 1. Groundwater encountered during<br>drilling at a depth of 3.0 m below ground<br>surface.          |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | 2. Groundwater measured at a depth of<br>2.6 m below ground surface upon<br>completion of drilling. |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 16                    |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 17                    |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 18                    |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 19                    |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 20                    |                                                                |                                                                                                     |             |                       |            |      |             |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-10

BORING DATE: March 23, 2017

SHEET 1 OF 2  
DATUM: Geodetic

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                          |             |                       | SAMPLES |      |             | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |        |             |            | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |    |
|-----------------------|---------------|---------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-------------|-----------------------------------------------|--------|-------------|------------|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|----|
|                       |               | DESCRIPTION                                                                           | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m  |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       |         |      |             | SHEAR STRENGTH                                |        |             |            | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       |         |      |             | Cu, kPa                                       | nat V. | +<br>rem V. | Q -<br>U - | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               | Wp |
|                       |               |                                                                                       |             |                       |         |      |             | 20                                            | 40     | 60          | 80         |                                    |                  |                  |                  |                            |                                               |    |
| 0                     |               | GROUND SURFACE                                                                        |             | 195.72                |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               | (CL) sandy SILTY CLAY; brown, rootlets;<br>cohesive, w<PL, firm                       |             | 0.00                  |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       | 1       | SS   | 7           |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             | 195.24                |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               | (CL) sandy SILTY CLAY, some gravel;<br>brown (TILL); cohesive, w<PL, stiff to<br>hard |             | 0.48                  |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
| 1                     |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       | 2       | SS   | 12          |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
| 2                     |               |                                                                                       |             |                       | 3       | SS   | 21          |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       | 4       | SS   | 50/<br>0.10 |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
| 3                     |               | -oxidation staining above 2.9 m depth                                                 |             |                       | 5       | SS   | 50/<br>0.08 |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
| 4                     |               | -becoming grey below 4.0 m depth                                                      |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       | 6       | SS   | 56          |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
| 5                     |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
| 6                     |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       | 7       | SS   | 44          |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
| 7                     |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
| 8                     |               |                                                                                       |             |                       | 8       | SS   | 67/<br>0.20 |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
| 9                     |               | (SM) SILTY SAND, fine; grey;<br>non-cohesive, moist, very dense                       |             | 187.11<br>8.61        |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               |                                                                                       |             |                       | 9       | SS   | 92          |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               | END OF BOREHOLE                                                                       |             | 186.12<br>9.60        |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
| 10                    |               |                                                                                       |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |
|                       |               | CONTINUED NEXT PAGE                                                                   |             |                       |         |      |             |                                               |        |             |            |                                    |                  |                  |                  |                            |                                               |    |

DEPTH SCALE  
1 : 50



LOGGED: MB  
CHECKED: EW

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-10

SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 23, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\SUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                  |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|-----------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |
|                       |               |                                                                                               |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |               | --- CONTINUED FROM PREVIOUS PAGE ---                                                          |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 10                    |               | Note:                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |               | 1. Borehole caved to a depth of 8.8 m below ground surface upon completion of drilling.       |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 11                    |               | 2. Groundwater measured at a depth of 8.5 m below ground surface upon completion of drilling. |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW



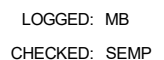
LOCATION: SEE FIGURE 1

## BORING DATE: March 23, 2017

DATUM: Geodetic

CONTINUED NEXT PAGE

1 : 50



PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-11**

BORING DATE: March 23, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURYCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                       |                 | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                       |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|-----------------------------------------------------------------|------------------------------------|-----------------|-----------------------|--------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|-----------------------|------------------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |                                                                 | DESCRIPTION                        | STRATA PLOT     | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ●     |    | WATER CONTENT PERCENT |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> |                            |                                               | 10 <sup>-4</sup> | 10 <sup>-3</sup> |
|                       |                                                                 |                                    |                 |                       |        |                                               | 20         | 40                        | 60 | 80                                 | 10 | 20                    | 30               | 40                         |                                               |                  |                  |
| 10                    | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | -- CONTINUED FROM PREVIOUS PAGE -- |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    | 188.24<br>10.13 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 11                    |                                                                 |                                    | 10              | SS                    | 8      |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
| 12                    |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |
|                       |                                                                 |                                    |                 |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: SEMP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-101

BORING DATE: March 16, 2017

SHEET 1 OF 1

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                                                                                                        |                                                                                                               |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |        |            | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |        |                  |                  |                  |                  |
|-----------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|-----------------------|--------|------------|----------------------------|-----------------------------------------------|--------|------------------|------------------|------------------|------------------|
|                       |                                                                | DESCRIPTION                                                                                                                                                                                                         | STRATA PLOT                                                                                                   | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT |        |            |                            |                                               |        |                  |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       |         |      |                                               | 20                        | 40 | 60 | 80                                 | nat V.<br>rem V.      | +<br>⊕ | Q -<br>U - |                            |                                               | ●<br>○ | 10 <sup>-6</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       |         |      |                                               | 20                        | 40 | 60 | 80                                 |                       |        | 10         | 20                         | 30                                            | 40     |                  |                  |                  |                  |
| 0                     |                                                                | GROUND SURFACE                                                                                                                                                                                                      |                                                                                                               | 191.27                |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                                                                                                                                             |                                                                                                               | 0.00                  |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
|                       |                                                                | (CL) sandy SILTY CLAY, trace gravel;<br>brown, organic matter, rootlets;<br>cohesive, w>PL, firm to stiff                                                                                                           |                                                                                                               | 0.15                  | 1       | SS   | 6                                             |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
| 1                     |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       | 2       | SS   | 10                                            |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
|                       |                                                                | (CL) SILTY CLAY, some sand, trace<br>gravel; light brown to grey, (TILL); w<PL<br>to w~PL, very stiff                                                                                                               |                                                                                                               | 189.90<br>1.37        | 3       | SS   | 22                                            |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
| 2                     |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       | 4       | SS   | 15                                            |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
| 3                     |                                                                |                                                                                                                                                                                                                     | -oxidation staining above 3.0 m depth                                                                         |                       |         | 5    | SS                                            | 18                        |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
| 4                     |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
| 5                     |                                                                |                                                                                                                                                                                                                     | - auger grinding between 4.6 m and<br>4.9 m depth on cobble or boulder.<br><br>- becoming grey at 4.9 m depth |                       |         | 6    | SS                                            | 16                        |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
| 6                     |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
| 7                     |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       | 7       | SS   | 15                                            |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
| 8                     |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       | 8       | SS   | 22                                            |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
|                       |                                                                | END OF BOREHOLE                                                                                                                                                                                                     |                                                                                                               | 183.19<br>8.08        |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
| 9                     |                                                                | Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 6.1 m below ground<br>surface.<br><br>2. Groundwater measured at a depth of<br>7.3 m below ground surface upon<br>completion of drilling. |                                                                                                               |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |
| 10                    |                                                                |                                                                                                                                                                                                                     |                                                                                                               |                       |         |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |                  |                  |                  |

16-MAR-17


  
16-MAR-17

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: AP

LOCATION: SEE FIGURE 1

## BORING DATE: March 15, 2017

DATUM: Geodetic

\\GOLDER.GDS\GAL\SUDBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017 GPJ GAL-MIS.GDT 10/17/17 JJL/TB

1 : 50



CHECKED: AP

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-103

SHEET 1 OF 1

LOCATION: SEE FIGURE 1

BORING DATE: March 16, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 J.JL/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                     |                                                                                   |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                                      | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                                   |                                                                                   | 184.75                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                                          |  | 0.00                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                | (CL) sandy CLAYEY SILT; dark brown,<br>organic matter, rootlets; cohesive, w~PL,<br>soft                         |  | 184.37<br>0.38        | 1       | SS   | 4          |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                | (SP/GP) SAND and GRAVEL, trace<br>fines; brown; non-cohesive, wet, loose                                         |  | 183.93<br>0.82        | 2A      |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 1                     |                                                                | (CL) SILTY CLAY, some sand, trace<br>gravel; brown to grey, oxidation staining;<br>cohesive, w~PL, firm to stiff |  | 0.94                  | 2B      | SS   | 7          |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 2                     |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                | (CL) SILTY CLAY, some sand, trace<br>gravel; grey, (TILL); cohesive, w>PL, stiff                                 |  | 182.62<br>2.13        |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 3                     |                                                                | (CL) sandy SILTY CLAY, trace gravel;<br>grey, (TILL); cohesive, w<PL, hard                                       |  | 181.86<br>2.90        |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 4                     |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 5                     |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       | </                                                             |                                                                                                                  |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: AP

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-104

SHEET 1 OF 1

LOCATION: SEE FIGURE 1

BORING DATE: March 15, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                    | SOIL PROFILE                                                                                                                                                       |                                                                                     |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                              |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING        | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |    |
|-----------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|------------------------------|----|------------------------------------|------------------|------------------|------------------|-----------------------------------|-----------------------------------------------|----|
|                       |                                                                  | DESCRIPTION                                                                                                                                                        | STRATA PLOT                                                                         | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - |    | WATER CONTENT PERCENT              |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            | 20                                            | 40 | 60                           | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                                   |                                               | Wp |
|                       |                                                                  | GROUND SURFACE                                                                                                                                                     |                                                                                     | 186.69                |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. - Hollow Stem Auger | TOPSOIL                                                                                                                                                            |    | 0.00<br>186.48        |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  | 50 mm Diameter<br>Monitoring Well |                                               |    |
|                       |                                                                  | (CL) sandy SILTY CLAY, trace gravel;<br>light brown; cohesive, w~PL, firm                                                                                          |    | 0.21                  | 1       | SS   | 9          |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  | (CL) sandy SILTY CLAY, trace to some<br>gravel; light brown to grey, (TILL),<br>crushed rock fragments, oxidation<br>staining; cohesive, w<PL, stiff to very stiff |    | 186.01<br>0.69        |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 1                     |                                                                  |                                                                                                                                                                    |                                                                                     |                       | 2       | SS   | 13         |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  | -auger grinding between 1.5 m and<br>4.6 m depth on cobble or boulder                                                                                              |    |                       |         | 3    | SS         | 19                                            |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 2                     |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  | (CL-ML) SILTY CLAY to CLAYEY SILT,<br>some to trace sand; grey; cohesive,<br>w~PL, stiff to very stiff                                                             |    | 184.41<br>2.29        | 4       | SS   | 19         |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 3                     |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         | 5    | SS         | 20                                            |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 4                     |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 5                     |                                                                  |                                                                                                                                                                    |                                                                                     |                       | 6       | SS   | 12         |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 6                     |                                                                  | -layered at 6.1 m depth                                                                                                                                            |  |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  |                                                                                                                                                                    |                                                                                     |                       | 7       | SS   | 13         |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
|                       |                                                                  | END OF BOREHOLE                                                                                                                                                    |                                                                                     | 180.14<br>6.55        |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 7                     |                                                                  | Note:<br><br>1. Borehole dry upon completion of<br>drilling.                                                                                                       |                                                                                     |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 8                     |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 9                     |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |
| 10                    |                                                                  |                                                                                                                                                                    |                                                                                     |                       |         |      |            |                                               |    |                              |    |                                    |                  |                  |                  |                                   |                                               |    |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: AP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

# **RECORD OF BOREHOLE: 17-105**

BORING DATE: March 15, 2017

SHEET 1 OF 1

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                        |                                                                                                                   |                                                                                   | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |                                                                | DESCRIPTION                                                                                         | STRATA PLOT                                                                                                       | ELEV.<br>DEPTH<br>(m)                                                             | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            | 20                                            | 40 | 60 | 80 |                                    | 10     | 20         | 30     | 40                         |                                               |                  |                  |
| 0                     |                                                                | GROUND SURFACE                                                                                      |                                                                                                                   | 191.96                                                                            |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                                      |                                  | 0.00<br>191.75                                                                    |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | FILL - (CL) sandy SILTY CLAY, trace gravel; brown, rootlets, organic matter; cohesive, w~PL, firm   |                                  | 0.21                                                                              | 1       | SS   | 8          |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | (CL) sandy SILTY CLAY, trace gravel; light brown, oxidation staining; cohesive, w~PL, very stiff    |                                  | 0.69                                                                              |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 1                     |                                                                |                                                                                                     |                                                                                                                   | 191.28                                                                            |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | (SM) SILTY SAND, some gravel; light brown, (TILL), oxidation staining; non-cohesive, moist, compact |                                  | 1.37                                                                              |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   | 190.59                                                                            |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 2                     |                                                                |                                                                                                     | (ML) Sandy SILT, some gravel; brown to grey, (TILL), oxidation staining; non-cohesive, moist, dense to very dense |  | 2.13    |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   | 189.83                                                                            |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 3                     |                                                                | -auger grinding between 3.0 m and 4.6 m depth on cobble o boulder                                   |                                  |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 4                     |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 5                     |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 6                     |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 7                     |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 8                     |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 8                     |                                                                | END OF BOREHOLE                                                                                     |                                                                                                                   | 183.88                                                                            |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | Note:<br><br>1. Borehole dry upon completion of drilling.                                           |                                                                                                                   | 8.08                                                                              |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 9                     |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 10                    |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                     |                                                                                                                   |                                                                                   |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: AP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-106

BORING DATE: March 17, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                      |                                                                                   |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |                  |
|-----------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|------------------|------------------|
|                       |                                                                | DESCRIPTION                                                                                       | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup> |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 0                     |                                                                | GROUND SURFACE                                                                                    |                                                                                   | 181.71                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                                    |  | 0.00                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   | 181.38                | 1A      | SS   | 7          |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                | FILL - (CL) sandy SILTY CLAY, trace gravel; brown, organic matter, rootlets; cohesive, w~PL, firm |  | 0.34                  | 1B      |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   | 181.03                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                | (CL) SILTY CLAY, some sand; brown, organic staining, rootlets; cohesive, w>PL, firm to stiff      |  | 0.69                  | 2       | SS   | 9          |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 1                     |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 2                     |                                                                | (SM) SILTY SAND; brown; non-cohesive, wet, loose to compact                                       |  | 1.92                  | 3B      |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                   |                                                                                   |                       |         |      |            |                                               |    | </ |    |                                    |        |            |        |                            |                                               |                  |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW



PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-106**

BORING DATE: March 17, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                   |                                                                                   | SAMPLES               |        |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |        |            | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |        |                  |
|-----------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|--------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|-----------------------|--------|------------|----------------------------|-----------------------------------------------|--------|------------------|
|                       |               | DESCRIPTION                                                                                                                    | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE | BLOWS/0.3m                                    |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
|                       |               |                                                                                                                                |                                                                                   |                       |        |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT |        |            |                            |                                               |        |                  |
|                       |               |                                                                                                                                |                                                                                   |                       |        |      |                                               | 20                        | 40 | 60 | 80                                 | nat V.<br>rem V.      | +<br>⊕ | Q -<br>U - |                            |                                               | ●<br>○ | 10 <sup>-6</sup> |
|                       |               |                                                                                                                                |                                                                                   |                       |        |      |                                               | 20                        | 40 | 60 | 80                                 |                       |        |            |                            |                                               |        |                  |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —<br>(CL) SILTY CLAY, some sand, trace<br>gravel; grey, (TILL); cohesive, w<PL,<br>hard         |  |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
| 11                    |               |                                                                                                                                |                                                                                   | 170.59<br>11.13       |        | 10   | SS                                            | 50/<br>0.10               |    |    |                                    |                       |        |            | ○                          |                                               |        |                  |
|                       |               | END OF BOREHOLE<br><br>Note:<br><br>1. Groundwater encountered during<br>drilling at a depth of 2.3 m below ground<br>surface. |                                                                                   |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
| 12                    |               |                                                                                                                                |                                                                                   |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
| 13                    |               |                                                                                                                                |                                                                                   |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
| 14                    |               |                                                                                                                                |                                                                                   |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
| 15                    |               |                                                                                                                                |                                                                                   |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
| 16                    |               |                                                                                                                                |                                                                                   |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
| 17                    |               |                                                                                                                                |                                                                                   |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
| 18                    |               |                                                                                                                                |                                                                                   |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
| 19                    |               |                                                                                                                                |                                                                                   |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |
| 20                    |               |                                                                                                                                |                                                                                   |                       |        |      |                                               |                           |    |    |                                    |                       |        |            |                            |                                               |        |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-107

BORING DATE: March 14, 2017

SHEET 1 OF 1  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/7B

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                                           |                                                                                                                        |                                                                                    | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |  |  |
|-----------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|--|--|
|                       |                                                                 | DESCRIPTION                                                                                                            | STRATA PLOT                                                                                                            | ELEV.<br>DEPTH<br>(m)                                                              | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 | GROUND SURFACE                                                                                                         |                                                                                                                        | 186.03                                                                             |         |      |            | 20                                            | 40 | 60 | 80 |                                    | 10 <sup>-6</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup>           |                                               |  |  |  |
| 0                     |                                                                 | TOPSOIL                                                                                                                |                                       | 0.00                                                                               |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | (CL) sandy SILTY CLAY, trace gravel;<br>light brown, oxidation staining; cohesive,<br>w~PL to w<PL, firm to very stiff |                                       | 185.82                                                                             |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        | 0.21                                                                               | 1       | SS   | 4          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
| 1                     |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    | 2       | SS   | 16         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
| 2                     |                                                                 |                                                                                                                        | (CL-ML) SILTY CLAY; grey, layered;<br>cohesive, w<PL to w~PL, stiff to very stiff<br><br>-becoming grey at 2.1 m depth |  | 183.90  |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 | 2.13                                                                                                                   |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 | 4                                                                                                                      |                                                                                                                        |                                                                                    | SS      | 16   |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
| 3                     |                                                                 | 5                                                                                                                      |                                                                                                                        |                                                                                    | SS      | 15   |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
| 4                     |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
|                       |                                                                 |                                                                                                                        |                                                                                                                        |                                                                                    |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |  |  |
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DEPTH SCALE

1 : 50



LOGGED: PT  
CHECKED: SEMP

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-108

SHEET 1 OF 1

LOCATION: SEE FIGURE 1

BORING DATE: March 14, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |                  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|                       |               | DESCRIPTION  | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       |               |              |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |                  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       |               |              |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       |               |              |             |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |        |            |        |                            |                                               |                  |                  |                  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

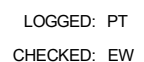
LOCATION: SEE FIGURE 1

## BORING DATE: March 15, 2017

DATUM: Geodetic

\\GOLDR.GDS\GAL\SUDBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JLT\TB

1 : 50



PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-110**

BORING DATE: March 13, 2017

SHEET 1 OF 1

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                      |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                  |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                                                       | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q - ●<br>rem V. ⊕ U - ○ |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            | 20                                            | 40 | 60                               | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            | 20                                            | 40 | 60                               | 80 | 10                                 | 20               | 30               | 40               |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                                                    |             | 183.95                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                                                                    |             | 0.00                  |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | FILL - (ML) sandy CLAYEY SILT, trace gravel; dark brown, organic matter, rootlets; non-cohesive, moist, compact to loose          |             | 183.70                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             | 0.25                  | 1       | SS   | 11         |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | FILL - (SP) gravelly SAND; brown to grey; non-cohesive, moist to wet, compact -auger grinding at 1.7 m depth on cobble or boulder |             | 182.58                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             | 1.37                  |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       | 3       | SS   | 24         |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                | (CL) SILTY CLAY, trace sand, trace gravel; brown to grey; cohesive, w>PL, stiff                                                   |             | 181.06                |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             | 2.90                  |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                   |             |                       |         |      |            |                                               |    |                                  |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: AP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-111**

BORING DATE: March 14, 2017

SHEET 1 OF 1

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                    | SOIL PROFILE                                                                                    |             |                       | SAMPLES |      |              | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |  |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s                                  |  |  |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|--------------|-----------------------------------------------|--|--|--|---------------------------------------------------------------------|--|--|--|----------------------------|-----------------------------------------------|
|                       |                                                                  | DESCRIPTION                                                                                     | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m   | SHEAR STRENGTH<br>Cu, kPa                     |  |  |  | WATER CONTENT PERCENT                                               |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             |                       |         |      |              | 20 40 60 80                                   |  |  |  | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             |                       |         |      |              | nat V. + Q -<br>rem V. ⊕ ⊖ ● ○                |  |  |  | Wp   W   Wi                                                         |  |  |  |                            |                                               |
| 0                     |                                                                  | GROUND SURFACE                                                                                  |             | 182.86                |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. - Hollow Stem Auger | FILL - TOPSOIL                                                                                  |             | 0.00                  |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             | 182.51                | 1       | SS   | 5            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  | FILL - (ML) sandy CLAYEY SILT; dark brown, organic matter, rootlets; non-cohesive, moist, loose |             | 0.36                  |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             | 182.13                |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 1                     |                                                                  | FILL - (SP) gravelly SAND, trace fines; brown; non-cohesive, wet, loose                         |             | 0.73                  |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  | (CL) SILTY CLAY, some sand, trace gravel; brown; cohesive, w~PL to w>PL, stiff to firm          |             | 0.85                  | 2       | SS   | 9            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  | -becoming grey at 1.2 m depth                                                                   |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 2                     |                                                                  |                                                                                                 |             |                       |         | 3    | SS           | 9                                             |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             |                       |         | 4    | SS           | 9                                             |  |  |  |                                                                     |  |  |  |                            |                                               |
| 3                     |                                                                  |                                                                                                 |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             |                       | 5       | SS   | 6            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 4                     |                                                                  |                                                                                                 |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             | 178.75                |         |      |              | ⊕+                                            |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  | (SM) SILTY SAND, trace gravel; grey, (TILL); non-cohesive, moist, very dense                    |             | 4.11                  |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 5                     |                                                                  |                                                                                                 |             |                       | 6       | SS   | 100/<br>0.25 |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             | 177.30                |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  | (ML-CL) SILTY CLAY to CLAYEY SILT; grey; cohesive, w~PL, hard                                   |             | 5.56                  |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 6                     |                                                                  |                                                                                                 |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             |                       | 7       | SS   | 31           |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             | 176.31                |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  | END OF BOREHOLE                                                                                 |             | 6.55                  |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 7                     |                                                                  | Notes:                                                                                          |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  | 1. Groundwater encountered during drilling at a depth of 6.1 m below ground surface.            |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  | 2. Borehole caved to a depth of 5.8 m below ground surface upon completion of drilling.         |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 8                     |                                                                  |                                                                                                 |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  | 3. Groundwater measured at a depth of 3.7 m below ground surface upon completion of drilling.   |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 9                     |                                                                  |                                                                                                 |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
|                       |                                                                  |                                                                                                 |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |
| 10                    |                                                                  |                                                                                                 |             |                       |         |      |              |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |

  
 14-MAR-17

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: AP

LOCATION: SEE FIGURE 1

## BORING DATE: March 13, 2017

DATUM: Geodetic

13-MAR-17

1 : 50



PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-113**

BORING DATE: March 14, 2017

SHEET 1 OF 1

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                                                                                                        |                                       |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |                  |
|-----------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|------------------|------------------|
|                       |                                                                | DESCRIPTION                                                                                                                                                                                                         | STRATA PLOT                           | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup> |
|                       |                                                                |                                                                                                                                                                                                                     |                                       |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |        | 10         | 20     | 30                         | 40                                            |                  |                  |                  |
| 0                     |                                                                | GROUND SURFACE                                                                                                                                                                                                      |                                       | 181.97                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                                                                                                                                                      |                                       | 0.00                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       | 181.73                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                | FILL - (SM) SILTY SAND, trace gravel;<br>brown, organic matter, rootlets;<br>non-cohesive, moist, loose                                                                                                             |                                       | 0.24                  | 1       | SS   | 5          |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       | 181.29                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                | FILL - (CL) sandy SILTY CLAY; brown,<br>oxidation staining; brown; cohesive,<br>w~PL, compact                                                                                                                       |                                       | 0.69                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 1                     |                                                                |                                                                                                                                                                                                                     |                                       | 180.60                | 2       | SS   | 11         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       | 1.37                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                | (CL) SILTY CLAY, trace sand, trace<br>gravel; grey; cohesive, w<PL to W~PL,<br>stiff                                                                                                                                |                                       |                       | 3A      | SS   | 9          |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       |                       | 3B      | SS   |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 2                     |                                                                |                                                                                                                                                                                                                     | - sand and gravel seam at 1.7 m depth |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       |                       |         | 4    | SS         | 15                                            |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 3                     |                                                                |                                                                                                                                                                                                                     |                                       |                       | 5       | SS   | 10         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 4                     |                                                                |                                                                                                                                                                                                                     |                                       |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       |                       | 6A      | SS   | 10         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 5                     |                                                                | (SP) gravelly SAND, some fines; grey;<br>non-cohesive, wet, dense                                                                                                                                                   |                                       | 177.10                | 6B      |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       | 4.88                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 6                     |                                                                |                                                                                                                                                                                                                     |                                       |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       |                       | 7       | SS   | 48         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 7                     |                                                                |                                                                                                                                                                                                                     |                                       |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                | (ML) SILT and SAND, trace gravel; grey,<br>(TILL); non-cohesive, moist, very dense                                                                                                                                  |                                       | 174.89                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       | 7.09                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 8                     |                                                                |                                                                                                                                                                                                                     |                                       |                       | 8       | SS   | 59         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                |                                                                                                                                                                                                                     |                                       | 173.90                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
|                       |                                                                | END OF BOREHOLE                                                                                                                                                                                                     |                                       | 8.08                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 9                     |                                                                | Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 1.5 m below ground<br>surface.<br><br>2. Groundwater measured at a depth of<br>1.0 m below ground surface upon<br>completion of drilling. |                                       |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |
| 10                    |                                                                |                                                                                                                                                                                                                     |                                       |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: AP



PROJECT: 1413472

## RECORD OF BOREHOLE: 17-114

SHEET 1 OF 1

LOCATION: SEE FIGURE 1

BORING DATE: March 10, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                    | SOIL PROFILE                                                                                                               |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|-----------------------|----------------|------------------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |                                                                  | DESCRIPTION                                                                                                                | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               | 20                        | 40 | 60 | 80                                 | nat V. +<br>rem V. ⊕  | Q - ●<br>U - ○ | 10 <sup>-6</sup> |                            |                                               | 10 <sup>-5</sup> | 10 <sup>-4</sup> |
|                       |                                                                  | GROUND SURFACE                                                                                                             |             | 181.41                |         |      |                                               | 20                        | 40 | 60 | 80                                 |                       | 10             | 20               | 30                         | 40                                            |                  |                  |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. - Hollow Stem Auger | FILL - TOPSOIL                                                                                                             |             | 0.00                  |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  | FILL - (SM/GP) SILTY SAND, some<br>gravel to sandy GRAVEL, trace fines;<br>brown; non-cohesive, moist, loose to<br>compact |             | 181.11                | 1       | SS   | 9                                             |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       | 0.30    |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
| 1                     |                                                                  |                                                                                                                            |             |                       | 2       | SS   | 18                                            |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  | (CL) SILTY CLAY, trace sand, trace<br>gravel; grey; cohesive, w<PL to w>PL,<br>soft to very stiff                          |             | 180.12                |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             | 1.30                  | 3       | SS   | 9                                             |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
| 2                     |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         | 4    | SS                                            | 12                        |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
| 3                     |                                                                  |                                                                                                                            |             | 5                     | SS      | 8    |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
| 4                     |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
| 5                     |                                                                  |                                                                                                                            |             | 6                     | SS      | 3    |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
| 6                     |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |
|                       |                                                                  |                                                                                                                            |             |                       |         |      |                                               |                           |    |    |                                    |                       |                |                  |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: AK

CHECKED: AP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-115**

BORING DATE: March 10, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                          |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s  |                              |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|-------------------------------------|------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                           | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT               |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V. $\oplus$<br>rem V. $\ominus$ | Q - $\bullet$<br>U - $\circ$ | 10 <sup>-6</sup> | 10 <sup>-5</sup> |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                        |             | 180.69                |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                                        |             | 0.00<br>180.51        |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                | FILL - (CL) SILTY CLAY, trace sand,<br>trace gravel; brown; cohesive, w<PL,<br>firm                   |             | 0.18                  | 1       | SS   | 7          |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 1                     |                                                                | (CL) SILTY CLAY, trace to some sand,<br>trace gravel; brown; cohesive, w<PL to<br>w>PL, firm to stiff |             | 179.88<br>0.81        | 2       | SS   | 11         |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                | -sand and silt seams between 0.8 m and<br>1.2 m depth                                                 |             |                       |         | 3    | SS         | 15                                            |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 2                     |                                                                |                                                                                                       |             |                       |         | 4    | SS         | 7                                             |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                | -becoming grey at 2.1 m depth                                                                         |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 3                     |                                                                |                                                                                                       |             |                       |         | 5    | SS         | 3                                             |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 4                     |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 5                     |                                                                |                                                                                                       |             |                       | 6       | SS   | WH         |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                | (ML) SILT and SAND, some gravel to<br>gravelly; grey, (TILL); non-cohesive,<br>moist, dense           |             | 175.66<br>5.03        |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 6                     |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 7                     |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 8                     |                                                                |                                                                                                       |             |                       | 8       | SS   | 33         |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 9                     |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                | (CL) sandy SILTY CLAY, trace gravel;<br>grey, (TILL); cohesive, w<PL, very stiff                      |             | 172.08<br>8.61        |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 9                     |                                                                |                                                                                                       |             |                       | 9       | SS   | 20         |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
| 10                    |                                                                |                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |
|                       |                                                                | CONTINUED NEXT PAGE                                                                                   |             |                       |         |      |            |                                               |    |    |    |                                     |                              |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: AP

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-115

BORING DATE: March 10, 2017

SHEET 2 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURYCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJL/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                           |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |  |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                                                     |   |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |                                      |  |  |  |  |
|-----------------------|----------------------------------------------------------------|------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|--|--|------------------------------------|---------------------------------------------------------------------|---|--|----------------------------|-----------------------------------------------|--|--------------------------------------|--|--|--|--|
|                       |                                                                | DESCRIPTION                                                            | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | 20 40 60 80               |  |  |                                    | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |   |  |                            |                                               |  |                                      |  |  |  |  |
|                       |                                                                |                                                                        |             |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |  |  |                                    | nat V. + Q - ●<br>rem V. ⊕ U - ○                                    |   |  |                            |                                               |  | WATER CONTENT PERCENT<br>Wp — W — Wi |  |  |  |  |
|                       |                                                                |                                                                        |             |                       |         |      |                                               | 20 40 60 80               |  |  |                                    | 10 20 30 40                                                         |   |  |                            |                                               |  |                                      |  |  |  |  |
| 10                    | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | — CONTINUED FROM PREVIOUS PAGE —                                       |             | 170.56<br>10.13       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |
|                       |                                                                | (SP) SAND, some fines; grey;<br>non-cohesive, wet, loose to very dense |             |                       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |
| 11                    |                                                                | - Sample 10 disturbed due to heaving<br>sand                           |             | 10                    | SS      | 6    |                                               |                           |  |  |                                    |                                                                     | ○ |  |                            |                                               |  |                                      |  |  |  |  |
| 12                    |                                                                |                                                                        |             | 11                    | SS      | 58   |                                               |                           |  |  |                                    |                                                                     | ○ |  |                            |                                               |  |                                      |  |  |  |  |
|                       |                                                                | END OF BOREHOLE                                                        |             | 168.04<br>12.65       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |
| 13                    |                                                                |                                                                        |             |                       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |
| 14                    |                                                                |                                                                        |             |                       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |
| 15                    |                                                                |                                                                        |             |                       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |
| 16                    |                                                                |                                                                        |             |                       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |
| 17                    |                                                                |                                                                        |             |                       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |
| 18                    |                                                                |                                                                        |             |                       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |
| 19                    |                                                                |                                                                        |             |                       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |
| 20                    |                                                                |                                                                        |             |                       |         |      |                                               |                           |  |  |                                    |                                                                     |   |  |                            |                                               |  |                                      |  |  |  |  |

DEPTH SCALE  
1 : 50



LOGGED: PT  
CHECKED: AP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-116**

BORING DATE: March 20, 2017

SHEET 1 OF 1

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSUB\BURYCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                           |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |                                                                | DESCRIPTION                                                                            | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> |
|                       |                                                                |                                                                                        |             |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |        | 10         | 20     | 30                         | 40                                            |                  |                  |
| 0                     |                                                                | GROUND SURFACE                                                                         |             | 180.52                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                         |             | 0.00<br>0.08          |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | FILL - (CL) sandy SILTY CLAY; brown,<br>brick fragments; cohesive, w<PL, very<br>stiff |             |                       | 1       | SS   | 22         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | FILL - (SP) gravelly SAND; brown;<br>non-cohesive, wet, loose                          |             |                       |         | 2    | SS         | 6                                             |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 1                     |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | (CL/CI) SILTY CLAY, some sand, trace<br>gravel; grey; cohesive, w~PL to w>PL,<br>stiff |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 2                     |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                        |             |                       |         |      |            |                                               |    |    |    |                                    | </     |            |        |                            |                                               |                  |                  |

  
 20-MAR-17

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: SEMP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-117**

BORING DATE: March 14, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                    |                                                                                              |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|
|                       |                                                                | DESCRIPTION                                                                     | STRATA PLOT                                                                                  | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      | 20                                            | 40                        | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup>      | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      | nat V. + Q - ●<br>rem V. ⊕ U - ○              |                           |    |    | Wp   — W —   Wi                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      | 20                                            | 40                        | 60 | 80 | 10                                 | 20                    | 30               | 40               |                            |                                               |  |
| 0                     |                                                                | GROUND SURFACE                                                                  |                                                                                              | 180.71                |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                  |                                                                                              | 0.00                  |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                | FILL - (CL) sandy SILTY CLAY; brown,<br>organic matter; cohesive, w>PL, firm    |                                                                                              | 0.15                  | 1       | SS   | 7                                             |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                | (CL) SILTY CLAY, some sand; brown,<br>oxidation staining; cohesive, w>PL, stiff |                                                                                              | 180.10                |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              | 0.61                  |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 1                     |                                                                |                                                                                 |                                                                                              |                       | 2       | SS   | 12                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       | 3       | SS   | 10                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 2                     |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 | (ML) sandy CLAYEY SILT, some gravel;<br>grey, (TILL); cohesive, w<PL, stiff to very<br>stiff |                       | 178.58  |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       | 2.13    | 4    | SS                                            | 14                        |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 3                     |                                                                |                                                                                 |                                                                                              |                       | 5       | SS   | 22                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 4                     |                                                                |                                                                                 |                                                                                              | 176.68                |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                | (ML) sandy SILT; grey; non-cohesive,<br>wet, compact to very dense              |                                                                                              | 4.04                  |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       | 6       | SS   | 13                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 5                     |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 6                     |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       | 7       | SS   | 40                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 7                     |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 8                     |                                                                |                                                                                 |                                                                                              |                       | 8       | SS   | 86/<br>0.23                                   |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 9                     |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              |                       | 9       | SS   | 49                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                | END OF BOREHOLE                                                                 |                                                                                              | 171.11                |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                              | 9.60                  |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 10                    |                                                                |                                                                                 |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                | CONTINUED NEXT PAGE                                                             |                                                                                              |                       |         |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |

14-MAR-17

  
 14-MAR-17

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-117**

BORING DATE: March 14, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                  |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|-----------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----------------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q - ●<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |
|                       |               |                                                                                               |             |                       |         |      |                                               | 20                        | 40 | 60                               | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |               | --- CONTINUED FROM PREVIOUS PAGE ---                                                          |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 10                    |               | Notes:                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |               | 1. Groundwater encountered during drilling at a depth of 3.0 m below ground surface.          |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 11                    |               | 2. Borehole caved to a depth of 8.5 m below ground surface upon completion of drilling.       |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |               | 3. Groundwater measured at a depth of 5.0 m below ground surface upon completion of drilling. |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                  |                                    |                       |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-118

SHEET 1 OF 1

LOCATION: SEE FIGURE 1

BORING DATE: March 20, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                    | SOIL PROFILE                                                                                                                                                                                                                                                                                                             |                                                    |                       | SAMPLES        |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------|----------------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|
|                       |                                                                  | DESCRIPTION                                                                                                                                                                                                                                                                                                              | STRATA PLOT                                        | ELEV.<br>DEPTH<br>(m) | NUMBER         | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       |                |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |  |
|                       |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                  | GROUND SURFACE                                                                                                                                                                                                                                                                                                           |                                                    | 181.09                |                |      |            | 20                                            | 40 | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |  |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. - Hollow Stem Auger | TOPSOIL                                                                                                                                                                                                                                                                                                                  |                                                    | 0.00                  |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                  | (CL) SILTY CLAY, trace to some sand;<br>brown, oxidation staining; cohesive,<br>w<PL to w~PL, firm to very stiff                                                                                                                                                                                                         |                                                    | 0.12                  | 1              | SS   | 6          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 1                     |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       | 2              | SS   | 13         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       | 3              | SS   | 17         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 2                     |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       | 4              | SS   | 9          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                  | (ML) sandy CLAYEY SILT to sandy SILT;<br>grey, (TILL); cohesive, w<PL, stiff                                                                                                                                                                                                                                             |                                                    | 178.96<br>2.13        | 5              | SS   | 14         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 3                     |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       | 6              | SS   | 36         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 4                     |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       | 7              | SS   | 43         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 5                     |                                                                  |                                                                                                                                                                                                                                                                                                                          | (SM) SILTY SAND; grey; non-cohesive,<br>wet, dense |                       | 176.93<br>4.17 |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 6                     |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                  | END OF BOREHOLE                                                                                                                                                                                                                                                                                                          |                                                    | 174.54<br>6.55        |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 7                     |                                                                  | Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 4.6 m below ground<br>surface.<br><br>2. Borehole caved to a depth of 5.8 m<br>below ground surface upon completion<br>of drilling.<br><br>3. Groundwater measured at a depth of<br>5.5 m below ground surface upon<br>completion of drilling. |                                                    |                       |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 8                     |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 9                     |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 10                    |                                                                  |                                                                                                                                                                                                                                                                                                                          |                                                    |                       |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |

  
 20-MAR-17

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: SEMP

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-119

SHEET 1 OF 1

LOCATION: SEE FIGURE 1

BORING DATE: March 20, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                        |             | SAMPLES               |        |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                      |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|--------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|
|                       |                                                                | DESCRIPTION                                                                                                         | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE | BLOWS/0.3m                                    |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT<br>Wp   W   Wi |                  |                  |                            |                                               |  |
|                       |                                                                | GROUND SURFACE                                                                                                      |             | 180.74                |        |      |                                               | 20                        | 40 | 60 | 80                                 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup>           |                                               |  |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                                             |             | 0.00                  |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                | (CL) SILTY CLAY, some sand; dark brown, organic matter; cohesive, w>PL, firm                                        |             | 0.12                  | 1      | SS   | 5                                             |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             | 180.06                |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                | (CL) SILTY CLAY, trace to some sand; brown, mottled; cohesive, w~PL, stiff                                          |             | 0.69                  | 2      | SS   | 12                                            |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 1                     |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 2                     |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                | (CL-ML) SILTY CLAY to CLAYEY SILT, some sand, some gravel; grey, (TILL); cohesive, w~PL to w<PL, very stiff to hard |             | 178.61                | 4      | SS   | 16                                            |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             | 2.13                  |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 3                     |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 4                     |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 5                     |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 6                     |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 7                     |                                                                | (SM) SILTY SAND; grey; non-cohesive, wet, compact                                                                   |             | 174.04                |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             | 6.71                  |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 8                     |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                                     |             |                       |        |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |

  
 20-MAR-17

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: SEMP



PROJECT: 1413472

## RECORD OF BOREHOLE: 17-120

SHEET 1 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 17, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                            |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|--------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                                             | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - ● |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       |         |      |            | 20                                            | 40 | 60                             | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       |         |      |            | 20                                            | 40 | 60                             | 80 | 10                                 | 20               | 30               | 40               |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                                          |             | 179.67                |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                                                 |             | 0.00                  |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (CL) SILTY CLAY, trace sand; brown to grey; cohesive, w~PL, soft to very stiff                                          |             | 0.15                  | 1       | SS   | 3          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                |                                                                                                                         |             |                       | 2       | SS   | 16         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | -becoming grey below 1.5 m depth                                                                                        |             |                       | 3       | SS   | 15         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       | 4       | SS   | 10         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       | 5       | SS   | 7          |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                | (CL-ML) sandy CLAYEY SILT to sandy SILTY CLAY, some sand, some gravel; grey, (TILL); cohesive, w~PL, very stiff to hard |             | 175.64<br>4.04        |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       | 6       | SS   | 62         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       | 7       | SS   | 18         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                                |                                                                                                                         |             |                       | 8       | SS   | 23         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                         |             |                       | 9       | SS   | 20         |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                                |                                                                                                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | CONTINUED NEXT PAGE                                                                                                     |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |

  
 17-MAR-17

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: SEMP

LOCATION: SEE FIGURE 1

## BORING DATE: March 17, 2017

DATUM: Geodetic

GTA-BHS 001 ||GOLDER.GDS|GAL\SUBBURY\CAD-GISSIM\CLIENTS\SIXTEENTH LAND HOLDINGS INC|YORK DOWNS GOLF COURSE|02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JUL7B

1 : 50



CHECKED: SEMP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-121**

BORING DATE: May 15, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSUB\BURYCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                   |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|---------------|------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |               | DESCRIPTION                                                                                    | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> |
|                       |               |                                                                                                |             |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    | 10     | 20         | 30     | 40                         |                                               |                  |                  |
| 0                     |               | GROUND SURFACE                                                                                 |             | 180.00                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | FILL - TOPSOIL                                                                                 |             | 0.00                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | FILL - (SM) SILTY SAND; brown,<br>oxidation staining; non-coheisve, moist,<br>loose to compact |             | 0.15                  | 1       | SS   | 6          |                                               |    |    |    |                                    |        | ○          |        |                            |                                               |                  |                  |
| 1                     |               |                                                                                                |             |                       |         |      |            |                                               |    |    |    |                                    |        | ○          |        |                            |                                               |                  |                  |
|                       |               | (CL) SILTY CLAY; brown; cohesive,<br>w>PL, firm to stiff                                       |             | 178.63                |         |      |            |                                               |    |    |    |                                    |        |            | ○      |                            |                                               |                  |                  |
| 2                     |               |                                                                                                |             | 1.37                  | 3       | SS   | 10         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | - oxidation staining above 2.1 m depth                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | - becoming grey at 2.1 m depth                                                                 |             |                       | 4       | SS   | 9          |                                               |    |    |    |                                    |        |            | ○      |                            |                                               |                  |                  |
| 3                     |               |                                                                                                |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                |             |                       | 5       | SS   | 6          |                                               |    |    |    |                                    |        |            |        | ○                          |                                               |                  |                  |
| 4                     |               |                                                                                                |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | (ML) CLAYEY SILT and SAND, some<br>gravel; grey, (TILL); cohesive, w<PL, stiff<br>to hard      |             | 175.97                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | - auger grinding at 4.3 m depth on<br>cobble or boulder                                        |             | 4.04                  | 6       | SS   | 13         |                                               |    |    |    |                                    |        | ○          |        |                            |                                               |                  |                  |
| 5                     |               |                                                                                                |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 6                     |               |                                                                                                |             |                       |         |      |            |                                               |    |    |    |                                    |        | ○          |        |                            |                                               |                  |                  |
| 7                     |               |                                                                                                |             |                       | 7       | SS   | 40         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 8                     |               |                                                                                                |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               |                                                                                                |             |                       | 8       | SS   | 22         |                                               |    |    |    |                                    |        | ○          |        |                            |                                               |                  |                  |
| 9                     |               |                                                                                                |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | - auger grinding at 8.5 m depth on<br>cobble or boulder                                        |             | 171.39                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | (CL) SILTY CLAY, some sand, some<br>gravel; grey, (TILL); compact, w<PL, very<br>stiff to hard |             | 8.61                  | 9       | SS   | 18         |                                               |    |    |    |                                    |        | ○          |        |                            |                                               |                  |                  |
| 10                    |               |                                                                                                |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |               | CONTINUED NEXT PAGE                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-121

BORING DATE: May 15, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                             |                                                                                   |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                       |  |  |  |
|-----------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|-----------------------|--|--|--|
|                       |                                                                | DESCRIPTION                                                                              | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | 20                                            | 40 | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | nat V. +<br>rem V. ⊕               |                  | Q - ●<br>U - ○   |                  |                            |                                               | WATER CONTENT PERCENT |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               | Wp ———— W ———— WI     |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    | 10               | 20               | 30               | 40                         |                                               |                       |  |  |  |
| 10                    | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | — CONTINUED FROM PREVIOUS PAGE —                                                         |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 11                    |                                                                | (CL) SILTY CLAY, some sand, some gravel; grey, (TILL); compact, w<PL, very stiff to hard |  |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 12                    |                                                                | (ML) sandy SILT; grey; non-cohesive, wet, dense                                          |  | 168.35<br>11.66       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                          |                                                                                   |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-122

BORING DATE: March 17, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 J.JL/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                          |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |       |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|-------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                 | DESCRIPTION                                                                           | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |       |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            | 20                                            | 40 | 60    | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            | nat V.                                        | +  | Q - ● |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            | rem V.                                        | ⊕  | U - ○ |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            | 20                                            | 40 | 60    | 80 | 10                                 | 20               | 30               | 40               |                            |                                               |
| 0                     |                                                                 | GROUND SURFACE                                                                        |             | 179.47                |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | TOPSOIL                                                                               |             | 0.00                  |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 | (CL) SILTY CLAY, trace sand; brown;<br>cohesive, w>PL, stiff to very stiff            |             | 0.15                  | 1       | SS   | 8          |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                 |                                                                                       |             |                       | 2       | SS   | 14         |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 | -becoming grey at 1.4 m depth<br>- oxidation staining above 1.5 m depth               |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                 |                                                                                       |             |                       | 3       | SS   | 20         |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             | 4                     | SS      | 17   |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                 | (ML) sandy SILT, some gravel; grey,<br>(TILL); non-cohesive, compact to very<br>dense |             | 176.58<br>2.90        |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       | 5       | SS   | 31         |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 | - auger grinding at 4.3 m depth on<br>cobble or boulder                               |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                                 |                                                                                       |             |                       | 6       | SS   | 65         |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       | 7       | SS   | 13         |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 | (SM) SILTY SAND; grey; non-cohesive,<br>wet, compact                                  |             | 172.39<br>7.09        |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                                 |                                                                                       |             |                       | 8       | SS   | 18         |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       | 9       | SS   | 29         |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 | END OF BOREHOLE                                                                       |             | 169.87<br>9.60        |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                                 |                                                                                       |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 | CONTINUED NEXT PAGE                                                                   |             |                       |         |      |            |                                               |    |       |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

**RECORD OF BOREHOLE: 17-122**

SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 17, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                                                                                                                           |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                            |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----------------------------------|------------------------------------|--------------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                                                                                                                            | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q - ●<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT<br>Wp ———— W ———— WI |                  |                  |                            |                                               |                  |
|                       |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               | 20                        | 40 | 60                               | 80                                 | 10 <sup>-6</sup>                           | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —                                                                                                                                                                                                                                                                       |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 11                    |               | Notes:<br><br>1. Groundwater encountered during drilling at a depth of 2.3 m below ground surface.<br><br>2. Borehole caved to a depth of 7.2 m below ground surface upon completion of drilling.<br><br>3. Groundwater measured at a depth of 5.3 m below ground surface upon completion of drilling. |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-123**

BORING DATE: March 17, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                       |                                        |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                            | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |                                                                 | DESCRIPTION                                                                                        | STRATA PLOT                            | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                                    |                                        |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. U - |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                                    |                                        |                       |         |      |                                               | 20                        | 40 | 60                         | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |                                                                 | GROUND SURFACE                                                                                     |                                        | 179.75                |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | TOPSOIL                                                                                            |                                        | 0.00                  |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 | (CL) sandy SILTY CLAY, some gravel;<br>brown, oxidation staining; cohesive,<br>w<PL, firm to stiff |                                        | 0.15                  | 1       | SS   | 6                                             |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                                    |                                        |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 1                     |                                                                 |                                                                                                    |                                        |                       | 2       | SS   | 13                                            |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                                    |                                        |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                                    |                                        |                       | 3       | SS   | 14                                            |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 2                     |                                                                 |                                                                                                    |                                        |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 | (ML) sandy CLAYEY SILT; brown, (TILL);<br>cohesive, w<PL, stiff to very stiff                      |                                        | 177.62<br>2.13        | 4       | SS   | 22                                            |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 3                     |                                                                 |                                                                                                    | - oxidation staining above 2.7 m depth |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                                    |                                        |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 | - becoming grey at 3.4 m depth                                                                     |                                        |                       | 5       | SS   | 20                                            |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 4                     |                                                                 |                                                                                                    |                                        |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 5                     |                                                                 |                                                                                                    |                                        |                       | 6       | SS   | 10                                            |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 6                     |                                                                 | (SM) SILTY SAND; grey; brown;<br>non-cohesive, wet, very loose to<br>compact                       |                                        | 174.19<br>5.56        |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                                    |                                        |                       | 7       | SS   | 3                                             |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 7                     |                                                                 |                                                                                                    |                                        |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 8                     |                                                                 |                                                                                                    |                                        |                       | 8       | SS   | 18                                            |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 9                     |                                                                 | (SP) SAND, trace fines; grey;<br>non-cohesive, wet, very dense                                     |                                        | 171.14<br>8.61        |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                                    |                                        |                       | 9       | SS   | 51                                            |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 10                    |                                                                 |                                                                                                    |                                        |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 | CONTINUED NEXT PAGE                                                                                |                                        |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |

17-MAR-17

  
 17-MAR-17

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: SEMP

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-123

SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 17, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURYCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                  |             | SAMPLES               |        |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------|-----------------------|--------|------|-----------------------------------------------|---------------------------|----|------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |                                                                 | DESCRIPTION                                                                                   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE | BLOWS/0.3m                                    |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                               |             |                       |        |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V.<br>rem V. | +<br>-<br>Q -<br>U -               | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                               |             |                       |        |      |                                               | 20                        | 40 | 60               | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |                                                                 |                                                                                               |             |                       |        |      |                                               | 20                        | 40 | 60               | 80                                 | 10                    | 20               | 30               | 40                         |                                               |                  |
| 10                    |                                                                 | -- CONTINUED FROM PREVIOUS PAGE --                                                            |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers |                                                                                               |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 | (CL) SILTY CLAY, trace sand, trace gravel; grey; cohesive, w~PL, very stiff                   |             | 169.62<br>10.13       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
| 11                    |                                                                 |                                                                                               |             |                       | 10     | SS   | 25                                            |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                               |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 | (CL) SILTY CLAY, some sand, trace gravel; grey, (TILL); cohesive, w<PL, hard                  |             | 168.17<br>11.58       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
| 12                    |                                                                 |                                                                                               |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 |                                                                                               |             |                       | 11     | SS   | 53                                            |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 | END OF BOREHOLE                                                                               |             | 167.10<br>12.65       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
| 13                    |                                                                 | Notes:                                                                                        |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 | 1. Groundwater encountered during drilling at a depth of 4.6 m below ground surface.          |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                 | 2. Borehole caved to a depth of 8.2 m below ground surface upon completion of drilling.       |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
| 14                    |                                                                 | 3. Groundwater measured at a depth of 4.6 m below ground surface upon completion of drilling. |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
| 15                    |                                                                 |                                                                                               |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
| 16                    |                                                                 |                                                                                               |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
| 17                    |                                                                 |                                                                                               |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
| 18                    |                                                                 |                                                                                               |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
| 19                    |                                                                 |                                                                                               |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |
| 20                    |                                                                 |                                                                                               |             |                       |        |      |                                               |                           |    |                  |                                    |                       |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: SEMP



PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-124**

BORING DATE: March 20, 2017

SHEET 1 OF 1

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                            |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                       |  |  |  |
|-----------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|-----------------------|--|--|--|
|                       |               | DESCRIPTION                                                                                                                                             | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | 20                                            | 40 | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |                       |  |  |  |
|                       |               |                                                                                                                                                         |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | nat V. + Q -<br>rem V. ⊕ U - ●     |                  |                  |                  |                            |                                               | WATER CONTENT PERCENT |  |  |  |
|                       |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               | Wp — W — Wi           |  |  |  |
|                       |               |                                                                                                                                                         |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | 10                                 | 20               | 30               | 40               |                            |                                               |                       |  |  |  |
| 0                     |               | GROUND SURFACE                                                                                                                                          |             | 186.73                |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               | FILL - TOPSOIL                                                                                                                                          |             | 0.00                  |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               | FILL - (CL) sandy SILTY CLAY, trace gravel; dark brown, organic matter, rootlets; cohesive, w~PL, firm to stiff                                         |             | 0.15                  | 1       | SS   | 6          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 1                     |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               |                                                                                                                                                         |             |                       | 2       | SS   | 9          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               | FILL - (ML) sandy CLAYEY SILT, trace cobbles; grey and brown; cohesive, w~PL, stiff                                                                     |             | 185.36<br>1.37        |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 2                     |               |                                                                                                                                                         |             |                       | 3       | SS   | 10         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               | (ML) sandy SILT, some gravel; brown to grey, (TILL), oxidation staining; non-cohesive, wet - moist, compact to dense                                    |             | 184.60<br>2.13        | 4       | SS   | 11         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 3                     |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               | -becoming grey at 3.0 m depth                                                                                                                           |             |                       | 5       | SS   | 32         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 4                     |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               |                                                                                                                                                         |             |                       | 6       | SS   | 27         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 5                     |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               | (CL) SILTY CLAY, trace sand, trace gravel; grey, (TILL); cohesive, w~PL, very stiff                                                                     |             | 181.17<br>5.56        |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 6                     |               |                                                                                                                                                         |             |                       | 7       | SS   | 22         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
|                       |               | END OF BOREHOLE                                                                                                                                         |             | 180.18<br>6.55        |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 7                     |               | Notes:<br><br>1. Groundwater encountered during drilling at a depth of 2.3 m below ground surface.<br><br>2. Borehole open upon completion of drilling. |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 8                     |               | 3. Groundwater measured at a depth of 2.4 m below ground surface upon completion of drilling.                                                           |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 9                     |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |
| 10                    |               |                                                                                                                                                         |             |                       |         |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                       |  |  |  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: SEMP

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-125

SHEET 1 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 20, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                                                                |             | SAMPLES               |        |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|
|                       |                                                                 | DESCRIPTION                                                                                                                                 | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE | BLOWS/0.3m                                    |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      | 20                                            | 40                        | 60 | 80 |                                    | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup>           |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      | nat V. + Q -<br>rem V. ⊕ U - ●                |                           |    |    | Wp   — W —   WI                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      | 20                                            | 40                        | 60 | 80 |                                    | 10                    | 20               | 30               | 40                         |                                               |  |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | GROUND SURFACE                                                                                                                              |             | 190.41                |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 | TOPSOIL                                                                                                                                     |             | 0.00                  |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 | (CL) SILTY CLAY, some sand; dark brown, organic matter, rootlets; cohesive, w~PL, firm                                                      |             | 0.15                  | 1      | SS   | 9                                             |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 | (CL-ML) sandy SILTY CLAY to sandy CLAYEY SILT, trace gravel; light brown, (TILL), oxidation staining; cohesive, w<PL to w~PL, stiff to hard |             | 189.73                |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             | 0.69                  |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 1                     |                                                                 |                                                                                                                                             |             |                       | 2      | SS   | 12                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 2                     |                                                                 |                                                                                                                                             |             |                       | 3      | SS   | 13                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             | 4                     | SS     | 27   |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             | 5                     | SS     | 45   |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 3                     |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             | 6                     | SS     | 40   |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 4                     |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 5                     |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 6                     |                                                                 | (SP) SAND, trace fines; grey; non-cohesive, wet, very loose                                                                                 |             | 184.85                |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             | 5.56                  |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 7                     |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
| 8                     |                                                                 | (CL) SILTY CLAY, trace sand, some gravel; grey, (TILL); cohesive, w~PL, very stiff to hard                                                  |             | 183.32                |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             | 7.09                  |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                             |             |                       |        |      |                                               |                           |    |    | </                                 |                       |                  |                  |                            |                                               |  |

  
 20-MAR-17

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: SEMP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-125

BORING DATE: March 20, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                                                                                                            |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |             |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                                      |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-----------------------------------------------|-------------|---------------------------|----|------------------------------------|----|--------------------------------------|------------------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                                                                                                             | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m  | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ⊙     |    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                            |                                               |                  |                  |
|                       |               |                                                                                                                                                                                                                                                                                         |             |                       |        |                                               |             | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> |                            |                                               | 10 <sup>-4</sup> | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —<br>(CL) SILTY CLAY, trace sand, some<br>gravel; grey, (TILL); cohesive, w~PL, very<br>stiff to hard                                                                                                                                                    |             | 179.65                | 10     | SS                                            | 50/<br>0-10 |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 11                    |               | END OF BOREHOLE<br>SPLIT SPOON BOUNCING<br>AUGER REFUSAL<br><br>Notes:<br><br>1. Borehole caved to a depth of 10.4 m<br>below ground surface upon completion<br>of drilling.<br><br>2. Groundwater measured at a depth of<br>7.9 m below ground surface upon<br>completion of drilling. |             | 10.76                 |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 12                    |               |                                                                                                                                                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 13                    |               |                                                                                                                                                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 14                    |               |                                                                                                                                                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 15                    |               |                                                                                                                                                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 16                    |               |                                                                                                                                                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 17                    |               |                                                                                                                                                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 18                    |               |                                                                                                                                                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 19                    |               |                                                                                                                                                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 20                    |               |                                                                                                                                                                                                                                                                                         |             |                       |        |                                               |             |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: SEMP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-126

BORING DATE: March 21, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                         |                                                                                                      |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |               |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |       |    | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |  |                  |  |                  |  |                  |  |
|-----------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|---------------|----|------------------------------------|----|-------|----|----------------------------|-----------------------------------------------|------------------|--|------------------|--|------------------|--|------------------|--|
|                       |                                                                 | DESCRIPTION                                                                                          | STRATA PLOT                                                                                          | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH                                |    |               |    | WATER CONTENT PERCENT              |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            | 20                                            |    | 40            |    | 60                                 |    | 80    |    |                            |                                               | 10 <sup>-6</sup> |  | 10 <sup>-5</sup> |  | 10 <sup>-4</sup> |  | 10 <sup>-3</sup> |  |
|                       |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            | Cu, kPa                                       |    | nat V. rem V. |    | + ⊕                                |    | Q - U |    |                            |                                               | ● - ○            |  | Wp               |  | W                |  | Wi               |  |
|                       |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            | 20                                            | 40 | 60            | 80 | 10                                 | 20 | 30    | 40 |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 0                     |                                                                 | GROUND SURFACE                                                                                       |                                                                                                      | 185.36                |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | FILL - TOPSOIL                                                                                       |                                                                                                      | 0.00                  |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 | FILL - (CL) SILTY CLAY, some sand;<br>dark brown, organic matter, rootlets;<br>cohesive, w~PL, stiff |                                                                                                      | 0.15                  | 1       | SS   | 10         |                                               |    |               |    |                                    |    | ○     |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 |                                                                                                      |                                                                                                      | 184.68                |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 | (CL) SILTY CLAY, trace sand, trace<br>gravel; light brown, mottled; cohesive,<br>w<PL, stiff         |                                                                                                      | 0.69                  | 2       | SS   | 14         |                                               |    |               |    |                                    |    | ○     |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 1                     |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 |                                                                                                      |                                                                                                      |                       |         | 3    | SS         | 17                                            |    |               |    |                                    |    | ○     |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 2                     |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 | (CL) sandy SILTY CLAY, trace gravel;<br>light brown, (TILL); cohesive, w<PL, very<br>stiff           |                                                                                                      | 183.23                | 4       | SS   | 16         |                                               |    |               |    |                                    |    | ○     |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 |                                                                                                      |                                                                                                      | 2.13                  |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 3                     |                                                                 |                                                                                                      | (ML) sandy SILT, some gravel; brown,<br>(TILL); non-cohesive, moist to wet,<br>compact to very dense |                       | 182.47  | 5    | SS         | 21                                            |    |               |    |                                    |    | ○     |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 |                                                                                                      |                                                                                                      | 2.90                  |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 4                     |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 | - becoming grey at 4.6 m depth                                                                       |                                                                                                      |                       | 6       | SS   | 64         |                                               |    |               |    |                                    | ○  |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 5                     |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 6                     |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 |                                                                                                      |                                                                                                      |                       | 7       | SS   | 13         |                                               |    |               |    |                                    | ○  |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 7                     |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 | (CL-ML) sandy SILTY CLAY, trace<br>gravel; grey, (TILL); cohesive, w<PL,<br>hard                     |                                                                                                      | 178.28                | 8       | SS   | 33         |                                               |    |               |    |                                    | ○  |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 |                                                                                                      |                                                                                                      | 7.09                  |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 8                     |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 | (SP) SAND, some fines; grey;<br>non-cohesive, wet, very dense                                        |                                                                                                      | 176.75                | 9       | SS   | 96         |                                               |    |               |    |                                    | ○  |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 |                                                                                                      |                                                                                                      | 8.61                  |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 9                     |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 | END OF BOREHOLE                                                                                      |                                                                                                      | 175.76                |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 |                                                                                                      |                                                                                                      | 9.60                  |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 10                    |                                                                 |                                                                                                      |                                                                                                      |                       |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |                                                                 | CONTINUED NEXT PAGE                                                                                  |                                                                                                      |                       |         |      |            |                                               |    |               |    |                                    |    |       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |

21-MAR-17

21-MAR-17

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: SEMP

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-126

SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 21, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                  |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|-----------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |
|                       |               |                                                                                               |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |               | --- CONTINUED FROM PREVIOUS PAGE ---                                                          |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 10                    |               | Notes:                                                                                        |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |               | 1. Groundwater encountered during drilling at a depth of 6.1 m below ground surface.          |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 11                    |               | 2. Borehole caved to a depth of 6.1 m below ground surface upon completion of drilling.       |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |               | 3. Groundwater measured at a depth of 5.5 m below ground surface upon completion of drilling. |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: SEMP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-127

BORING DATE: March 21, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                     |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                      |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                       |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |    |   |
|-----------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----------------------|----|------------------------------------|------------------|-----------------------|------------------|----------------------------|-----------------------------------------------|----|---|
|                       |                                                                | DESCRIPTION                                                                                                                      | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. +<br>rem V. ⊕ |    | Q - ●<br>U - ○                     |                  | WATER CONTENT PERCENT |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            | 20                                            | 40 | 60                   | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup>      | 10 <sup>-3</sup> |                            |                                               | Wp | W |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            | 20                                            | 40 | 60                   | 80 | 10                                 | 20               | 30                    | 40               |                            |                                               |    |   |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | GROUND SURFACE                                                                                                                   |             | 189.51                |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                | TOPSOIL                                                                                                                          |             | 0.00                  |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                | (CL) SILTY CLAY, some sand, trace gravel; brown, organic matter to 0.7 m depth; cohesive, w>PL, firm to stiff                    |             | 0.15                  | 1       | SS   | 7          |                                               |    |                      |    |                                    |                  | ○                     |                  |                            | 50 mm Diameter Monitoring Well                |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 1                     |                                                                | 2                                                                                                                                | SS          | 10                    |         |      |            |                                               |    |                      |    |                                    |                  | ○                     |                  |                            |                                               |    |   |
|                       |                                                                | (SM/ML) SILTY SAND to sandy SILT, trace to some gravel; brown, oxidation staining, (TILL); non-cohesive, moist, compact to dense |             | 188.14                |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             | 1.37                  | 3       | SS   | 16         |                                               |    |                      |    |                                    | ○                |                       |                  |                            |                                               |    |   |
| 2                     |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            | 21-MAR-17                                     |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 3                     |                                                                | 4                                                                                                                                | SS          | 17                    |         |      |            |                                               |    |                      |    |                                    | ○                |                       |                  |                            | Bentonite                                     |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 4                     | 5                                                              | SS                                                                                                                               | 21          |                       |         |      |            |                                               |    |                      |    | ○                                  |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 5                     | 6                                                              | SS                                                                                                                               | 42          |                       |         |      |            |                                               |    |                      |    | ○                                  |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 6                     |                                                                | -becoming grey at 5.6 m depth<br>-sand seams between 5.6 m and 6.2 m depth                                                       |             | 183.32                | 7A      |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                | (ML) sandy SILT; grey; non-cohesive, wet, dense                                                                                  |             | 6.19                  | 7B      | SS   | 42         |                                               |    |                      |    |                                    | ○                |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 7                     |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 8                     |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
| 9                     |                                                                | (CL-ML) SILTY CLAY to CLAYEY SILT, some sand, trace gravel; grey, (TILL); cohesive, w<PL, hard                                   |             | 180.98                |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             | 8.53                  |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |
|                       |                                                                |                                                                                                                                  |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |    |   |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-127**

BORING DATE: March 21, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\SUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                            |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                      |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|--------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                             | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                  |                            |                                               |                  |
|                       |               |                                                                                                                                                                                                         |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 11                    |               | Notes:<br><br>1. Groundwater encountered during drilling at a depth of 6.1 m below ground surface.<br><br>2. Groundwater measured at a depth of 6.1 m below ground surface upon completion of drilling. |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                                                                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-128

SHEET 1 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 20, 2017

DATUM: Geodetic

GTA-BHS 001 \GOLDER\GDS\GALSUBBURY\CAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                                  |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                                |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|--------------------------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                 | DESCRIPTION                                                                                                   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                                               |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. + Q -<br>rem V. ⊕ U - ⊙ |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                 |                                                                                                               |             |                       |         |      |            | 20                                            | 40 | 60                             | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                 |                                                                                                               |             |                       |         |      |            | 20                                            | 40 | 60                             | 80 | 10                                 | 20               | 30               | 40               |                            |                                               |
| 0                     |                                                                 | GROUND SURFACE                                                                                                |             | 190.01                |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | FILL - TOPSOIL                                                                                                |             | 0.00                  |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 | FILL - (CL) SILTY CLAY, trace gravel,<br>trace sand; brown, organic matter,<br>rootlets; cohesive, w~PL, firm |             | 0.15                  | 1       | SS   | 8          |                                               |    |                                |    |                                    | ○                |                  |                  |                            |                                               |
|                       |                                                                 | (CL) SILTY CLAY, trace gravel, trace<br>sand; light brown, mottled; cohesive,<br>w~PL, stiff                  |             | 189.33<br>0.69        | 2       | SS   | 9          |                                               |    |                                |    |                                    | ○                |                  |                  |                            |                                               |
| 1                     |                                                                 | (CL) sandy SILTY CLAY, trace gravel;<br>brown, (TILL), oxidation staining;<br>cohesive, w~PL, stiff           |             | 188.64<br>1.37        | 3       | SS   | 13         |                                               |    |                                |    |                                    | ○                |                  |                  |                            |                                               |
| 2                     |                                                                 | (ML) sandy SILT, some gravel; brown,<br>(TILL), oxidation staining; non-cohesive,<br>moist, compact to dense  |             | 187.88<br>2.13        | 4       | SS   | 16         |                                               |    |                                |    |                                    | ○                |                  |                  |                            |                                               |
| 3                     |                                                                 |                                                                                                               |             |                       | 5       | SS   | 43         |                                               |    |                                |    |                                    | ○                |                  |                  |                            |                                               |
| 4                     |                                                                 |                                                                                                               |             |                       | 6       | SS   | 41         |                                               |    |                                |    |                                    | ○                |                  |                  |                            |                                               |
| 5                     |                                                                 | -auger grinding between 4.9 m and<br>5.2 m depth on cobble or boulder                                         |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                                 | (SP) SAND, some fines; brown;<br>non-cohesive, wet, compact                                                   |             | 184.45<br>5.56        | 7       | SS   | 13         |                                               |    |                                |    |                                    |                  | ○                |                  |                            |                                               |
| 7                     |                                                                 |                                                                                                               |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                                 |                                                                                                               |             |                       | 8       | SS   | 16         |                                               |    |                                |    |                                    | ○                |                  |                  |                            |                                               |
| 9                     |                                                                 | (CL) SILTY CLAY, some sand, trace<br>gravel; grey, (TILL); cohesive, w>PL to<br>w<PL, very stiff              |             | 181.40<br>8.61        | 9       | SS   | 29         |                                               |    |                                |    |                                    | ○                |                  |                  |                            |                                               |
| 10                    |                                                                 |                                                                                                               |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                 | CONTINUED NEXT PAGE                                                                                           |             |                       |         |      |            |                                               |    |                                |    |                                    |                  |                  |                  |                            |                                               |

  
 20-MAR-17

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: SEMP



PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-128

BORING DATE: March 20, 2017

SHEET 2 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURYCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                                                                                                                                             |                                                                                   |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                      |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                       |    | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |  |                  |  |                  |  |                  |  |
|-----------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----------------------|----|------------------------------------|----|-----------------------|----|----------------------------|-----------------------------------------------|------------------|--|------------------|--|------------------|--|------------------|--|
|                       |               | DESCRIPTION                                                                                                                                                                                                                                                                                                              | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | RESISTANCE, BLOWS/0.3m                        |    |                      |    | k, cm/s                            |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            | 20                                            |    | 40                   |    | 60                                 |    | 80                    |    |                            |                                               | 10 <sup>-6</sup> |  | 10 <sup>-5</sup> |  | 10 <sup>-4</sup> |  | 10 <sup>-3</sup> |  |
|                       |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. +<br>rem V. ⊕ |    | Q - ●<br>U - ○                     |    | WATER CONTENT PERCENT |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            | 20                                            | 40 | 60                   | 80 |                                    | 10 | 20                    | 30 | 40                         |                                               |                  |  |                  |  |                  |  |                  |  |
| 10                    |               | -- CONTINUED FROM PREVIOUS PAGE --                                                                                                                                                                                                                                                                                       |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |               | (SM) SILTY SAND; grey; non-cohesive,<br>wet, dense                                                                                                                                                                                                                                                                       |  | 179.88<br>10.13       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 11                    |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       | 10      | SS   | 38         |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |               | END OF BOREHOLE                                                                                                                                                                                                                                                                                                          |                                                                                   | 178.89<br>11.13       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
|                       |               | Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 6.1 m below ground<br>surface.<br><br>2. Borehole caved to a depth of 5.8 m<br>below ground surface upon completion<br>of drilling.<br><br>3. Groundwater measured at a depth of<br>5.4 m below ground surface upon<br>completion of drilling. |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 12                    |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 13                    |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 14                    |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 15                    |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 16                    |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 17                    |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 18                    |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 19                    |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |
| 20                    |               |                                                                                                                                                                                                                                                                                                                          |                                                                                   |                       |         |      |            |                                               |    |                      |    |                                    |    |                       |    |                            |                                               |                  |  |                  |  |                  |  |                  |  |

DEPTH SCALE  
1 : 50



LOGGED: PT  
CHECKED: SEMP

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-129**

BORING DATE: March 20, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                                              |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |                                                                 | DESCRIPTION                                                                                                               | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                 |                                                                                                                           |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |
|                       |                                                                 |                                                                                                                           |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> |
|                       |                                                                 |                                                                                                                           |             |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    | 10     | 20         | 30     | 40                         |                                               |                  |                  |
| 0                     |                                                                 | GROUND SURFACE                                                                                                            |             | 185.12                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | TOPSOIL                                                                                                                   |             | 0.00<br>0.09          | 1       | SS   | 4          |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                 | (CL) sandy SILTY CLAY, some gravel;<br>dark brown to brown, mottled, oxidation<br>staining; cohesive, w<PL, firm to stiff |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 1                     |                                                                 |                                                                                                                           |             |                       | 2       | SS   | 14         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                 | (ML) sandy SILT; brown, (TILL), oxidation<br>staining; non-cohesive, moist, compact<br>to very dense                      |             | 183.75<br>1.37        | 3       | SS   | 18         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 2                     |                                                                 |                                                                                                                           |             |                       | 4       | SS   | 22         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                 |                                                                                                                           |             |                       | 5       | SS   | 57         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 3                     |                                                                 |                                                                                                                           |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 4                     |                                                                 | (SP) SAND, some fines; brown,<br>oxidation staining; non-cohesive, wet,<br>dense                                          |             | 181.46<br>3.66        | 6       | SS   | 36         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 5                     |                                                                 |                                                                                                                           |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 6                     |                                                                 |                                                                                                                           |             |                       |         | 7    | SS         | 37                                            |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 7                     |                                                                 |                                                                                                                           |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                 | (CL) sandy SILTY CLAY; grey; cohesive,<br>w<PL, hard                                                                      |             | 177.96<br>7.16        | 8       | SS   | 35         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 8                     |                                                                 |                                                                                                                           |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 9                     |                                                                 | -430 mm grey, wet, silty sand seam at<br>8.6 m depth                                                                      |             |                       | 9       | SS   | 54         |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 10                    |                                                                 |                                                                                                                           |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                 | CONTINUED NEXT PAGE                                                                                                       |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: SEMP

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-129

BORING DATE: March 20, 2017

SHEET 2 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                                                         |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                                      |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|--------------------------------------|------------------|----------------------------|-----------------------------------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                                                          | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ○     |    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                            |                                               |
|                       |               |                                                                                                                                                                                                                                      |             |                       |        |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> |                            |                                               |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —<br>(CL) sandy SILTY CLAY; grey; cohesive,<br>w<PL, hard                                                                                                                                             |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 11                    |               |                                                                                                                                                                                                                                      |             | 174.00<br>11.13       | 10     | SS                                            | 73         |                           |    |                                    |    |                                      |                  |                            |                                               |
| 12                    |               | END OF BOREHOLE<br><br>Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 6.1 m below ground<br>surface.<br><br>2. Borehole caved to a depth of 8.2 m<br>below ground surface upon completion<br>of drilling. |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 13                    |               |                                                                                                                                                                                                                                      |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 14                    |               |                                                                                                                                                                                                                                      |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 15                    |               |                                                                                                                                                                                                                                      |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 16                    |               |                                                                                                                                                                                                                                      |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 17                    |               |                                                                                                                                                                                                                                      |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 18                    |               |                                                                                                                                                                                                                                      |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 19                    |               |                                                                                                                                                                                                                                      |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 20                    |               |                                                                                                                                                                                                                                      |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |

PROJECT: 1413472

LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-130

BORING DATE: March 21, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                                                |                                                         |                       | SAMPLES        |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |  |
|-----------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------|----------------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|--|
|                       |                                                                 | DESCRIPTION                                                                                                                 | STRATA PLOT                                             | ELEV.<br>DEPTH<br>(m) | NUMBER         | TYPE | BLOWS/0.3m                                    |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |  |
|                       |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               | 20                        | 40 | 60 | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |  |
|                       |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               | 20                        | 40 | 60 | 80                                 | 10                    | 20               | 30               | 40                         |                                               |                  |  |
| 0                     |                                                                 | GROUND SURFACE                                                                                                              |                                                         | 183.90                |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | FILL - TOPSOIL                                                                                                              |                                                         | 0.00                  |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 | FILL - (SP) gravelly SAND, some plastic<br>fines; brown, oxidation staining;<br>non-cohesive, wet, loose to compact         |                                                         | 0.15                  | 1              | SS   | 5                                             |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
| 1                     |                                                                 |                                                                                                                             |                                                         |                       | 2              | SS   | 15                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 | (CL) SILTY CLAY; brown; cohesive,<br>w>PL, very stiff                                                                       |                                                         | 182.53<br>1.37        | 3              | SS   | 19                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
| 2                     |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 | (ML) sandy SILT; brown to grey, (TILL),<br>oxidation staining; non-cohesive, moist,<br>dense to very dense                  |                                                         | 181.77<br>2.13        | 4              | SS   | 34                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
| 3                     |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 |                                                                                                                             |                                                         |                       |                | 5    | SS                                            | 70                        |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
| 4                     |                                                                 |                                                                                                                             | - auger grinding at 4.0 m depth on<br>cobble or boulder |                       | 179.86<br>4.04 |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 | (SM) SILTY SAND; brown, oxidation<br>staining; non-cohesive, wet, compact to<br>dense                                       |                                                         |                       |                | 6    | SS                                            | 29                        |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
| 5                     |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
| 6                     |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 |                                                                                                                             |                                                         |                       | 7              | SS   | 39                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
| 7                     |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 | (ML) sandy SILT; grey; non-cohesive,<br>wet, dense to very dense<br>- auger grinding at 7.3 m depth on<br>cobble or boulder |                                                         | 176.82<br>7.09        |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 |                                                                                                                             |                                                         |                       | 8              | SS   | 41                                            |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
| 8                     |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
| 9                     |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 |                                                                                                                             |                                                         |                       | 9              | SS   | 80/<br>0.25                                   |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 | - auger grinding at 9.8 m depth on<br>cobble or boulder                                                                     |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
| 10                    |                                                                 |                                                                                                                             |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |
|                       |                                                                 | CONTINUED NEXT PAGE                                                                                                         |                                                         |                       |                |      |                                               |                           |    |    |                                    |                       |                  |                  |                            |                                               |                  |  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-130

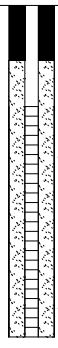
SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 21, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 J.JL/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                            |                                                                                   |                       | SAMPLES |             |             | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                                                                                     |  |  |
|-----------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------|-------------|-------------|-----------------------------------------------|----|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------|--|--|
|                       |                                                                 | DESCRIPTION                                                                                             | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE        | BLOWS/0.3m  |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
|                       |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |                                                                                     |  |  |
|                       |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    | Wp — W — Wi                        |                  |                  |                  |                            |                                               |                                                                                     |  |  |
|                       |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             | 20                                            | 40 | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |                                                                                     |  |  |
|                       |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
|                       |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 10                    |                                                                 | — CONTINUED FROM PREVIOUS PAGE —                                                                        |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | (ML) sandy CLAYEY SILT, some gravel;<br>grey, (TILL); cohesive, w<PL, hard                              |  | 173.77<br>10.13       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            | Bentonite                                     |  |  |  |
|                       |                                                                 |                                                                                                         |                                                                                   | 10                    | SS      | 50/<br>0.08 |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 11                    |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 12                    |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
|                       |                                                                 | END OF BOREHOLE                                                                                         |                                                                                   | 171.58<br>12.32       | 11      | SS          | 50/<br>0.13 |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
|                       |                                                                 | Note:<br><br>1. Groundwater encountered during<br>drilling at a depth of 2.9 m below ground<br>surface. |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 13                    |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 14                    |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 15                    |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 16                    |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 17                    |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 18                    |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 19                    |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |
| 20                    |                                                                 |                                                                                                         |                                                                                   |                       |         |             |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |                                                                                     |  |  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-131

SHEET 1 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 22, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                                     |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |                                          |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s                                  |  |                     |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|--|------------------------------------------|--|---------------------------------------------------------------------|--|---------------------|--|----------------------------|-----------------------------------------------|
|                       |                                                                 | DESCRIPTION                                                                                                      | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            | SHEAR STRENGTH                                |  |                                          |  | WATER CONTENT PERCENT                                               |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            | 20      40      60      80                    |  | nat V.   +   Q -<br>rem V.   ⊕   U -   ○ |  | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |  | Wp       W       Wi |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
| 0                     |                                                                 | GROUND SURFACE                                                                                                   |             | 185.91                |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | TOPSOIL                                                                                                          |             | 0.00                  |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 | (CL) SILTY CLAY, trace sand, trace gravel; brown, rootlets; cohesive, w~PL, firm                                 |             | 0.15                  | 1       | SS   | 6          |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 | (CL) sandy SILTY CLAY, some gravel; brown, (TILL), sand seams; cohesive, w~PL, stiff                             |             | 185.23                |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
| 1                     |                                                                 |                                                                                                                  |             | 0.69                  | 2       | SS   | 12         |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
| 2                     |                                                                 |                                                                                                                  |             |                       |         | 3    | SS         | 14                                            |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 | (SM/SP) SILTY SAND to SAND, trace fines, trace to some gravel; brown; non-cohesive, dry to wet, compact to dense |             | 183.70                |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 | - dry pockets above 2.7 m depth                                                                                  |             | 2.21                  | 4       | SS   | 30         |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |
|                       |                                                                 |                                                                                                                  |             |                       |         |      |            |                                               |  |                                          |  |                                                                     |  |                     |  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-131

SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 22, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UDBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                            |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                          |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|---------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----------------------------------|------------------------------------|------------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                             | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ● ○ |                                    | WATER CONTENT PERCENT<br>Wp ——— W ——— WI |                  |                  |                            |                                               |                  |
|                       |               |                                                                                                         |             |                       |         |      |                                               | 20                        | 40 | 60                               | 80                                 | 10 <sup>-6</sup>                         | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
|                       |               | Note:<br><br>1. Groundwater encountered during<br>drilling at a depth of 4.6 m below ground<br>surface. |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
| 11                    |               |                                                                                                         |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                                         |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                                         |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                                         |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                                         |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                                         |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                                         |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                                         |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                                         |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                                         |             |                       |         |      |                                               |                           |    |                                  |                                    |                                          |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-132

SHEET 1 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 21, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                             |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |                                                                | DESCRIPTION                                                                                              | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> |
|                       |                                                                |                                                                                                          |             |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    | 10     | 20         | 30     | 40                         |                                               |                  |                  |
| 0                     |                                                                | GROUND SURFACE                                                                                           |             | 187.75                |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                                  |             | 0.00                  |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | (CL) SILTY CLAY, trace gravel; brown,<br>organic matter to 0.7 m depth; cohesive,<br>w>PL, firm to stiff |             | 0.12                  | 1       | SS   | 9          |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 1                     |                                                                |                                                                                                          | 2           | SS                    | 11      |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | (SP-SM) SAND, fine to medium, some<br>fines; brown; non-cohesive, dry to moist,<br>compact               |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 2                     |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 3                     |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 4                     |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       | (SM) SILTY SAND; brown; non-cohesive,<br>dense to very dense   |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 5                     |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 6                     |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 7                     |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | -becoming grey at 7.1 m depth                                                                            |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 8                     |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 9                     |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                |                                                                                                          |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
| 10                    |                                                                | END OF BOREHOLE                                                                                          |             | 178.15<br>9.60        |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |
|                       |                                                                | CONTINUED NEXT PAGE                                                                                      |             |                       |         |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW



PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-132

BORING DATE: March 21, 2017

SHEET 2 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 J.LJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                                                                                                               |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                                      |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|--------------------------------------|------------------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                                                                                                                | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q - ●<br>rem V. ⊕ U - ○   |    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                            |                                               |                  |                  |
|                       |               |                                                                                                                                                                                                                                                                                            |             |                       |        |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> |                            |                                               | 10 <sup>-4</sup> | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —                                                                                                                                                                                                                                                           |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 11                    |               | Notes:<br>1. Groundwater encountered during drilling at a depth of 7.6 m below ground surface.<br>2. Borehole caved to a depth of 4.3 m below ground surface upon completion of drilling.<br>3. Groundwater measured at a depth of 6.8 m below ground surface upon completion of drilling. |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 12                    |               |                                                                                                                                                                                                                                                                                            |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 13                    |               |                                                                                                                                                                                                                                                                                            |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 14                    |               |                                                                                                                                                                                                                                                                                            |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 15                    |               |                                                                                                                                                                                                                                                                                            |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 16                    |               |                                                                                                                                                                                                                                                                                            |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 17                    |               |                                                                                                                                                                                                                                                                                            |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 18                    |               |                                                                                                                                                                                                                                                                                            |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 19                    |               |                                                                                                                                                                                                                                                                                            |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 20                    |               |                                                                                                                                                                                                                                                                                            |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |

DEPTH SCALE  
1 : 50



LOGGED: PT  
CHECKED: EW

LOCATION: SEE FIGURE 1

## BORING DATE: March 9, 2017

DATUM: Geodetic

CONTINUED NEXT PAGE

1 : 50



CHECKED: EW

\\GOLDER.GDS\GAL\SUBBURY\CAD-GIS\SIM\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017 GPJ GAL-MIS.GDT 10/17/17 JLT/BTB

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-133

SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 9, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURYCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                       |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                                      |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|--------------------------------------|------------------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                        | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q - ●<br>rem V. ⊕ U - ○   |    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                            |                                               |                  |                  |
|                       |               |                                                                                                                                                                                                    |             |                       |        |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> |                            |                                               | 10 <sup>-4</sup> | 10 <sup>-3</sup> |
| 10                    |               | -- CONTINUED FROM PREVIOUS PAGE --                                                                                                                                                                 |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
|                       |               | (ML) CLAYEY SILT, some sand, trace gravel; grey, (TILL); cohesive, w<PL, hard                                                                                                                      |             | 180.91<br>10.21       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 11                    |               |                                                                                                                                                                                                    |             |                       | 10     | SS                                            | 51         |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
|                       |               | END OF BOREHOLE                                                                                                                                                                                    |             | 180.00<br>11.13       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 12                    |               | Notes:<br>1. Borehole caved to a depth of 2.1 m below ground surface upon completion of drilling.<br>2. Groundwater measured at a depth of 0.6 m below ground surface upon completion of drilling. |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 13                    |               |                                                                                                                                                                                                    |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 14                    |               |                                                                                                                                                                                                    |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 15                    |               |                                                                                                                                                                                                    |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 16                    |               |                                                                                                                                                                                                    |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 17                    |               |                                                                                                                                                                                                    |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 18                    |               |                                                                                                                                                                                                    |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 19                    |               |                                                                                                                                                                                                    |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 20                    |               |                                                                                                                                                                                                    |             |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: AK

CHECKED: EW

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-134

SHEET 1 OF 1

LOCATION: SEE FIGURE 1

BORING DATE: March 8, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                                                                                 |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |  |  |  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s                                  |  |  |  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                       |  |  |  |
|-----------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|--|--|--|---------------------------------------------------------------------|--|--|--|----------------------------|-----------------------------------------------|-----------------------|--|--|--|
|                       |                                                                | DESCRIPTION                                                                                                                                                                                  | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | 20      40      60      80                    |  |  |  | 10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup> |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |  |  |  | nat V.   +   Q -<br>rem V.   ⊕   U -   ●                            |  |  |  |                            |                                               | WATER CONTENT PERCENT |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             |                       |         |      |            | 20      40      60      80                    |  |  |  | 10      20      30      40                                          |  |  |  |                            |                                               |                       |  |  |  |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | GROUND SURFACE                                                                                                                                                                               |             | 186.92                |         |      |            |                                               |  |  |  |                                                                     |  |  |  | ▽                          |                                               |                       |  |  |  |
|                       |                                                                | FILL - TOPSOIL                                                                                                                                                                               |             | 0.00                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  | 08-MAR-17                  |                                               |                       |  |  |  |
|                       |                                                                | FILL - (CL) SILTY CLAY, trace sand,<br>trace to some gravel; brown, organic<br>matter, rootlets; cohesive, w<PL, firm                                                                        |             | 0.15                  | 1       | SS   | 5          |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 1                     |                                                                | (CL) SILTY CLAY, some sand, trace to<br>some gravel; brown, oxidation staining;<br>cohesive, w>PL, stiff                                                                                     |             | 186.24                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             | 0.69                  | 2       | SS   | 10         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 2                     |                                                                |                                                                                                                                                                                              |             |                       |         | 3    | SS         | 12                                            |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                | (SM) SILTY SAND; brown; non-cohesive,<br>wet, loose to compact                                                                                                                               |             | 184.79                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             | 2.13                  | 4       | SS   | 6          |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 3                     |                                                                |                                                                                                                                                                                              |             |                       |         | 5    | SS         | 7                                             |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 4                     |                                                                |                                                                                                                                                                                              |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             |                       | 6       | SS   | 10         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 5                     |                                                                |                                                                                                                                                                                              |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 6                     |                                                                | (SP) gravelly SAND, trace fines; brown,<br>non-cohesive, wet, dense                                                                                                                          |             | 181.36                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             | 5.56                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             |                       | 7       | SS   | 37         |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             | 180.37                |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                |                                                                                                                                                                                              |             | 6.55                  |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 7                     |                                                                | END OF BOREHOLE                                                                                                                                                                              |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
|                       |                                                                | Notes:<br><br>1. Borehole caved to a depth of 2.1 m<br>below ground surface upon completion<br>of drilling.<br><br>2. Groundwater measured at ground<br>surface upon completion of drilling. |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 8                     |                                                                |                                                                                                                                                                                              |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 9                     |                                                                |                                                                                                                                                                                              |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |
| 10                    |                                                                |                                                                                                                                                                                              |             |                       |         |      |            |                                               |  |  |  |                                                                     |  |  |  |                            |                                               |                       |  |  |  |

DEPTH SCALE

1 : 50



LOGGED: AK

CHECKED: EW

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-135

SHEET 1 OF 1

LOCATION: SEE FIGURE 1

BORING DATE: March 9, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSUB\BURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                                                                                                           |                                                                                                       |                                                                                    | SAMPLES        |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                                                                                                                                            | STRATA PLOT                                                                                           | ELEV.<br>DEPTH<br>(m)                                                              | NUMBER         | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                                        |                                                                                                       |                                                                                    |                |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                                        |                                                                                                       |                                                                                    |                |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                                        |                                                                                                       |                                                                                    |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                                                                                                                                         |                                                                                                       | 187.58                                                                             |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - TOPSOIL                                                                                                                                                                                                         |                      | 0.00                                                                               |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                | FILL - (CL) SILTY CLAY, some sand,<br>trace gravel; brown, organic matter;<br>cohesive, w>PL, firm                                                                                                                     |                      | 187.28<br>0.30                                                                     | 1              | SS   | 5          |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                | (Cl) sandy SILTY CLAY, trace gravel;<br>brown, oxidation staining; cohesive,<br>w<PL to w>PL, firm to stiff                                                                                                            |                      | 186.90<br>0.69                                                                     |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 1                     |                                                                |                                                                                                                                                                                                                        |                                                                                                       | 2                                                                                  | SS             | 10   |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                                        |                                                                                                       | 3                                                                                  | SS             | 8    |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 2                     |                                                                |                                                                                                                                                                                                                        |                                                                                                       | 4                                                                                  | SS             | 13   |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 3                     |                                                                |                                                                                                                                                                                                                        | (SP) SAND, some silt, trace gravel to<br>SAND and GRAVEL; brown;<br>non-cohesive, wet, loose to dense |  | 184.69<br>2.90 | 5    | SS         | 6                                             |    |    |    |                                    |        |            |        |                            |                                               |
| 4                     |                                                                |                                                                                                                                                                                                                        |                                                                                                       |                                                                                    |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 5                     |                                                                |                                                                                                                                                                                                                        |                                                                                                       |                                                                                    | 6              | SS   | 13         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 6                     |                                                                |                                                                                                                                                                                                                        |                                                                                                       |                                                                                    |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                                        |                                                                                                       |                                                                                    | 7              | SS   | 30         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                | END OF BOREHOLE                                                                                                                                                                                                        |                                                                                                       | 181.03<br>6.55                                                                     |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 7                     |                                                                | Notes:<br><br>1. Borehole caved to a depth of 2.1 m<br>below ground surface upon completion<br>of drilling.<br><br>2. Groundwater measured at a depth of<br>0.6 m below ground surface upon<br>completion of drilling. |                                                                                                       |                                                                                    |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 8                     |                                                                |                                                                                                                                                                                                                        |                                                                                                       |                                                                                    |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 9                     |                                                                |                                                                                                                                                                                                                        |                                                                                                       |                                                                                    |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 10                    |                                                                |                                                                                                                                                                                                                        |                                                                                                       |                                                                                    |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: AK

CHECKED: EW

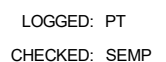
LOCATION: SEE FIGURE 1

## BORING DATE: March 22, 2017

DATUM: Geodetic

22-MAR-17

1 : 50



PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-137**

BORING DATE: March 22, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                                                                         |             | SAMPLES               |        |             | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                                |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-------------|-----------------------------------------------|--------------------------------|----|----|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|
|                       |                                                                 | DESCRIPTION                                                                                                                                          | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE        | BLOWS/0.3m                                    |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               | SHEAR STRENGTH<br>Cu, kPa      |    |    |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               | 20                             | 40 | 60 | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup>           |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               | nat V. + Q -<br>rem V. ⊕ U - ● |    |    |                                    | Wp   W   Wi           |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               | 20                             | 40 | 60 | 80                                 | 10                    | 20               | 30               | 40                         |                                               |  |
| 0                     |                                                                 | GROUND SURFACE                                                                                                                                       |             | 181.61                |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | TOPSOIL                                                                                                                                              |             | 0.00<br>0.09          |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 | (CL) sandy SILTY CLAY; brown,<br>oxidation staining; cohesive, w~PL, firm<br>to stiff<br><br>- rootlets encountered between 0.1 m<br>and 0.8 m depth |             |                       | 1      | SS          | 4                                             |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       | 2      | SS          | 8                                             |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       | 3      | SS          | 12                                            |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             | 4                     | SS     | 11          |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             | 5                     | SS     | 23          |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             | 6                     | SS     | 13          |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             | 7                     | SS     | 23          |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             | 8                     | SS     | 51          |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             | 9                     | SS     | 50/<br>0.08 |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 | (SM) SILTY SAND; brown; non-cohesive,<br>moist to wet, compact to very dense                                                                         |             | 179.48<br>2.13        |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |
|                       |                                                                 |                                                                                                                                                      |             |                       |        |             |                                               |                                |    |    |                                    |                       |                  |                  |                            |                                               |  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-137

BORING DATE: March 22, 2017

SHEET 2 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                     |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                      |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|--------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                                      | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                  |                            |                                               |                  |
|                       |               |                                                                                                                  |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —<br>(SM) SILTY SAND; brown; non-cohesive,<br>moist to wet, compact to very dense |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 11                    |               |                                                                                                                  |             | 170.49<br>11.13       | 10      | SS   | 84                                            |                           |    |                                |                                    |                                      | ○                |                  |                            |                                               |                  |
| 12                    |               | END OF BOREHOLE                                                                                                  |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                                                  |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                                                  |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                                                  |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                                                  |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                                                  |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                                                  |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                                                  |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                                                  |             |                       |         |      |                                               |                           |    |                                |                                    |                                      |                  |                  |                            |                                               |                  |

DEPTH SCALE  
1 : 50



LOGGED: MB  
CHECKED: EW



PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-138**

BORING DATE: March 22, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                              |                                                                              |                       | SAMPLES        |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |        |            |        | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------|----------------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|--------|------------|--------|----------------------------|-----------------------------------------------|
|                       |                                                                 | DESCRIPTION                                                                                               | STRATA PLOT                                                                  | ELEV.<br>DEPTH<br>(m) | NUMBER         | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            | 20                                            | 40 | 60 | 80 | nat V.<br>rem V.                   | +<br>⊕ | Q -<br>U - | ●<br>○ |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 0                     |                                                                 | GROUND SURFACE                                                                                            |                                                                              | 182.33                |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | TOPSOIL                                                                                                   |                                                                              | 0.00                  |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 | (CL) sandy SILTY CLAY, some gravel;<br>brown, oxidation staining; compact,<br>w~PL to w>PL, firm to stiff |                                                                              | 0.15                  | 1              | SS   | 6          |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 | -rootlets encountered between 0.7 m and<br>0.9 m depth                                                    |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 1                     |                                                                 |                                                                                                           |                                                                              |                       | 2              | SS   | 11         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 2                     |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           | (SM) SILTY SAND, some gravel; brown;<br>non-cohesive, wet, compact           |                       | 180.20<br>2.13 | 4    | SS         | 16                                            |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 3                     |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           | (ML) sandy SILT, some gravel; brown,<br>(TILL); non-cohesive, moist, compact |                       | 179.44<br>2.90 | 5    | SS         | 21                                            |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 | - auger grinding at 3.7 m depth on<br>cobble or boulder                                                   |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 4                     |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 | (SM) SILTY SAND; grey; non-cohesive,<br>wet, compact to dense                                             |                                                                              | 178.29<br>4.04        |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       | 6              | SS   | 11         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 5                     |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 6                     |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 | -becoming coarser with depth                                                                              |                                                                              |                       | 7              | SS   | 17         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 7                     |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 8                     |                                                                 |                                                                                                           |                                                                              |                       | 8              | SS   | 37         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 9                     |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       | 9              | SS   | 25         |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 | END OF BOREHOLE                                                                                           |                                                                              | 172.73<br>9.60        |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
| 10                    |                                                                 |                                                                                                           |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |
|                       |                                                                 | CONTINUED NEXT PAGE                                                                                       |                                                                              |                       |                |      |            |                                               |    |    |    |                                    |        |            |        |                            |                                               |

  
 22-MAR-17

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-138

SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 22, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                  |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                            | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|-----------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. U - |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |
|                       |               |                                                                                               |             |                       |         |      |                                               | 20                        | 40 | 60                         | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |               | --- CONTINUED FROM PREVIOUS PAGE ---                                                          |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 10                    |               | Notes:                                                                                        |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |               | 1. Groundwater encountered during drilling at a depth of 6.1 m below ground surface.          |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 11                    |               | 2. Borehole caved to a depth of 5.5 m below ground surface upon completion of drilling.       |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
|                       |               | 3. Groundwater measured at a depth of 4.6 m below ground surface upon completion of drilling. |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                               |             |                       |         |      |                                               |                           |    |                            |                                    |                       |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-139**

BORING DATE: March 23, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                  |                                         |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                 |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |   |    |   |
|-----------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|-----------------|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|---|----|---|
|                       |                                                                 | DESCRIPTION                                                                   | STRATA PLOT                             | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH                                |    |                 |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       |         |      |            | Cu, kPa                                       |    | nat V. + rem V. |    | Q - U                              |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       |         |      |            | 20                                            | 40 | 60              | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |   | Wp | W |
|                       |                                                                 |                                                                               |                                         |                       |         |      |            | 20                                            | 40 | 60              | 80 | 10                                 | 20               | 30               | 40               |                            |                                               |   |    |   |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | GROUND SURFACE                                                                |                                         | 183.95                |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            | A                                             | B |    |   |
|                       |                                                                 | TOPSOIL                                                                       |                                         | 0.00                  |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 | (CL) SILTY CLAY, trace gravel; brown, organic matter, rootlets; w>PL, firm    |                                         | 0.14                  | 1       | SS   | 5          |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
| 1                     |                                                                 |                                                                               |                                         |                       | 2       | SS   | 7          |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 | (CI) SILTY CLAY; brown; cohesive, w>PL, stiff                                 |                                         | 182.58                |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         | 1.37                  |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       | 3       | SS   | 10         |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
| 2                     |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               | - oxidation staining above 2.1 m depth. |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               | - becoming grey at of 2.1 m depth.      |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       |         | 4    | SS         | 8                                             |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
| 3                     |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       |         | 5    | SS         | 9                                             |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
| 4                     |                                                                 | (ML) SILT, some sand, some gravel; grey, (TILL); non-cohesive, moist, compact |                                         | 179.91                |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         | 4.04                  |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       | 6       | SS   | 18         |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
| 5                     |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
| 6                     |                                                                 |                                                                               |                                         |                       | 7       | SS   | 30         |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
| 7                     |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 | (ML/SM) sandy SILT to SILTY SAND; grey; non-cohesive, wet, loose to compact   |                                         | 176.79                |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         | 7.16                  |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 | - Samples 8 and 9 distured due to heaving sand                                |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       | 8       | SS   | 4          |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
| 8                     |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       | 9       | SS   | 7          |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
| 9                     |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
| 10                    |                                                                 |                                                                               |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |
|                       |                                                                 | CONTINUED NEXT PAGE                                                           |                                         |                       |         |      |            |                                               |    |                 |    |                                    |                  |                  |                  |                            |                                               |   |    |   |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-139

BORING DATE: March 23, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJL/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                   |             |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                      |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                       |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |   |    |   |
|-----------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------|-------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----------------------|----|------------------------------------|------------------|-----------------------|------------------|----------------------------|-----------------------------------------------|---|----|---|
|                       |                                                                 | DESCRIPTION                                                                    | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. +<br>rem V. ⊕ |    | Q - ●<br>U - ○                     |                  | WATER CONTENT PERCENT |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            | 20                                            | 40 | 60                   | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup>      | 10 <sup>-3</sup> |                            |                                               |   | Wp | W |
|                       |                                                                 |                                                                                |             |                       |         |      |            | 20                                            | 40 | 60                   | 80 | 10                                 | 20               | 30                    | 40               |                            |                                               |   |    |   |
| 10                    | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | — CONTINUED FROM PREVIOUS PAGE —                                               |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            | A                                             | B |    |   |
|                       |                                                                 | (ML/SM) sandy SILT to SILTY SAND;<br>grey; non-cohesive, wet, loose to compact |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
| 11                    |                                                                 |                                                                                |             |                       | 10      | SS   | 10         |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 | (SP) gravelly SAND, some fines; grey;<br>non-cohesive, wet, dense              |             | 172.37<br>11.58       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
| 12                    |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |
|                       |                                                                 |                                                                                |             |                       |         |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |   |    |   |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-140**

BORING DATE: March 22 and 23, 2017

SHEET 1 OF 1

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                    | SOIL PROFILE                                                                                 |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                                   |
|-----------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|-----------------------------------|
|                       |                                                                  | DESCRIPTION                                                                                  | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ● |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup>                  |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10                    | 20               | 30               | 40                         |                                               |                                   |
| 0                     |                                                                  | GROUND SURFACE                                                                               |             | 186.84                |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. - Hollow Stem Auger | TOPSOIL                                                                                      |             | 0.00                  |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  | (CL) SILTY CLAY to sandy SILTY CLAY;<br>brown; cohesive, w~PL to w>PL, firm to<br>very stiff |             | 0.15                  | 1       | SS   | 4                                             |                           |    |                                |                                    |                       |                  | ○                |                            |                                               | 50 mm Diameter<br>Monitoring Well |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
| 1                     |                                                                  |                                                                                              |             | 2                     | SS      | 11   |                                               |                           |    |                                |                                    |                       | ○                |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             | 3                     | SS      | 10   |                                               |                           |    |                                |                                    |                       |                  | ○                |                            |                                               |                                   |
| 2                     |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               | Bentonite                         |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              | 4           | SS                    | 17      |      |                                               |                           |    |                                |                                    |                       |                  | ○                |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
| 3                     |                                                                  |                                                                                              | 5           | SS                    | 15      |      |                                               |                           |    |                                |                                    |                       | ○                |                  |                            |                                               |                                   |
| 4                     |                                                                  | (SM) gravelly SILTY SAND; grey, (TILL);<br>non-cohesive, moist, compact to dense             |             | 182.80                |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               | MH                                |
|                       |                                                                  |                                                                                              |             | 4.04                  |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
| 5                     |                                                                  |                                                                                              | 6           | SS                    | 12      |      |                                               |                           |    |                                |                                    |                       |                  | ○                |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
| 6                     |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               | Silica Sand and<br>Screen         |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |
|                       |                                                                  |                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                                   |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

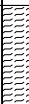
PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-141

BORING DATE: March 7, 2017

SHEET 1 OF 2  
DATUM: Geodetic

GTA-BHS 001 \GOLDER\GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                              |                                                                                     | SAMPLES                                                                           |                | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                                      |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |  |  |
|-----------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|--------------------------------------|------------------|----------------------------|-----------------------------------------------|--|--|--|
|                       |                                                                | DESCRIPTION                                                                                                               | STRATA PLOT                                                                         | ELEV.<br>DEPTH<br>(m)                                                             | NUMBER         | TYPE                                          | BLOWS/0.3m |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            | SHEAR STRENGTH<br>Cu, kPa |    |                                    |    | WATER CONTENT PERCENT<br>Wp   W   Wi |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup>           | 10 <sup>-3</sup>                              |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 0                     |                                                                | GROUND SURFACE                                                                                                            |                                                                                     | 190.16<br>0.00                                                                    |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL becoming (CL) SILTY CLAY;<br>brown, rootlets; cohesive, w<PL, firm                                                |    |                                                                                   | 1              | SS                                            | 6          |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                | (ML) sandy CLAYEY SILT, some gravel;<br>brown, rootlets and organic matter to 1.4<br>m depth; cohesive, w~PL t w<PL, firm |    | 189.48<br>0.69                                                                    |                | 2                                             | SS         | 7                         |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 1                     |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                | 3                                             | SS         | 7                         |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 2                     |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           | (ML) sandy SILT, some gravel; grey;<br>non-cohesive, moist, compact to dense        |  | 188.03<br>2.13 |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           | - auger grinding at 2.7 m depth on<br>cobble or boulder                             |                                                                                   |                | 4                                             | SS         | 28                        |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 3                     |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           | - becoming grey at 3.4 m depth                                                      |                                                                                   |                | 5                                             | SS         | 22                        |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 4                     |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   | 6              | SS                                            | 13         |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 5                     |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                | - auger grinding at 5.2 m depth on<br>cobble or boulder                                                                   |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 6                     |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   | 7              | SS                                            | 32         |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 7                     |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   | 8              | SS                                            | 17         |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 8                     |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                | (SP) SAND, some fines, trace gravel;<br>grey; non-cohesive, wet, very loose to<br>dense                                   |  | 181.63<br>8.53                                                                    |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 9                     |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                | - Samples 9 and 11 disturbed due to<br>heaving sand                                                                       |                                                                                     |                                                                                   | 9              | SS                                            | WH         |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
| 10                    |                                                                |                                                                                                                           |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |
|                       |                                                                | CONTINUED NEXT PAGE                                                                                                       |                                                                                     |                                                                                   |                |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |  |  |  |

DEPTH SCALE  
1 : 50



LOGGED: AP  
CHECKED: EW

08-MAR-17

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-141**

BORING DATE: March 7, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                                                                                                  |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |                                                                | DESCRIPTION                                                                                                                                                                                                   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | RESISTANCE, BLOWS/0.3m    |    |                                |                                    | k, cm/s               |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                                                                                                                               |             |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ● |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                                                                                                                               |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |                                                                |                                                                                                                                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 10                    | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | — CONTINUED FROM PREVIOUS PAGE —                                                                                                                                                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 11                    |                                                                | (SP) SAND, some fines, trace gravel;<br>grey; non-cohesive, wet, very loose to<br>dense                                                                                                                       |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                                                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 12                    |                                                                | - becoming coarser at 11.7 m depth                                                                                                                                                                            |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                                                                                                                               |             | 177.51<br>12.65       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 13                    |                                                                | END OF BOREHOLE                                                                                                                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 14                    |                                                                | Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 9.1 m below ground<br>surface.<br><br>2. Borehole caved to a depth of 9.3 m<br>below ground surface upon completion<br>of drilling. |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 15                    |                                                                |                                                                                                                                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 16                    |                                                                |                                                                                                                                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 17                    |                                                                |                                                                                                                                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 18                    |                                                                |                                                                                                                                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 19                    |                                                                |                                                                                                                                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 20                    |                                                                |                                                                                                                                                                                                               |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: AP

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-142**

BORING DATE: March 8, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                              |                                                                                          |                                                                                    | SAMPLES        |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|
|                       |                                                                | DESCRIPTION                                                                                               | STRATA PLOT                                                                              | ELEV.<br>DEPTH<br>(m)                                                              | NUMBER         | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                | GROUND SURFACE                                                                                            |                                                                                          | 191.71                                                                             |                |      |            | 20                                            | 40 | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |  |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                                   |         | 0.00<br>191.53                                                                     |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                | (CL) sandy SILTY CLAY, trace gravel;<br>brown, organic matter, rootlets;<br>cohesive, w>PL to w<PL, stiff |         | 0.18                                                                               | 1              | SS   | 8          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 1                     |                                                                |                                                                                                           |                                                                                          |                                                                                    |                | 2    | SS         | 11                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           | (ML) sandy SILT; brown, oxidation<br>staining; non-cohesive, wet, compact                |   | 190.34<br>1.37 |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           | - 2 mm sand seam encountered at 1.8 m<br>depth                                           |   |                | 3    | SS         | 10                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           |                                                                                          |                                                                                    |                | 4    | SS         | 13                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 2                     |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           | (ML) sandy SILT, some gravel; brown,<br>(TILL); non-cohesive, moist, compact to<br>dense |   | 188.82<br>2.90 |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           |                                                                                          |                                                                                    |                | 5    | SS         | 19                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 3                     |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           | - becoming grey at 4.0 m depth                                                           |  |                | 6    | SS         | 15                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 4                     |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 5                     |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 6                     |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           |                                                                                          |                                                                                    |                | 7    | SS         | 31                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 7                     |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                | (SM) SILTY SAND, trace gravel; grey;<br>non-cohesive, wet, compact to dense                               |       | 184.62<br>7.09                                                                     |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 8                     |                                                                | - Sample 8 disturbed due to heaving<br>sand                                                               |       |                                                                                    | 8              | SS   | 10         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 9                     |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                |                                                                                                           |                                                                                          |                                                                                    | 9              | SS   | 22         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
| 10                    |                                                                |                                                                                                           |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |
|                       |                                                                | CONTINUED NEXT PAGE                                                                                       |                                                                                          |                                                                                    |                |      |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |  |

DEPTH SCALE

1 : 50



LOGGED: AK

CHECKED: EW



PROJECT: 1413472

LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-142

BORING DATE: March 8, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                                                                                                           |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                       |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |    |  |  |  |  |  |  |  |  |  |  |
|-----------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|--------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|-----------------------|------------------|----------------------------|-----------------------------------------------|------------------|------------------|----|--|--|--|--|--|--|--|--|--|--|
|                       |                                                                | DESCRIPTION                                                                                                                                                                                                            | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U -       |    | WATER CONTENT PERCENT |                  |                            |                                               |                  |                  |    |  |  |  |  |  |  |  |  |  |  |
|                       |                                                                |                                                                                                                                                                                                                        |             |                       |        |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> |                            |                                               | 10 <sup>-4</sup> | 10 <sup>-3</sup> |    |  |  |  |  |  |  |  |  |  |  |
| 10                    | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | — CONTINUED FROM PREVIOUS PAGE —<br>(SM) SILTY SAND, trace gravel; grey;<br>non-cohesive, wet, compact to dense                                                                                                        |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |    |  |  |  |  |  |  |  |  |  |  |
| 11                    |                                                                |                                                                                                                                                                                                                        |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               | 10               | SS               | 33 |  |  |  |  |  |  |  |  |  |  |
| 12                    |                                                                |                                                                                                                                                                                                                        |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               | 11               | SS               | 53 |  |  |  |  |  |  |  |  |  |  |
| 13                    |                                                                | END OF BOREHOLE                                                                                                                                                                                                        |             | 179.06                |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |    |  |  |  |  |  |  |  |  |  |  |
| 14                    |                                                                | Notes:<br><br>1. Borehole caved to a depth of 9.8 m<br>below ground surface upon completion<br>of drilling.<br><br>2. Groundwater measured at a depth of<br>5.8 m below ground surface upon<br>completion of drilling. |             | 12.65                 |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |    |  |  |  |  |  |  |  |  |  |  |
| 15                    |                                                                |                                                                                                                                                                                                                        |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |    |  |  |  |  |  |  |  |  |  |  |
| 16                    |                                                                |                                                                                                                                                                                                                        |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |    |  |  |  |  |  |  |  |  |  |  |
| 17                    |                                                                |                                                                                                                                                                                                                        |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |    |  |  |  |  |  |  |  |  |  |  |
| 18                    |                                                                |                                                                                                                                                                                                                        |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |    |  |  |  |  |  |  |  |  |  |  |
| 19                    |                                                                |                                                                                                                                                                                                                        |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |    |  |  |  |  |  |  |  |  |  |  |
| 20                    |                                                                |                                                                                                                                                                                                                        |             |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |                  |                  |    |  |  |  |  |  |  |  |  |  |  |

DEPTH SCALE

1 : 50



LOGGED: AK

CHECKED: EW

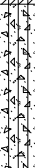
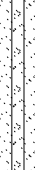
PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-143

BORING DATE: March 22, 2017

SHEET 1 OF 1  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                   | SOIL PROFILE                                                                                                                                                                                                           |                                                                                     |                                                                                   | SAMPLES        |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |                      |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                       |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------|------|------------|-----------------------------------------------|----|----------------------|----|------------------------------------|------------------|-----------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                 | DESCRIPTION                                                                                                                                                                                                            | STRATA PLOT                                                                         | ELEV.<br>DEPTH<br>(m)                                                             | NUMBER         | TYPE | BLOWS/0.3m |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. +<br>rem V. ⊕ |    | Q - ●<br>U - ○                     |                  | WATER CONTENT PERCENT |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            | 20                                            | 40 | 60                   | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup>      | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 0                     |                                                                 | GROUND SURFACE                                                                                                                                                                                                         |                                                                                     | 184.50<br>0.00                                                                    |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers | FILL - (CL) SILTY CLAY, some sand;<br>brown, organic matter, rootlets;<br>cohesive, w>PL, firm                                                                                                                         |    |                                                                                   | 1              | SS   | 7          |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 1                     |                                                                 | (CI) SILTY CLAY, some sand; brown,<br>oxidation staining; cohesive, w<PL, stiff<br>to firm                                                                                                                             |    | 183.82<br>0.69                                                                    | 2              | SS   | 10         |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 2                     |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   | 3              | SS   | 14         |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   | 4              | SS   | 7          |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 3                     |                                                                 |                                                                                                                                                                                                                        | (ML) sandy SILT, some gravel; grey,<br>(TILL); non-cohesive, moist, compact         |  | 181.61<br>2.90 | 5    | SS         | 15                                            |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 4                     |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   | 6              | SS   | 17         |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 5                     |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 6                     |                                                                 | (SM) SILTY SAND; grey; non-cohesive,<br>wet, dense                                                                                                                                                                     |  | 178.94<br>5.56                                                                    |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   | 7              | SS   | 32         |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 7                     |                                                                 | (ML) sandy CLAYEY SILT, some gravel;<br>grey, (TILL); cohesive, w<PL, hard                                                                                                                                             |  | 177.42<br>7.09                                                                    |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   | 8              | SS   | 39         |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 8                     |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 | END OF BOREHOLE                                                                                                                                                                                                        |                                                                                     | 176.43<br>8.08                                                                    |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 | Notes:<br><br>1. Borehole caved to a depth of 7.0 m<br>below ground surface upon completion<br>of drilling.<br><br>2. Groundwater measured at a depth of<br>6.1 m below ground surface upon<br>completion of drilling. |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 9                     |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
|                       |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |
| 10                    |                                                                 |                                                                                                                                                                                                                        |                                                                                     |                                                                                   |                |      |            |                                               |    |                      |    |                                    |                  |                       |                  |                            |                                               |

22-MAR-17

22-MAR-17

DEPTH SCALE  
1 : 50



LOGGED: MB  
CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-144

BORING DATE: March 22, 2017

SHEET 1 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                                           | SOIL PROFILE                                                                                                                 |                                                         |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |        |             | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |    |
|-----------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------|---------|------|------------|-----------------------------------------------|----|--------|-------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|----|
|                       |                                                                                         | DESCRIPTION                                                                                                                  | STRATA PLOT                                             | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    | nat V. | +<br>rem V. | Q -<br>U -                         | WATER CONTENT PERCENT |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            | 20                                            | 40 | 60     | 80          | 10 <sup>-6</sup>                   | 10 <sup>-5</sup>      | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               | Wp |
|                       |                                                                                         | GROUND SURFACE                                                                                                               |                                                         | 184.17                |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 0                     | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers                         | TOPSOIL                                                                                                                      |                                                         | 0.00                  |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         | (CI) SILTY CLAY, trace to some sand;<br>brown, mottled, oxidation staining;<br>cohesive, w~PL to w>PL, firm to very<br>stiff |                                                         | 0.14                  | 1       | SS   | 6          |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 1                     |                                                                                         | 2                                                                                                                            | SS                                                      | 10                    |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         | 3                                                                                                                            | SS                                                      | 18                    |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 2                     |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         | (ML) sandy CLAYEY SILT, some gravel;<br>brown to grey, (TILL); cohesive, w<PL,<br>very stiff                                 |                                                         | 182.04                |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         | 2.13                  | 4       | SS   | 18         |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 3                     |                                                                                         |                                                                                                                              | - auger grinding at 2.2 m depth on<br>cobble or boulder |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         | 5                                                                                                                            | SS                                                      | 15                    |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 4                     |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       | (ML) sandy SILT, some gravel; grey,<br>(TILL); non-cohesive, moist, compact to<br>dense |                                                                                                                              | 180.13                                                  |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              | 4.04                                                    | 6                     | SS      | 21   |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 5                     |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 6                     |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       | 7                                                                                       |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 7                     |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 8                     |                                                                                         | - 0.45 m grey, wet, silty sand layer at 7.6<br>m depth                                                                       |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 9                     |                                                                                         | - auger grinding at 8.5 m depth on<br>cobble or boulder                                                                      |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
| 10                    |                                                                                         |                                                                                                                              |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |
|                       |                                                                                         | CONTINUED NEXT PAGE                                                                                                          |                                                         |                       |         |      |            |                                               |    |        |             |                                    |                       |                  |                  |                            |                                               |    |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

  
22-MAR-17

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

## RECORD OF BOREHOLE: 17-144

BORING DATE: March 22, 2017

SHEET 2 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURYCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 J.LJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                                           |                                                                                   | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                                      |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|--------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|--------------------------------------|------------------|----------------------------|-----------------------------------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                                            | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q - ●<br>rem V. ⊕ U - ○   |    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                            |                                               |
|                       |               |                                                                                                                                                                                                                        |                                                                                   |                       |        |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> |                            |                                               |
|                       |               | — CONTINUED FROM PREVIOUS PAGE —                                                                                                                                                                                       |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 10                    |               | (SP) gravelly SAND; grey; non-cohesive,<br>wet, dense                                                                                                                                                                  |  | 174.04<br>10.13       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 11                    |               |                                                                                                                                                                                                                        |                                                                                   |                       | 10     | SS                                            | 36         |                           |    |                                    |    |                                      |                  |                            |                                               |
|                       |               | END OF BOREHOLE                                                                                                                                                                                                        |                                                                                   | 173.05<br>11.13       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
|                       |               | Notes:<br><br>1. Borehole caved to a depth of 9.8 m<br>below ground surface upon completion<br>of drilling.<br><br>2. Groundwater measured at a depth of<br>8.5 m below ground surface upon<br>completion of drilling. |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 12                    |               |                                                                                                                                                                                                                        |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 13                    |               |                                                                                                                                                                                                                        |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 14                    |               |                                                                                                                                                                                                                        |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 15                    |               |                                                                                                                                                                                                                        |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 16                    |               |                                                                                                                                                                                                                        |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 17                    |               |                                                                                                                                                                                                                        |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 18                    |               |                                                                                                                                                                                                                        |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 19                    |               |                                                                                                                                                                                                                        |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |
| 20                    |               |                                                                                                                                                                                                                        |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |

DEPTH SCALE  
1 : 50



LOGGED: MB  
CHECKED: EW

PROJECT: 1413472

# RECORD OF BOREHOLE: 17-145

SHEET 1 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 23, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 J.JL/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                        |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |                                                                | DESCRIPTION                                                                                         | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ● |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
|                       |                                                                |                                                                                                     |             |                       |         |      |                                               | 20                        | 40 | 60                             | 80                                 | 10                    | 20               | 30               | 40                         |                                               |                  |
| 0                     |                                                                | GROUND SURFACE                                                                                      |             | 192.75                |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - OPSOIL                                                                                       |             | 0.00<br>192.57        |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                | FILL - (CL) sandy SILTY CLAY; brown,<br>rootlets; cohesive, w~PL, firm                              |             | 0.18                  | 1       | SS   | 7                                             |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                | (CL) SILTY CLAY, some sand; brown,<br>rootlets; cohesive, w>PL, firm                                |             | 192.06<br>0.69        |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 1                     |                                                                |                                                                                                     |             |                       | 2       | SS   | 4                                             |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                | (ML) sandy SILT, some gravel; brown,<br>oxidation staining, (TILL); non-cohesive,<br>moist, compact |             | 191.38<br>1.37        |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 2                     |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       |         | 4    | SS                                            | 17                        |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 3                     |                                                                | (CL) SILTY CLAY, some sand, some<br>gravel; grey, (TILL); cohesive, w<PL,<br>hard                   |             | 189.86<br>2.90        |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       | 5       | SS   | 62                                            |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 4                     |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                | - auger grinding between 4.3 m and 4.6<br>m on boulder                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                | - auger grinding between 4.6 m and 5.5<br>m on boulder                                              |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 5                     |                                                                |                                                                                                     |             |                       | 6       | SS   | 49                                            |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 6                     |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       | 7       | SS   | 54                                            |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 7                     |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       | 8       | SS   | 65/<br>0.28                                   |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 8                     |                                                                | - SPT hammer bouncing at 8.1 m depth                                                                |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 9                     |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                |                                                                                                     |             |                       | 9       | SS   | 50/<br>0.10                                   |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                | END OF BOREHOLE                                                                                     |             | 183.36<br>9.39        |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
| 10                    |                                                                |                                                                                                     |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |
|                       |                                                                | CONTINUED NEXT PAGE                                                                                 |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-145**

BORING DATE: March 23, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURYCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                      |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                              | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                      |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|------------------------------|------------------------------------|--------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                                                                       | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - |                                    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                  |                            |                                               |                  |
|                       |               |                                                                                                                                                   |             |                       |         |      |                                               | 20                        | 40 | 60                           | 80                                 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —                                                                                                                  |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |
| 11                    |               | Notes:<br>1. Borehole caved to a depth of 7.9 m below ground surface upon completion of drilling.<br>2. Borehole dry upon completion of drilling. |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                              |                                    |                                      |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-146

BORING DATE: March 7, 2017

SHEET 1 OF 1  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                            |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                       |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |      |  |
|-----------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|--------------------------------|------------------------------------|-----------------------|------------------|------------------|----------------------------|-----------------------------------------------|------|--|
|                       |                                                                | DESCRIPTION                                                                             | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ⊙ |                                    | WATER CONTENT PERCENT |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    | Wp — W — Wi           |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      | 20                                            | 40                        | 60 | 80                             |                                    | 10 <sup>-6</sup>      | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup>           |                                               |      |  |
| 0                     |                                                                | GROUND SURFACE                                                                          |             | 195.79                |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                 |             | 0.00                  |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                | (CL) SILTY CLAY, trace sand, trace gravel; brown; cohesive, w>PL to w~PL, firm to stiff |             | 195.44                | 1A      | SS   | 6                                             |                           |    |                                |                                    |                       |                  |                  |                            |                                               | 51.8 |  |
|                       |                                                                |                                                                                         |             | 0.35                  | 1B      |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                | (ML) sandy SILT, trace gravel; brown; non-cohesive, moist, compact                      |             | 194.77                | 2A      | SS   | 13                                            |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             | 1.01                  | 2B      |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
| 1                     |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                | - becoming grey at 2.4 m depth                                                          |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
| 2                     |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       | - sand and gravel seam at 3.4 m depth                          |                                                                                         |             | 3                     | SS      | 19   |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
| 3                     |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
| 4                     |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
| 5                     |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
| 6                     |                                                                | (SM) SAND; grey; non-cohesive, wet, dense                                               |             | 190.23                |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             | 5.56                  |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |
|                       |                                                                |                                                                                         |             |                       |         |      |                                               |                           |    |                                |                                    |                       |                  |                  |                            |                                               |      |  |

DEPTH SCALE

1 : 50



LOGGED: AP  
CHECKED: EW

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-147**

BORING DATE: March 24, 2017

SHEET 1 OF 2

DATUM: Geodetic

[illegible]

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

\\GOLDER.GDS\GAL\SUBBURY\CAD-GIS\SIM\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017 GPJ GAL-MIS.GDT 10/17/17 JLT/BTB



PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-147**

BORING DATE: March 24, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\UBUR\YCAD-GIS\IMC\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                    |                                                                                   | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                                      |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|--------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|--------------------------------------|------------------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |               | DESCRIPTION                                                                                                                                                     | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ○     |    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                            |                                               |                  |                  |
|                       |               |                                                                                                                                                                 |                                                                                   |                       |        |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> |                            |                                               | 10 <sup>-4</sup> | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —<br>(CL-ML) SILTY CLAY to CLAYEY SILT,<br>some sand, trace to some gravel; brown,<br>(TILL); cohesive, w<PL, very stiff to hard |  |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 11                    |               |                                                                                                                                                                 |                                                                                   | 183.49<br>11.13       | 10     | SS                                            | 66         |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 12                    |               | END OF BOREHOLE<br><br>Note:<br><br>1. Groundwater encountered during<br>drilling at a depth of 0.8 m below ground<br>surface.                                  |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 13                    |               |                                                                                                                                                                 |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 14                    |               |                                                                                                                                                                 |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 15                    |               |                                                                                                                                                                 |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 16                    |               |                                                                                                                                                                 |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 17                    |               |                                                                                                                                                                 |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 18                    |               |                                                                                                                                                                 |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 19                    |               |                                                                                                                                                                 |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |
| 20                    |               |                                                                                                                                                                 |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                                      |                  |                            |                                               |                  |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472

## RECORD OF BOREHOLE: 17-148

SHEET 1 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 24, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                                 | SOIL PROFILE                                                                                                |                |                       | SAMPLES |      |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |     |       |       | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |                  |
|-----------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|----------------|-----------------------|---------|------|------------|-----------------------------------------------|----|----|----|------------------------------------|-----|-------|-------|----------------------------|-----------------------------------------------|------------------|------------------|
|                       |                                                                               | DESCRIPTION                                                                                                 | STRATA PLOT    | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               |                                                                                                             |                |                       |         |      |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               |                                                                                                             |                |                       |         |      |            | 20                                            | 40 | 60 | 80 | nat V. rem V.                      | + ⊕ | Q - U | ● - ○ |                            |                                               | 10 <sup>-6</sup> | 10 <sup>-5</sup> |
|                       |                                                                               |                                                                                                             |                |                       |         |      |            | 20                                            | 40 | 60 | 80 |                                    |     | 10    | 20    | 30                         | 40                                            |                  |                  |
| 0                     |                                                                               | GROUND SURFACE                                                                                              |                | 193.20                |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Augers               | FILL - TOPSOIL                                                                                              |                | 0.00<br>0.09          |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               | FILL - (Cl) SILTY CLAY; brown, organic matter, oxidation staining; cohesive, w>PL to w~PL, firm             |                |                       | 1       | SS   | 7          |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               |                                                                                                             |                |                       |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
| 1                     |                                                                               |                                                                                                             |                |                       | 2       | SS   | 6          |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               |                                                                                                             |                |                       |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               |                                                                                                             |                |                       | 3       | SS   | 6          |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
| 2                     |                                                                               |                                                                                                             |                |                       |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               | (Cl) SILTY CLAY, trace sand, trace gravel; brown, (TILL), oxidation staining; cohesive, w>PL to w<PL, stiff |                | 191.07<br>2.13        | 4       | SS   | 12         |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
| 3                     |                                                                               |                                                                                                             |                |                       |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               |                                                                                                             |                |                       | 5       | SS   | 9          |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
| 4                     |                                                                               |                                                                                                             |                |                       |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               | (SP) SAND, trace fines; grey; non-cohesive, wet, dense                                                      |                | 189.16<br>4.04        |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
| 5                     |                                                                               |                                                                                                             |                |                       |         | 6A   | SS         | 45                                            |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               | (Cl) SILTY CLAY, trace sand, trace gravel; grey, (TILL); cohesive, w<PL, hard                               |                | 188.32<br>4.88        | 6B      |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
| 6                     |                                                                               |                                                                                                             |                |                       |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       | (SP) SAND, trace fines; grey; non-cohesive, wet, very dense                   |                                                                                                             | 187.56<br>5.64 |                       |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
| 7                     |                                                                               |                                                                                                             |                |                       | 7A      |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       | (Cl) SILTY CLAY, trace sand, trace gravel; grey, (TILL); cohesive, w<PL, hard |                                                                                                             | 186.95<br>6.25 | 7B                    | SS      | 73   |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
| 8                     |                                                                               |                                                                                                             |                |                       | 8       | SS   | 86         |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
| 9                     |                                                                               |                                                                                                             |                |                       | 9       | SS   | 62         |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
| 10                    |                                                                               |                                                                                                             |                |                       |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |
|                       |                                                                               | CONTINUED NEXT PAGE                                                                                         |                |                       |         |      |            |                                               |    |    |    |                                    |     |       |       |                            |                                               |                  |                  |

CONTINUED NEXT PAGE

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-148**

BORING DATE: March 24, 2017

SHEET 2 OF 2

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURYCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 J.LJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                                  |                                                                                   | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |            |                           |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |    |                       |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|--------|-----------------------------------------------|------------|---------------------------|----|------------------------------------|----|-----------------------|------------------|----------------------------|-----------------------------------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                                   | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE                                          | BLOWS/0.3m | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ○     |    | WATER CONTENT PERCENT |                  |                            |                                               |
|                       |               |                                                                                                                                                                                                               |                                                                                   |                       |        |                                               |            | 20                        | 40 | 60                                 | 80 | 10 <sup>-6</sup>      | 10 <sup>-5</sup> |                            |                                               |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —<br>(CL) SILTY CLAY, trace sand, trace<br>gravel; grey, (TILL); cohesive, w<PL,<br>hard                                                                                       |  |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 11                    |               |                                                                                                                                                                                                               |                                                                                   | 182.08<br>11.13       | 10     | SS                                            | 61         |                           |    |                                    |    |                       |                  |                            |                                               |
| 12                    |               | END OF BOREHOLE                                                                                                                                                                                               |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 13                    |               | Notes:<br><br>1. Groundwater encountered during<br>drilling at a depth of 4.6 m below ground<br>surface.<br><br>2. Borehole caved to a depth of 4.6 m<br>below ground surface upon completion<br>of drilling. |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 14                    |               |                                                                                                                                                                                                               |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 15                    |               |                                                                                                                                                                                                               |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 16                    |               |                                                                                                                                                                                                               |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 17                    |               |                                                                                                                                                                                                               |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 18                    |               |                                                                                                                                                                                                               |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 19                    |               |                                                                                                                                                                                                               |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |
| 20                    |               |                                                                                                                                                                                                               |                                                                                   |                       |        |                                               |            |                           |    |                                    |    |                       |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: PT

CHECKED: EW

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-149

BORING DATE: March 7, 2017

SHEET 1 OF 1  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                                                                                                                               |                                                      |                       | SAMPLES |      |             | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------|---------|------|-------------|-----------------------------------------------|----|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                                                                                                                                | STRATA PLOT                                          | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m  |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                            |                                                      |                       |         |      |             | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                            |                                                      |                       |         |      |             |                                               |    |    |    | Wp — W — Wi                        |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                            |                                                      |                       |         |      |             | 20                                            | 40 | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                                                                                                                             |                                                      | 196.63                |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | TOPSOIL                                                                                                                                                                                                    |                                                      | 0.00                  | 1A      | SS   | 7           |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (CL) SILTY CLAY, some sand, some gravel; brown, rootlets; cohesive, w~PL, firm                                                                                                                             |                                                      | 196.32<br>0.30        | 1B      |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (ML) sandy SILT, some gravel, some to trace plastic fines; brown, (TILL); non-cohesive, moist, compact to very dense                                                                                       |                                                      | 195.94<br>0.69        |         | 2    | SS          | 21                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                |                                                                                                                                                                                                            |                                                      |                       |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | - becoming grey at 1.8 m depth                                                                                                                                                                             |                                                      |                       |         | 3    | SS          | 11                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                |                                                                                                                                                                                                            | - auger grinding at 2.0 m depth on cobble or boulder |                       |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                            |                                                      |                       |         | 4    | SS          | 26                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                |                                                                                                                                                                                                            |                                                      |                       |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                            |                                                      |                       |         | 5    | SS          | 34                                            |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                |                                                                                                                                                                                                            | - auger grinding at 3.7 m depth on cobble or boulder |                       |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | (ML) SILT, some sand; grey; non-cohesive, moist, dense                                                                                                                                                     |                                                      | 192.59<br>4.04        |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                                |                                                                                                                                                                                                            |                                                      |                       | 6       | SS   | 45          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                                | (ML) sandy SILT, some gravel; grey, (TILL); non-cohesive, moist, dense to very dense                                                                                                                       |                                                      | 191.07<br>5.56        |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | - auger grinding at 6.7 m depth on cobble or boulder                                                                                                                                                       |                                                      |                       | 7       | SS   | 45          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                                |                                                                                                                                                                                                            |                                                      |                       |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                                                                                                                            |                                                      |                       | 8       | SS   | 50/<br>0.10 |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                                | END OF BOREHOLE                                                                                                                                                                                            |                                                      | 188.77<br>7.86        |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | Notes:<br><br>1. Borehole caved to a depth of 5.2 m below ground surface upon completion of drilling.<br><br>2. Groundwater measured at a depth of 3.4 m below ground surface upon completion of drilling. |                                                      |                       |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                                |                                                                                                                                                                                                            |                                                      |                       |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                                |                                                                                                                                                                                                            |                                                      |                       |         |      |             |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |

07-MAR-17

DEPTH SCALE  
1 : 50



LOGGED: AP  
CHECKED: EW

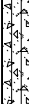
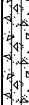
PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-150

BORING DATE: March 24, 2017

SHEET 1 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALSUBBURY\CAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\WORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                    |                                                                                   |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                      | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                       | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----------------------|------------------------------------|------------------|------------------|-----------------------|----------------------------|-----------------------------------------------|--|
|                       |                                                                | DESCRIPTION                                                                     | STRATA PLOT                                                                       | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                   |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    | nat V. +<br>rem V. ⊕ |                                    | Q - ●<br>U - ○   |                  | WATER CONTENT PERCENT |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                   |                       |         |      | 20                                            | 40                        | 60 | 80                   |                                    | 10 <sup>-6</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup>      | 10 <sup>-3</sup>           |                                               |  |
|                       |                                                                |                                                                                 |                                                                                   |                       |         |      |                                               |                           |    |                      | Wp — W — Wi                        |                  |                  |                       |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                   |                       |         |      | 20                                            | 40                        | 60 | 80                   |                                    | 10               | 20               | 30                    | 40                         |                                               |  |
| 0                     |                                                                | GROUND SURFACE                                                                  |                                                                                   | 195.80<br>0.00        |         |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | FILL - (CL) SILTY CLAY, some sand;<br>brown; cohesive, w>PL, firm               |  |                       | 1       | SS   | 4                                             |                           |    |                      |                                    |                  |                  | ○                     |                            |                                               |  |
|                       |                                                                | (CL) SILTY CLAY, some sand; brown,<br>oxidation staining; cohesive, w>PL, stiff |  | 195.11<br>0.69        |         | 2    | SS                                            | 14                        |    |                      |                                    |                  |                  | ○                     |                            |                                               |  |
| 1                     |                                                                | (ML) sandy SILT, some gravel; brown,<br>(TILL); moist, compact to very dense    |  | 194.43<br>1.37        |         | 3    | SS                                            | 25                        |    |                      |                                    |                  |                  | ○                     |                            |                                               |  |
|                       |                                                                | - oxidation staining above 2.1 m depth                                          |  |                       |         | 4    | SS                                            | 56                        |    |                      |                                    |                  |                  | ○                     |                            |                                               |  |
|                       |                                                                | - becoming grey at 2.1 m depth                                                  |  |                       |         | 5    | SS                                            | 50/<br>0.10               |    |                      |                                    |                  |                  | ○                     |                            |                                               |  |
| 2                     |                                                                |                                                                                 |                                                                                   |                       |         |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                   |                       |         | 6    | SS                                            | 50/<br>0.13               |    |                      |                                    |                  |                  | ○                     |                            |                                               |  |
| 3                     |                                                                |                                                                                 |                                                                                   |                       |         |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                   |                       |         | 7    | SS                                            | 46                        |    |                      |                                    |                  |                  | ○                     |                            |                                               |  |
| 4                     |                                                                |                                                                                 |                                                                                   |                       |         |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                   |                       | 8       | SS   | 77                                            |                           |    |                      |                                    |                  | ○                |                       |                            |                                               |  |
| 5                     |                                                                |                                                                                 |                                                                                   |                       |         |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                |                                                                                 |                                                                                   |                       | 9       | SS   | 74                                            |                           |    |                      |                                    |                  | ○                |                       |                            |                                               |  |
| 6                     |                                                                |                                                                                 |                                                                                   |                       |         |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                | END OF BOREHOLE                                                                 |                                                                                   | 186.20<br>9.60        |         |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
| 7                     |                                                                |                                                                                 |                                                                                   |                       |         |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |
|                       |                                                                | CONTINUED NEXT PAGE                                                             |                                                                                   |                       |         |      |                                               |                           |    |                      |                                    |                  |                  |                       |                            |                                               |  |

DEPTH SCALE  
1 : 50



LOGGED: MB  
CHECKED: EW

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-150

BORING DATE: March 24, 2017

SHEET 2 OF 2  
DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURYCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                      |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                      |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----------------------------------|------------------------------------|--------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                                                                       | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q - ●<br>rem V. ⊕ U - ○ |                                    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                  |                            |                                               |                  |
|                       |               |                                                                                                                                                   |             |                       |         |      |                                               | 20                        | 40 | 60                               | 80                                 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —                                                                                                                  |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 11                    |               | Notes:<br>1. Borehole caved to a depth of 8.2 m below ground surface upon completion of drilling.<br>2. Borehole dry upon completion of drilling. |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                                                                                   |             |                       |         |      |                                               |                           |    |                                  |                                    |                                      |                  |                  |                            |                                               |                  |

DEPTH SCALE  
1 : 50



LOGGED: MB  
CHECKED: EW

PROJECT: 1413472

LOCATION: SEE FIGURE 1

**RECORD OF BOREHOLE: 17-151**

BORING DATE: March 23, 2017

SHEET 1 OF 1

DATUM: Geodetic

GTA-BHS 001 \\GOLDER\GDS\GALS\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJL/TB

| DEPTH SCALE<br>METRES | BORING METHOD                                                  | SOIL PROFILE                                                                                           |             |                       | SAMPLES |             |            | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|-------------|------------|-----------------------------------------------|----|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|-----------------------------------------------|
|                       |                                                                | DESCRIPTION                                                                                            | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE        | BLOWS/0.3m |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            | SHEAR STRENGTH<br>Cu, kPa                     |    |    |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            | 20                                            | 40 | 60 | 80 | 10 <sup>-6</sup>                   | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 0                     |                                                                | GROUND SURFACE                                                                                         |             | 196.11<br>0.00        |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       | CME 55 Trackmount Power Auger<br>108 mm I.D. Hollow Stem Auger | (CL) sandy SILTY CLAY; dark brown,<br>organic matter, rootlets; cohesive, w~PL,<br>firm                |             |                       | 1       | SS          | 5          |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 1                     |                                                                | (CL-ML) sandy SILTY CLAY to sandy<br>CLAYEY SILT; brown, (TILL); cohesive,<br>w<PL, very stiff to hard |             | 195.42<br>0.69        | 2       | SS          | 16         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 2                     |                                                                |                                                                                                        |             |                       | 3       | SS          | 22         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       | 4       | SS          | 32         |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 3                     |                                                                |                                                                                                        |             | 5                     | SS      | 75/<br>0.18 |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 4                     |                                                                | - becoming grey at 4.0 m depth                                                                         |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 5                     |                                                                |                                                                                                        |             | 6                     | SS      | 57          |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 6                     |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             | 7                     | SS      | 60          |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 7                     |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | - sand seams below 7.6 m depth                                                                         |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 8                     |                                                                |                                                                                                        |             | 8                     | SS      | 50          |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | END OF BOREHOLE                                                                                        |             | 188.03<br>8.08        |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                | Note:<br><br>1. Borehole open and dry upon<br>completion of drilling.                                  |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 9                     |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
|                       |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |
| 10                    |                                                                |                                                                                                        |             |                       |         |             |            |                                               |    |    |    |                                    |                  |                  |                  |                            |                                               |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW

PROJECT: 1413472  
LOCATION: SEE FIGURE 1

# RECORD OF BOREHOLE: 17-152

BORING DATE: March 24, 2017

SHEET 1 OF 2  
DATUM: Geodetic

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                      |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                      |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |  |
|-----------------------|---------------|-------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----|------------------------------------|--------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|--|
|                       |               | DESCRIPTION                                                                                                       | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               | SHEAR STRENGTH<br>Cu, kPa |    |    |                                    | WATER CONTENT PERCENT<br>Wp — W — Wi |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               | 20                        | 40 | 60 | 80                                 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup>           |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 0                     |               | GROUND SURFACE                                                                                                    |             | 192.26                |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               | FILL - (CL) sandy SILTY CLAY; brown, rootlets, organic matter; cohesive, w>PL, firm                               |             | 0.00                  | 1       | SS   | 4                                             |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             | 191.57                |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 1                     |               | (CL-ML) SILTY CLAY to SILTY CLAYEY SILT, some sand, some gravel; brown, oxidation staining; cohesive, w<PL, stiff |             | 0.69                  | 2       | SS   | 9                                             |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       | 3       | SS   | 8                                             |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 2                     |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               | (ML) Sandy SILT, some gravel, (TILL); non-cohesive, moist, very dense                                             |             | 190.13                | 4       | SS   | 50/<br>0.13                                   |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             | 2.13                  |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               | - auger grinding at 2.7 m depth on cobble or boulder                                                              |             | 189.52                |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 3                     |               | (SM) SILTY SAND, trace gravel; (TILL); non-cohesive, moist, dense to very dense                                   |             | 2.74                  | 5       | SS   | 65                                            |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       | 6       | SS   | 50/<br>0.10                                   |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 4                     |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 5                     |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 6                     |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 7                     |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 8                     |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
| 9                     |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |
|                       |               |                                                                                                                   |             |                       |         |      |                                               |                           |    |    |                                    |                                      |                  |                  |                            |                                               |  |

DEPTH SCALE  
1 : 50



LOGGED: MB  
CHECKED: EW

GTA-BHS 001 \\GOLDER.GDS\GALSUB\BURYCAD-GIS\IMCLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472 2017.GPJ GAL-MIS.GDT 10/17/17 JJJ/TB



PROJECT: 1413472

**RECORD OF BOREHOLE: 17-152**

SHEET 2 OF 2

LOCATION: SEE FIGURE 1

BORING DATE: March 24, 2017

DATUM: Geodetic

GTA-BHS 001 \\GOLDER.GDS\GALS\BURYCAD-GIS\CLIENTS\SIXTEENTH LAND HOLDINGS INC\YORK DOWNS GOLF COURSE\02 DATA\GINT\1413472\_2017.GPJ GAL-MIS.GDT 10/17/17 JLL/TB

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE                                                                                                                                                                                                                                                                                           |             |                       | SAMPLES |      | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |                           |    |                                  | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                                            |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |                  |
|-----------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|---------|------|-----------------------------------------------|---------------------------|----|----------------------------------|------------------------------------|--------------------------------------------|------------------|------------------|----------------------------|-----------------------------------------------|------------------|
|                       |               | DESCRIPTION                                                                                                                                                                                                                                                                                            | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER  | TYPE | BLOWS/0.3m                                    | SHEAR STRENGTH<br>Cu, kPa |    | nat V. + Q -<br>rem V. ⊕ U - ● ○ |                                    | WATER CONTENT PERCENT<br>Wp ———— W ———— Wi |                  |                  |                            |                                               |                  |
|                       |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               | 20                        | 40 | 60                               | 80                                 | 10 <sup>-6</sup>                           | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |                                               | 10 <sup>-3</sup> |
| 10                    |               | — CONTINUED FROM PREVIOUS PAGE —                                                                                                                                                                                                                                                                       |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 11                    |               | Notes:<br><br>1. Groundwater encountered during drilling at a depth of 4.6 m below ground surface.<br><br>2. Borehole caved to a depth of 7.3 m below ground surface upon completion of drilling.<br><br>3. Groundwater measured at a depth of 4.6 m below ground surface upon completion of drilling. |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 12                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 13                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 14                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 15                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 16                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 17                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 18                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 19                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |
| 20                    |               |                                                                                                                                                                                                                                                                                                        |             |                       |         |      |                                               |                           |    |                                  |                                    |                                            |                  |                  |                            |                                               |                  |

DEPTH SCALE

1 : 50



LOGGED: MB

CHECKED: EW



# BURNSIDE

[ THE DIFFERENCE IS OUR PEOPLE ]

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## Appendix C

### Grain-Size Analysis

**TABLE C-1:**  
**4134 16th Avenue, Markham**  
**Summary of Grain-size Analyses**

| Borehole | Sediment Sample |           |                  |                      | Sample Description                               | Estimated K (cm/s) |                |
|----------|-----------------|-----------|------------------|----------------------|--------------------------------------------------|--------------------|----------------|
|          | No.             | Depth (m) | Elevation (masl) | d <sub>10</sub> (mm) |                                                  | Sample             | Geometric Mean |
| 14-09    | 6               | 4.6-5.2   | 176.8            | <0.001               | Silty Clay                                       | <0.001             | <0.001         |
| 16-12    | 15              | 16.8-17.4 | 173.04           | <0.001               | Silty Clay                                       | <0.001             |                |
| 16-9     | 6               | 3.7-4.3   | 178.42           | <0.001               | Silty Clay                                       | <0.001             |                |
| 14-33    | 6               | 4.6-5.2   | 187.7            | <0.001               | Sandy, Clayey Silt, trace sand (Till)            | <0.001             | 2.1E-06        |
| 16-7     | 4               | 2.2-2.8   | 185              | <0.001               | sandy Silty Clay to sandy Clayey Silt (Till)     | <0.001             |                |
| 16-2     | 6               | 4-4.6     | 181.24           | <0.001               | sandy Silty Clay to sandy Clayey Silt (Till)     | <0.001             |                |
| 16-1     | 9               | 8-8.6     | 179.45           | <0.001               | sandy Silty Clay to sandy Clayey Silt (Till)     | <0.001             |                |
| 14-23    | 4               | 2.3-2.9   | 186.5            | 0.001                | Clayey Silt, some sand, trace gravel (Till-like) | 2.0E-06            |                |
| 14-09    | 4               | 2.3-2.9   | 179.3            | 0.002                | Clayey Sand Till                                 | 2.3E-06            |                |
| 14-14    | 6               | 4.6-5.2   | 171.5            | 0.005                | Silt, trace clay, some sand                      | 2.2E-05            | 3.2E-06        |
| 14-23    | 6               | 4.6-5.2   | 184.2            | 0.002                | Silty Sand, some sand, trace clay (Till)         | 2.3E-06            |                |
| 14-10    | 3               | 1.5-2.1   | 186.7            | 0.003                | Silty Sand Till                                  | 6.3E-06            |                |
| 14-11    | 6               | 4.6-5.2   | 177.5            | 0.005                | Silty Sand Till                                  | 2.5E-05            |                |
| 16-11    | 7               | 4.6-5.2   | 177.08           | 0.001                | Silty Sand (Till)                                | 2.0E-06            |                |
| 16-13    | 7               | 4.6-5.2   | 179.26           | 0.001                | Silty Sand (Till)                                | 1.0E-06            |                |
| 16-4     | 7               | 5-5.6     | 174.96           | 0.002                | Silty Sand (Till)                                | 4.0E-06            |                |
| 16-10    | 6               | 3.8-4.4   | 186.54           | 0.001                | sandy Silt (Till)                                | 1.0E-06            |                |
| 16-8     | 6               | 4.4-6     | 179.10           | 0.001                | sandy Silt (Till)                                | 1.0E-06            |                |
| 16-6     | 4               | 2.5-3.1   | 184.29           | 0.001                | sandy Silt                                       | 2.0E-06            |                |
| 14-34    | 6               | 3.8-4.4   | 176.4            | 0.016                | Silty Sand, fine grained sand, trace clay        | 2.6E-04            | 2.1E-03        |
| 16-16    | 11              | 10.7-11.1 | 168.7            | 0.045                | Silty Sand                                       | 2.0E-03            |                |
| 16-15    | 13              | 13.7-14.3 | 166.84           | 0.035                | Silty Sand                                       | 1.2E-03            |                |
| 16-14    | 7               | 4.6-5.2   | 172.57           | 0.043                | Silty Sand                                       | 1.8E-03            |                |
| 14-15    | 7               | 6.1-6.7   | 173.5            | 0.058                | Silty Sand                                       | 3.4E-03            |                |
| 16-5     | 7               | 5-5.6     | 176.33           | 0.091                | Sand                                             | 8.3E-03            |                |
| 16-3     | 7B              | 4.9-5.5   | 192.56           | 0.078                | Sand                                             | 6.1E-03            |                |
| 14-32    | 6               | 4.6-5.2   | 189.4            | 0.046                | Sand                                             | 2.1E-03            |                |

**Notes:**

m - metres

masl - metres above sea level

NA - Not applicable

Borehole locations are shown in **Figure 4**.

K values estimated using the Hazen correlation

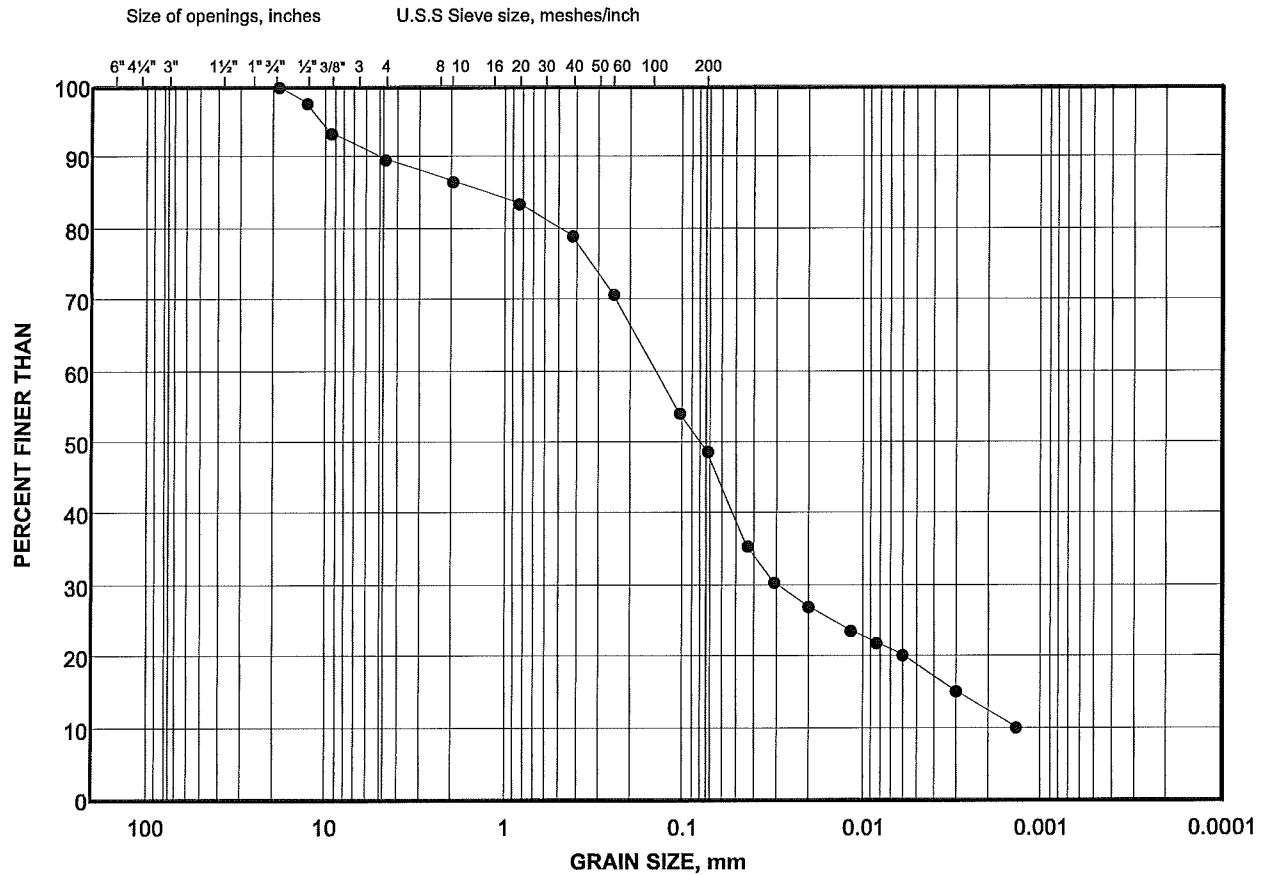
Grain-size distributions are based on the Unified Soil Classification.

D<sub>10</sub> values are from Grain-size analyses or estimated by Burnside

Geometric mean values do not include <0.001 values

# GRAIN SIZE DISTRIBUTION CLAYEY SAND TILL

FIGURE 3



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 14-09    | 4      |          |

Project Number: 14-13472

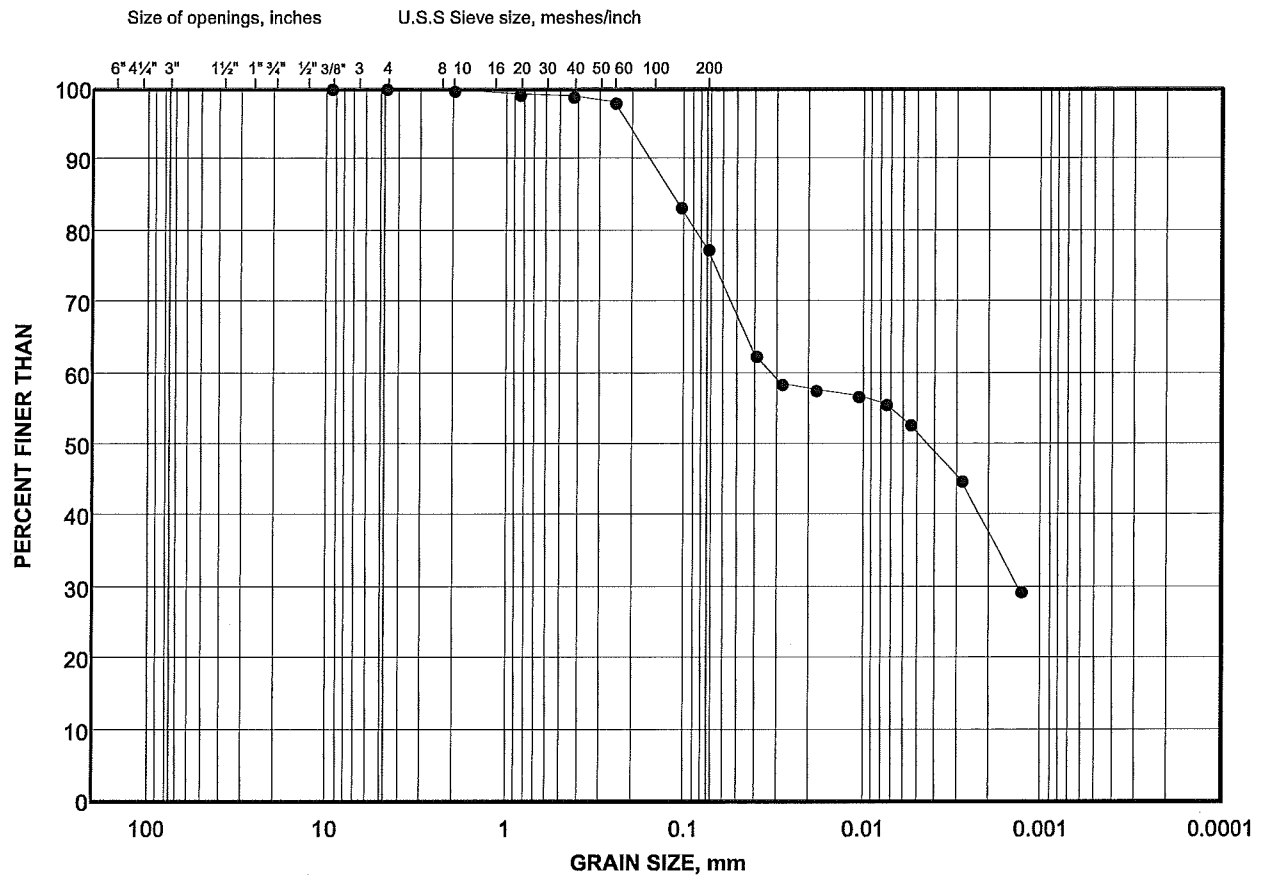
Checked By: SDK

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Date: 05-Jan-15

# GRAIN SIZE DISTRIBUTION SILTY CLAY

FIGURE 4



| COBBLE<br>SIZE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
|----------------|-------------|------|-----------|--------|------|---------------------|
|                | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 14-09    | 6      |          |

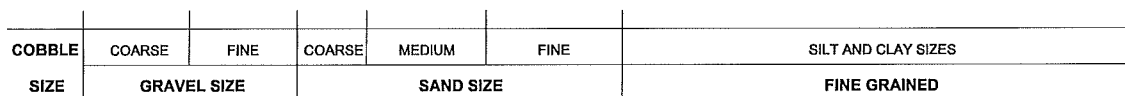
Project Number: 14-13472

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Date: 05-Jan-15

## FIGURE 5



| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 14-10    | 3      |          |

## FIGURE 6

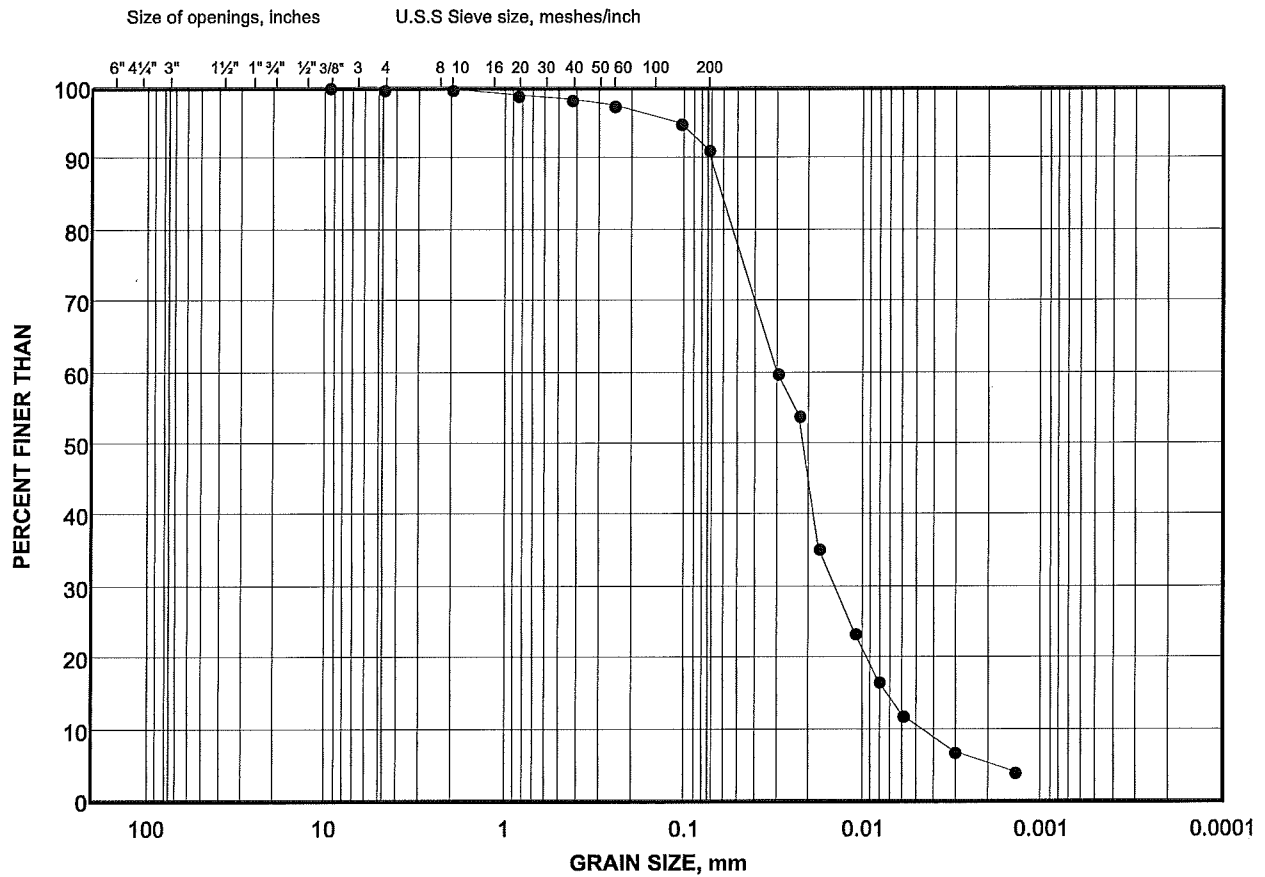


| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| ●      | 14-11    | 6      |          |

# GRAIN SIZE DISTRIBUTION

(ML) SILT, trace clay, some sand

FIGURE 7



|                |             |      |           |        |      |                     |
|----------------|-------------|------|-----------|--------|------|---------------------|
| COBBLE<br>SIZE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
|                | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 14-14    | 6      |          |

Project Number: 14-13472

Checked By: SDK

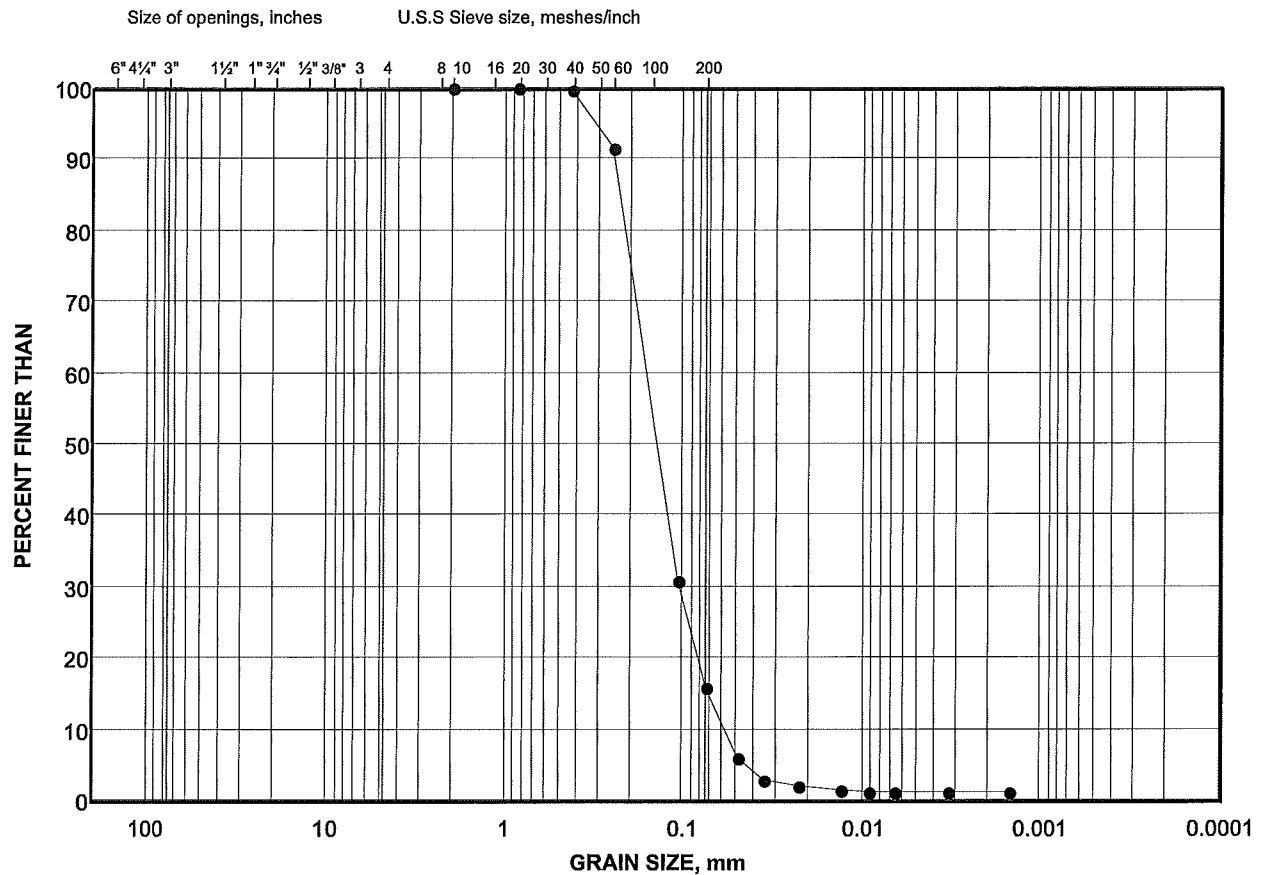
**Golder Associates**

Date: 05-Jan-15



# GRAIN SIZE DISTRIBUTION (SM) SILTY SAND

FIGURE 8



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 14-15    | 7      |          |

Project Number: 14-13472

Checked By: .SDK

**Golder Associates**

Date: 05-Jan-15

(ML) CLAYEY SILT, some sand, trace gravel (Till-like)

Size of openings, inches

U.S.S Sieve size, meshes/inch

PERCENT FINER THAN

GRAIN SIZE, mm

| Grain Size (mm) | Percent Finer (%) | U.S.S Sieve Size (meshes/inch) | Size of Opening (inches) |
|-----------------|-------------------|--------------------------------|--------------------------|
| 100             | 100               | 20                             | 1.18                     |
| 75              | 100               | 20                             | 1.18                     |
| 60              | 100               | 20                             | 1.18                     |
| 45              | 100               | 20                             | 1.18                     |
| 30              | 100               | 20                             | 1.18                     |
| 20              | 100               | 20                             | 1.18                     |
| 15              | 100               | 20                             | 1.18                     |
| 10              | 100               | 20                             | 1.18                     |
| 7.5             | 100               | 20                             | 1.18                     |
| 6               | 100               | 20                             | 1.18                     |
| 4.75            | 100               | 20                             | 1.18                     |
| 3.75            | 100               | 20                             | 1.18                     |
| 3               | 100               | 20                             | 1.18                     |
| 2.5             | 100               | 20                             | 1.18                     |
| 2               | 100               | 20                             | 1.18                     |
| 1.5             | 100               | 20                             | 1.18                     |
| 1.18            | 100               | 20                             | 1.18                     |
| 0.85            | 100               | 20                             | 1.18                     |
| 0.75            | 100               | 20                             | 1.18                     |
| 0.6             | 100               | 20                             | 1.18                     |
| 0.425           | 100               | 20                             | 1.18                     |
| 0.3             | 100               | 20                             | 1.18                     |
| 0.25            | 100               | 20                             | 1.18                     |
| 0.2             | 100               | 20                             | 1.18                     |
| 0.15            | 100               | 20                             | 1.18                     |
| 0.125           | 100               | 20                             | 1.18                     |
| 0.106           | 100               | 20                             | 1.18                     |
| 0.085           | 100               | 20                             | 1.18                     |
| 0.075           | 100               | 20                             | 1.18                     |
| 0.06            | 100               | 20                             | 1.18                     |
| 0.05            | 100               | 20                             | 1.18                     |
| 0.0425          | 100               | 20                             | 1.18                     |
| 0.0375          | 100               | 20                             | 1.18                     |
| 0.03            | 100               | 20                             | 1.18                     |
| 0.025           | 100               | 20                             | 1.18                     |
| 0.02            | 100               | 20                             | 1.18                     |
| 0.015           | 100               | 20                             | 1.18                     |
| 0.0125          | 100               | 20                             | 1.18                     |
| 0.0106          | 100               | 20                             | 1.18                     |
| 0.0085          | 100               | 20                             | 1.18                     |
| 0.0075          | 100               | 20                             | 1.18                     |
| 0.006           | 100               | 20                             | 1.18                     |
| 0.00425         | 100               | 20                             | 1.18                     |
| 0.003           | 100               | 20                             | 1.18                     |
| 0.0025          | 100               | 20                             | 1.18                     |
| 0.002           | 100               | 20                             | 1.18                     |
| 0.0015          | 100               | 20                             | 1.18                     |
| 0.00125         | 100               | 20                             | 1.18                     |
| 0.00106         | 100               | 20                             | 1.18                     |
| 0.00085         | 100               | 20                             | 1.18                     |
| 0.00075         | 100               | 20                             | 1.18                     |
| 0.0006          | 100               | 20                             | 1.18                     |
| 0.000425        | 100               | 20                             | 1.18                     |
| 0.0003          | 100               | 20                             | 1.18                     |
| 0.00025         | 100               | 20                             | 1.18                     |
| 0.0002          | 100               | 20                             | 1.18                     |
| 0.00015         | 100               | 20                             | 1.18                     |
| 0.000125        | 100               | 20                             | 1.18                     |
| 0.000106        | 100               | 20                             | 1.18                     |
| 0.000085        | 100               | 20                             | 1.18                     |
| 0.000075        | 100               | 20                             | 1.18                     |
| 0.00006         | 100               | 20                             | 1.18                     |
| 0.0000425       | 100               | 20                             | 1.18                     |
| 0.00003         | 100               | 20                             | 1.18                     |
| 0.000025        | 100               | 20                             | 1.18                     |
| 0.00002         | 100               | 20                             | 1.18                     |
| 0.000015        | 100               | 20                             | 1.18                     |
| 0.0000125       | 100               | 20                             | 1.18                     |
| 0.0000106       | 100               | 20                             | 1.18                     |
| 0.0000085       | 100               | 20                             | 1.18                     |
| 0.0000075       | 100               | 20                             | 1.18                     |
| 0.000006        | 100               | 20                             | 1.18                     |
| 0.00000425      | 100               | 20                             | 1.18                     |
| 0.000003        | 100               | 20                             | 1.18                     |
| 0.0000025       | 100               | 20                             | 1.18                     |
| 0.000002        | 100               | 20                             | 1.18                     |
| 0.0000015       | 100               | 20                             | 1.18                     |
| 0.00000125      | 100               | 20                             | 1.18                     |
| 0.00000106      | 100               | 20                             | 1.18                     |
| 0.00000085      | 100               | 20                             | 1.18                     |
| 0.00000075      | 100               | 20                             | 1.18                     |
| 0.0000006       | 100               | 20                             | 1.18                     |
| 0.000000425     | 100               | 20                             | 1.18                     |
| 0.0000003       | 100               | 20                             | 1.18                     |

|                    |             |      |           |        |      |                     |
|--------------------|-------------|------|-----------|--------|------|---------------------|
| COBBLE<br><br>SIZE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
|                    | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| ●      | 14-23    | 4      |          |

Date: 05-Jan-15

(SM) SILTY SAND, some sand, trace clay (Till)

Size of openings, inches

U.S.S Sieve size, meshes/inch

PERCENT FINER THAN

GRAIN SIZE, mm

| Grain Size (mm) | U.S.S Sieve Size (meshes/inch) | Percent Finer (%) |
|-----------------|--------------------------------|-------------------|
| 100             | 6                              | 100               |
| 75              | 20                             | 100               |
| 60              | 25                             | 93                |
| 48              | 30                             | 92                |
| 30              | 60                             | 92                |
| 25              | 75                             | 87                |
| 20              | 90                             | 83                |
| 15              | 120                            | 79                |
| 12              | 150                            | 75                |
| 10              | 20                             | 67                |
| 75              | 250                            | 52                |
| 60              | 250                            | 47                |
| 48              | 300                            | 33                |
| 40              | 360                            | 29                |
| 30              | 480                            | 26                |
| 25              | 600                            | 23                |
| 20              | 750                            | 21                |
| 15              | 1000                           | 19                |
| 12              | 1250                           | 15                |
| 10              | 1500                           | 10                |

|                    |             |      |           |        |      |                     |
|--------------------|-------------|------|-----------|--------|------|---------------------|
| COBBLE<br><br>SIZE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
|                    | GRAVEL SIZE |      | SAND SIZE |        |      |                     |

## SYMBOL

24

BOREHOLE

14-23

## SAMPLE

6

DEPTH(m)

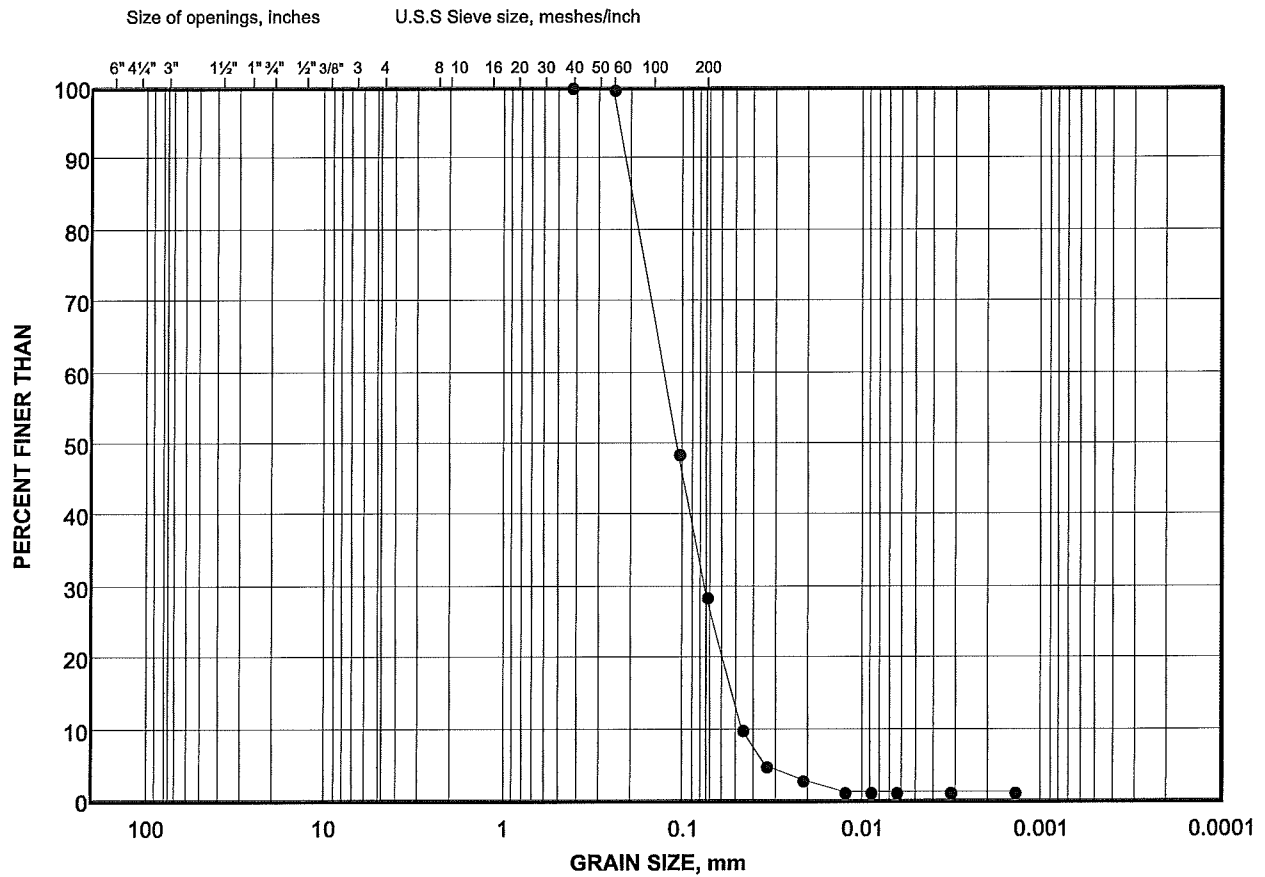
Checked By: SDK

## Golder Associates

Date: 05-Jan-15

# GRAIN SIZE DISTRIBUTION (SP) SAND

FIGURE 11



|                |             |      |           |        |      |                     |
|----------------|-------------|------|-----------|--------|------|---------------------|
| COBBLE<br>SIZE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
|                | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

|        |          |        |          |
|--------|----------|--------|----------|
| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
| •      | 14-32    | 6      |          |

Project Number: 14-13472

Checked By: SDK

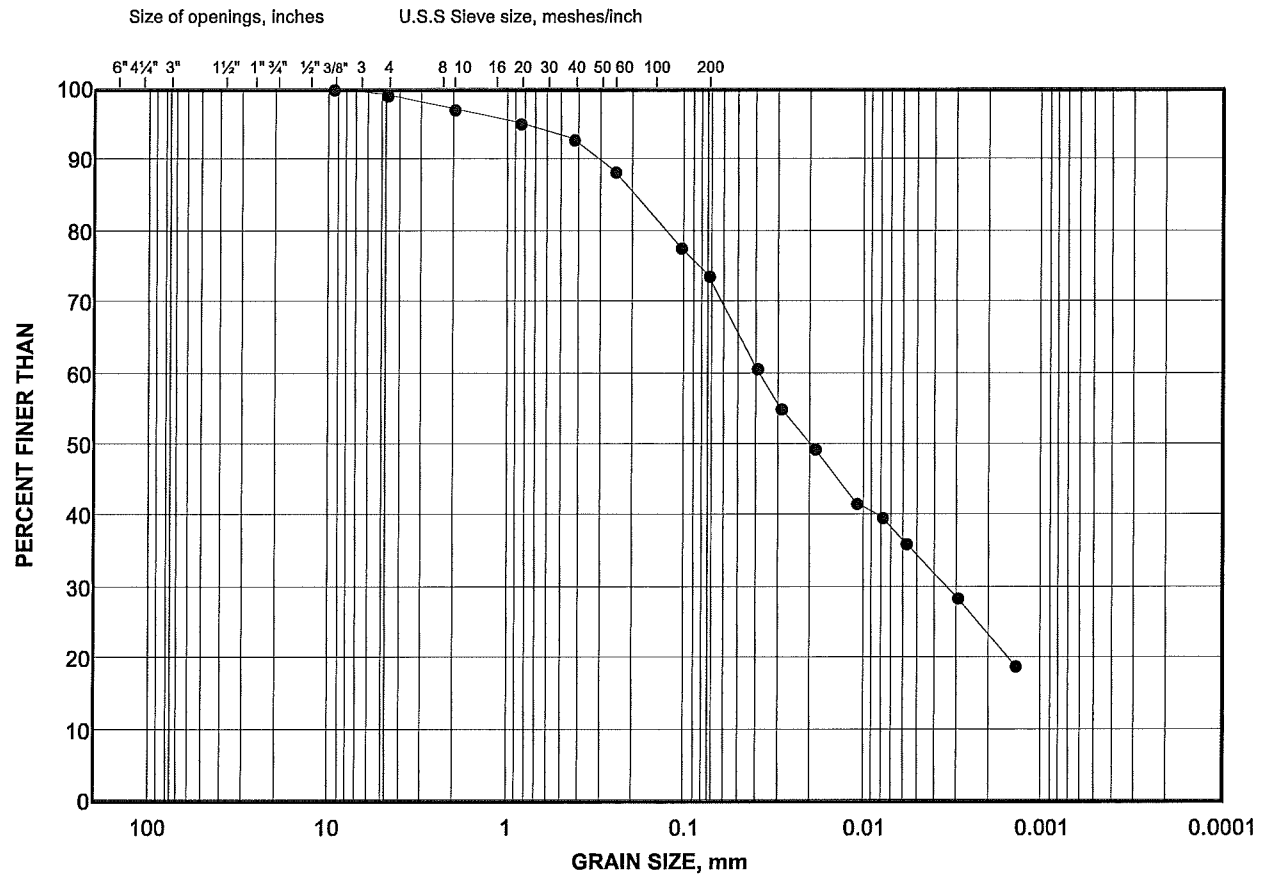
**Golder Associates**

Date: 05-Jan-15

# GRAIN SIZE DISTRIBUTION

(ML) Sandy, CLAYEY SILT, trace sand (Till)

FIGURE 12



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 14-33    | 6      |          |

Project Number: 14-13472

Checked By: SDK

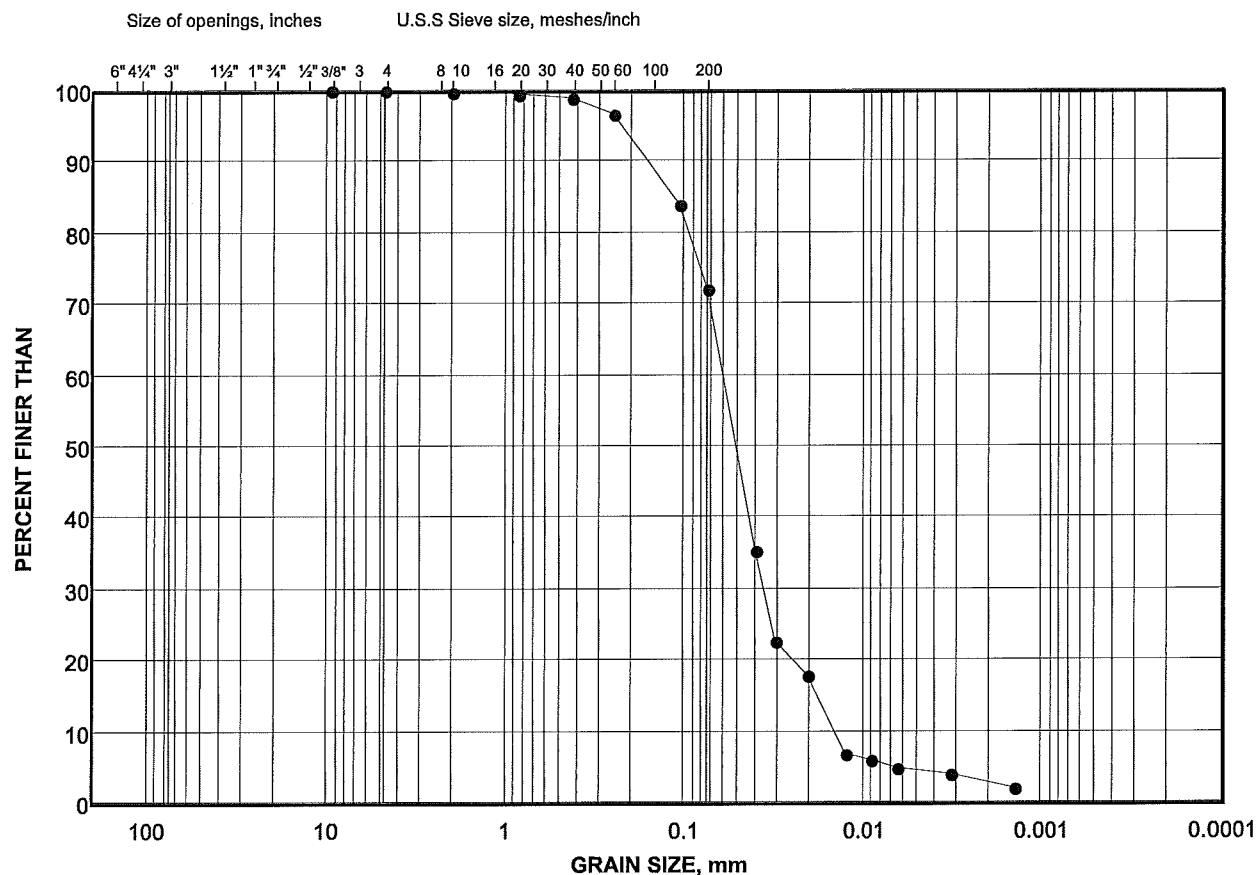
**Golder Associates**

Date: 05-Jan-15

# GRAIN SIZE DISTRIBUTION

(SM) SILTY SAND, fine grained sand, trace clay

FIGURE 13



## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 14-34    | 6      |          |

Project Number: 14-13472

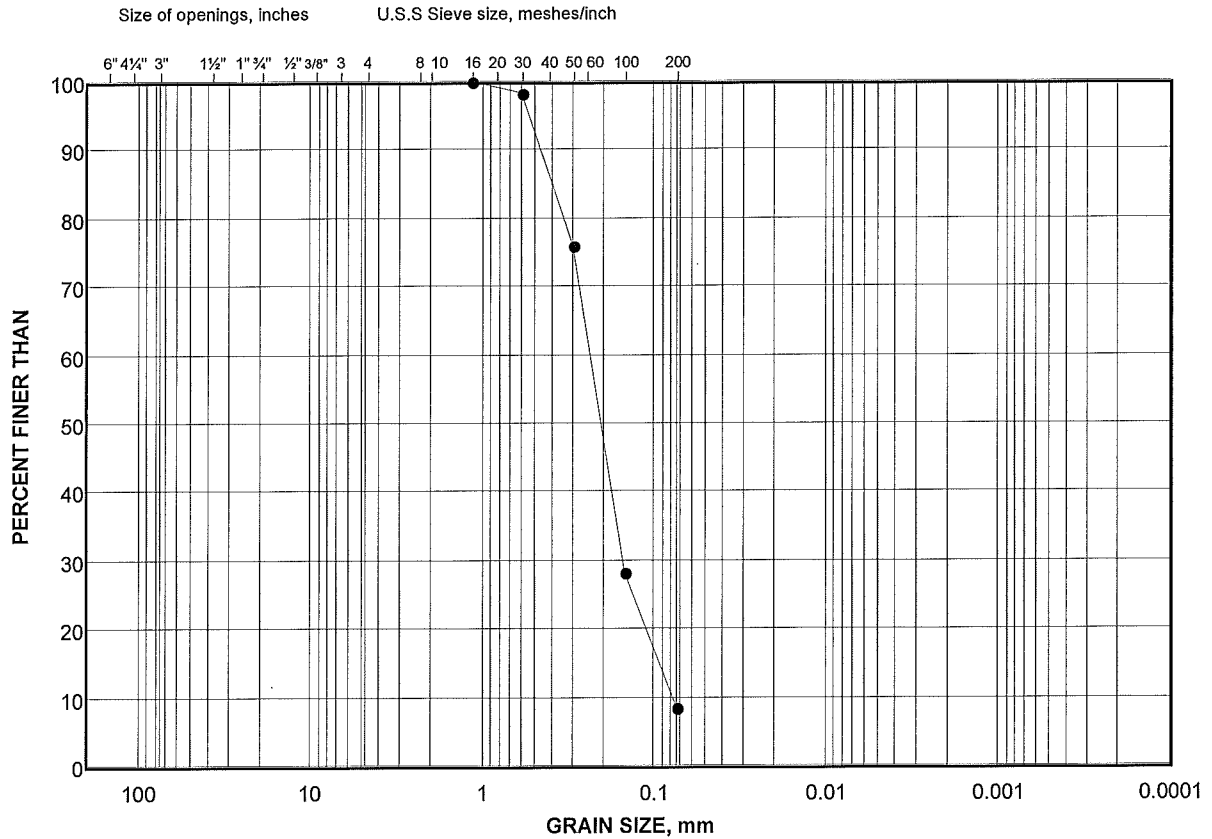
Checked By: SDK

**Golder Associates**

Date: 05-Jan-15

# GRAIN SIZE DISTRIBUTION (SP) SAND

FIGURE 10



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | ELEVATION(m) |
|--------|----------|--------|--------------|
| •      | 16-3     | 7B     | 192.56       |

Project Number: 1413472 (8000)

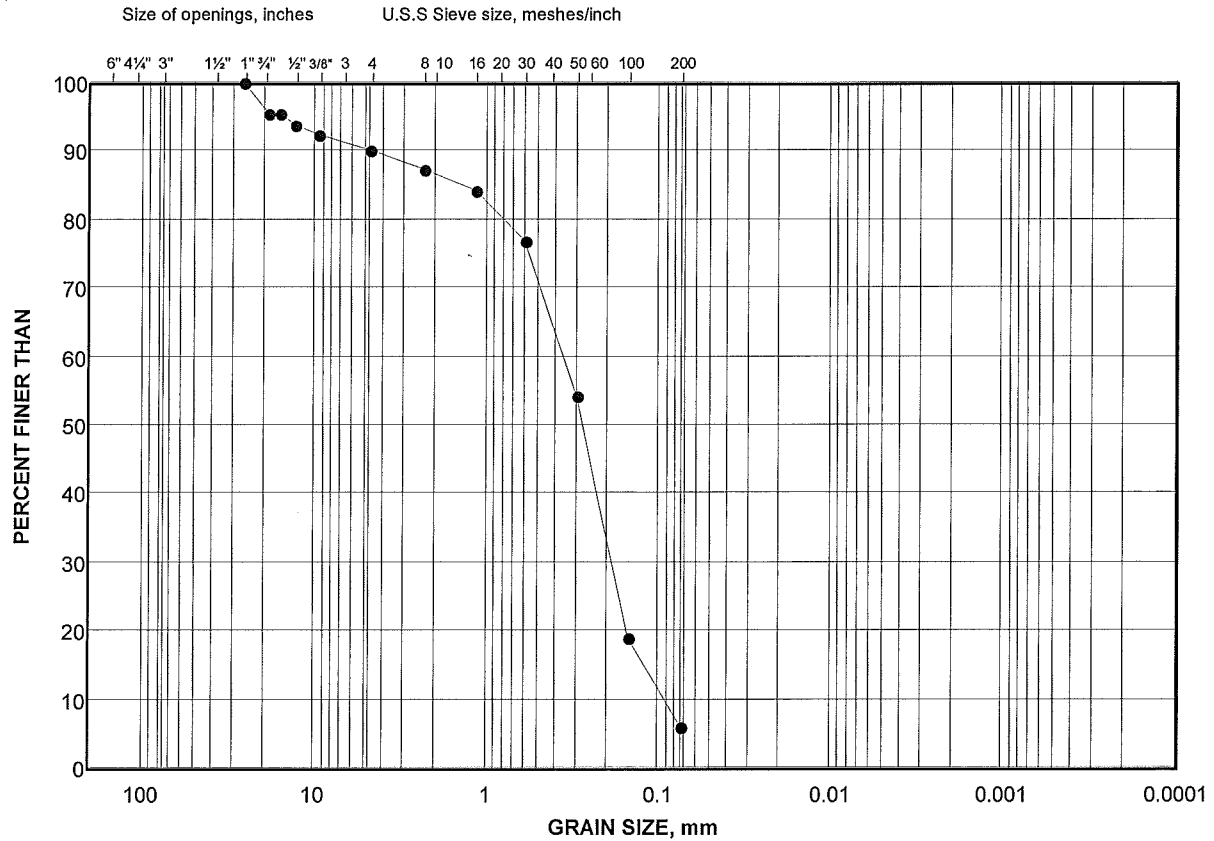
Checked By: OS

**Golder Associates**

Date: 24-Mar-16

# GRAIN SIZE DISTRIBUTION (SW) SAND

FIGURE 9

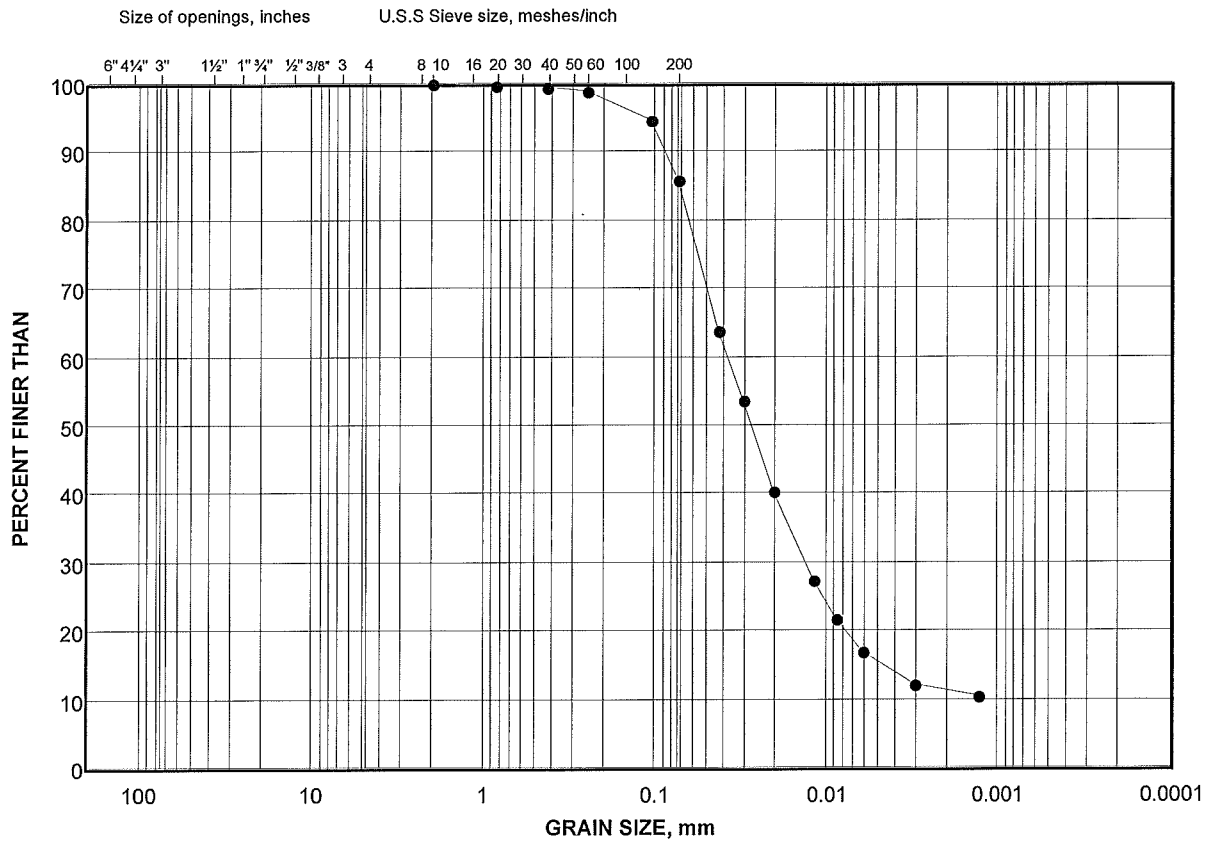




# GRAIN SIZE DISTRIBUTION

(ML) sandy SILT

FIGURE 8



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | ELEVATION(m) |
|--------|----------|--------|--------------|
| •      | 16-6     | 4      | 184.29       |

Project Number: 1413472 (8000)

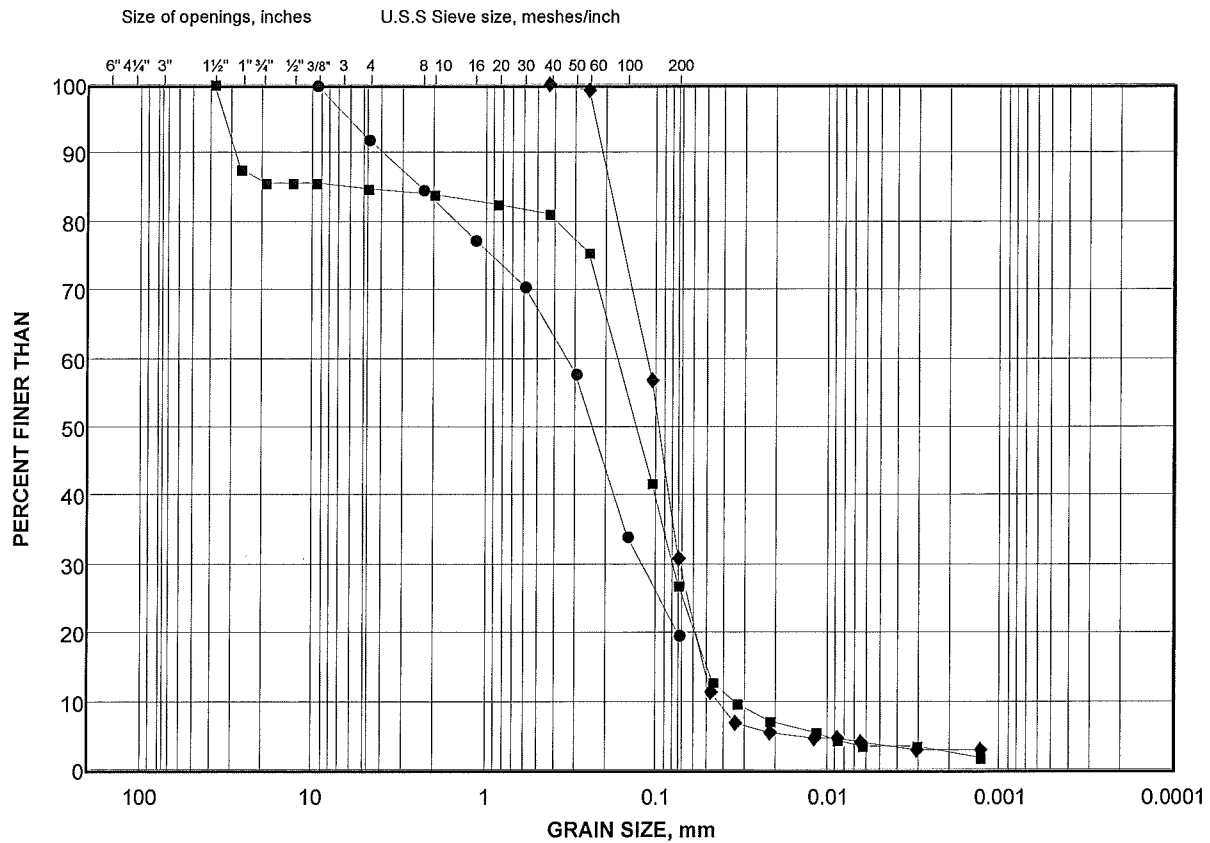
Checked By: OS

Golder Associates

Date: 24-Mar-16

# GRAIN SIZE DISTRIBUTION (SM) SILTY SAND

FIGURE 7



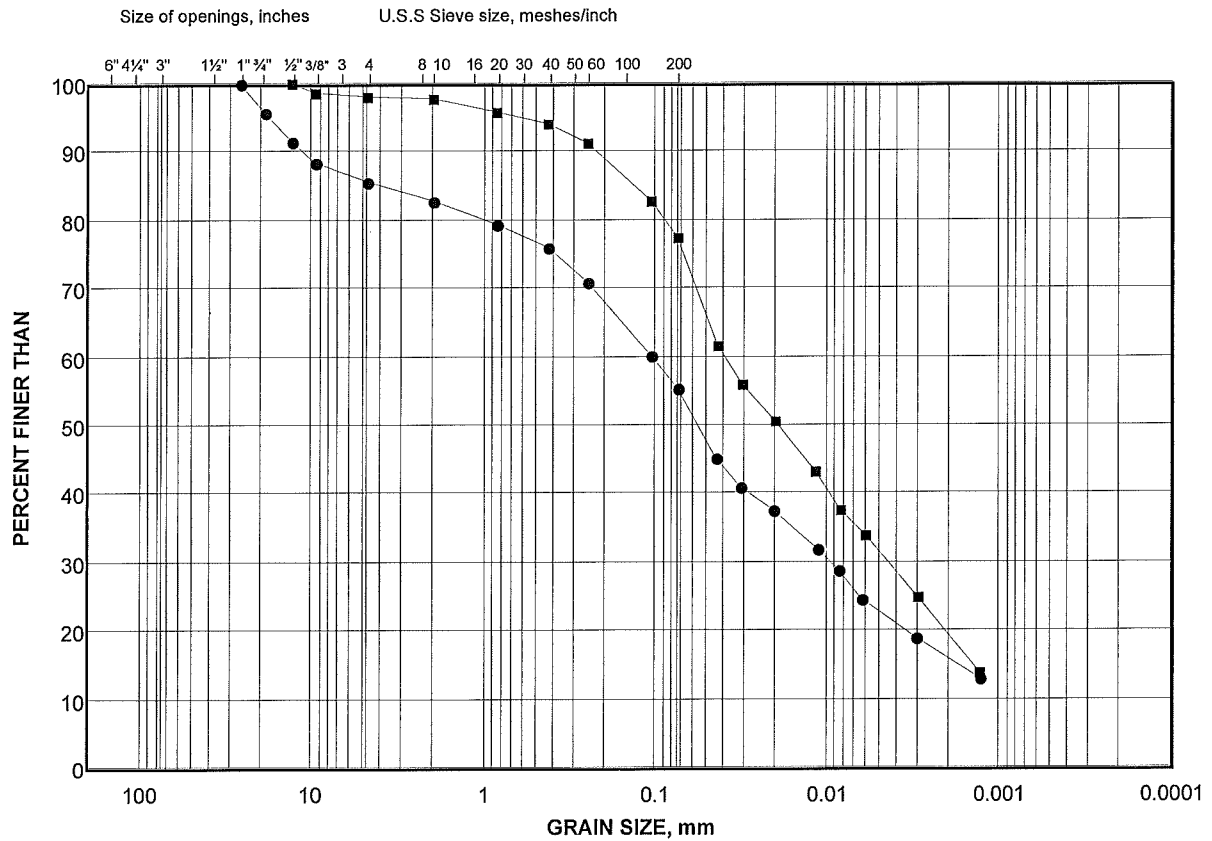
## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | ELEVATION(m) |
|--------|----------|--------|--------------|
| ●      | 16-16    | 11     | 168.70       |
| ■      | 16-15    | 13     | 166.84       |
| ◆      | 16-14    | 7      | 172.57       |

# GRAIN SIZE DISTRIBUTION

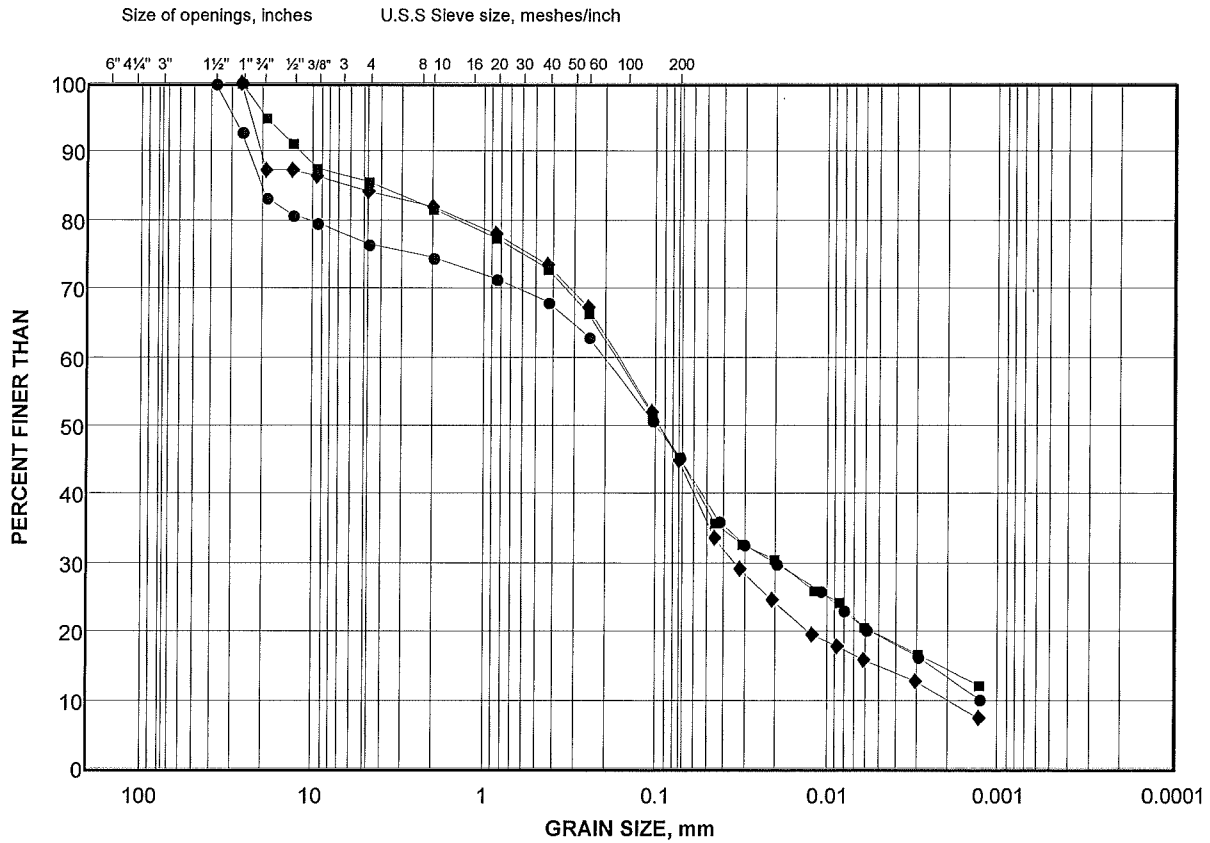
(ML) sandy SILT (TILL)

FIGURE 6



# GRAIN SIZE DISTRIBUTION (SM) SILTY SAND (TILL)

FIGURE 5



## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | ELEVATION(m) |
|--------|----------|--------|--------------|
| ●      | 16-11    | 7      | 177.08       |
| ■      | 16-13    | 7      | 179.26       |
| ◆      | 16-4     | 7      | 174.96       |

Project Number: 1413472 (8000)

Checked By: OS

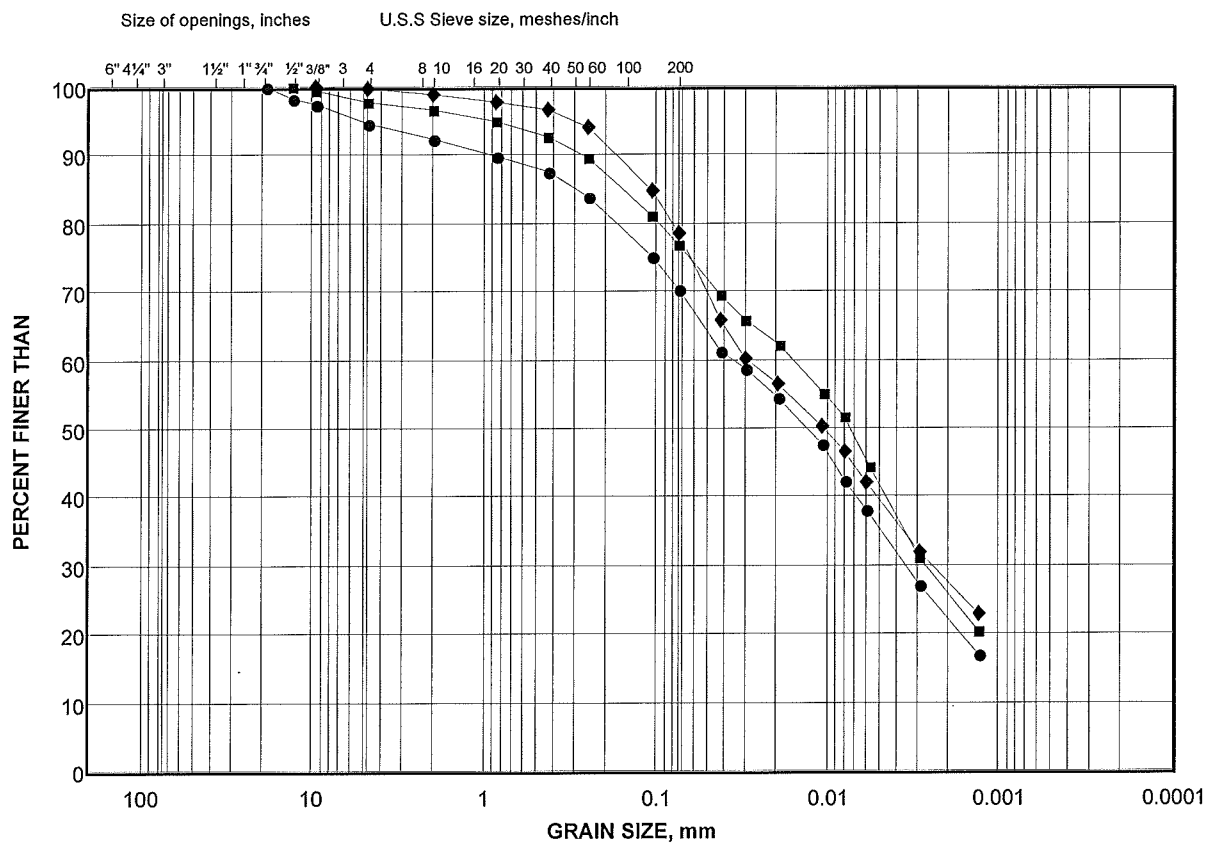
**Golder Associates**

Date: 24-Mar-16

# GRAIN SIZE DISTRIBUTION

(CL-ML) sandy SILTY CLAY to sandy CLAYEY SILT (TILL)

FIGURE 4



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

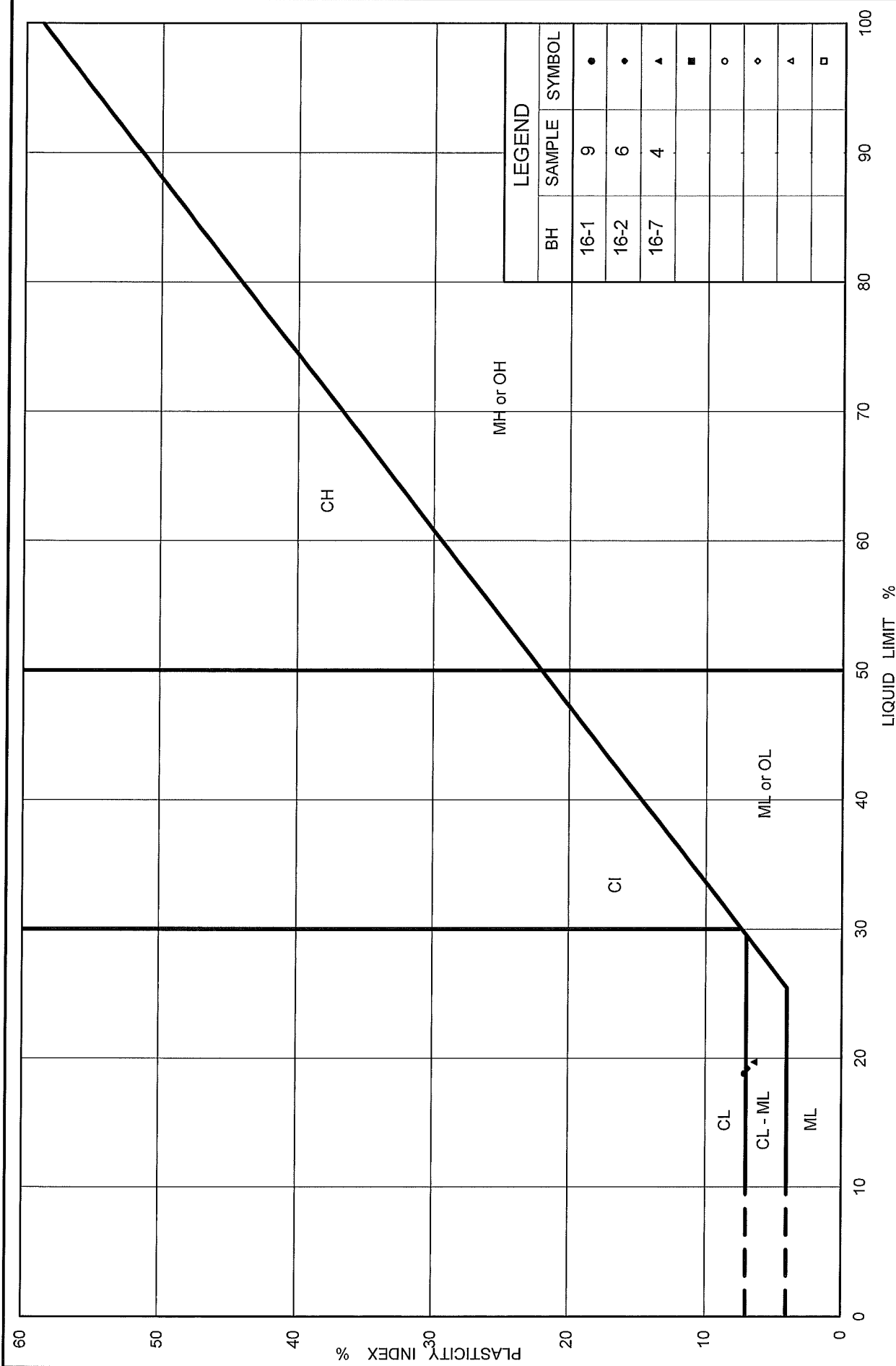
| SYMBOL | BOREHOLE | SAMPLE | ELEVATION(m) |
|--------|----------|--------|--------------|
| •      | 16-7     | 4      | 185.00       |
| ■      | 16-2     | 6      | 181.24       |
| ◆      | 16-1     | 9      | 179.45       |

Project Number: 1413472 (8000)

Checked By: OS

Golder Associates

Date: 24-Mar-16





**PLASTICITY CHART**  
(CL-ML) SILTY CLAY TO CLAYEY SILT (TILL)

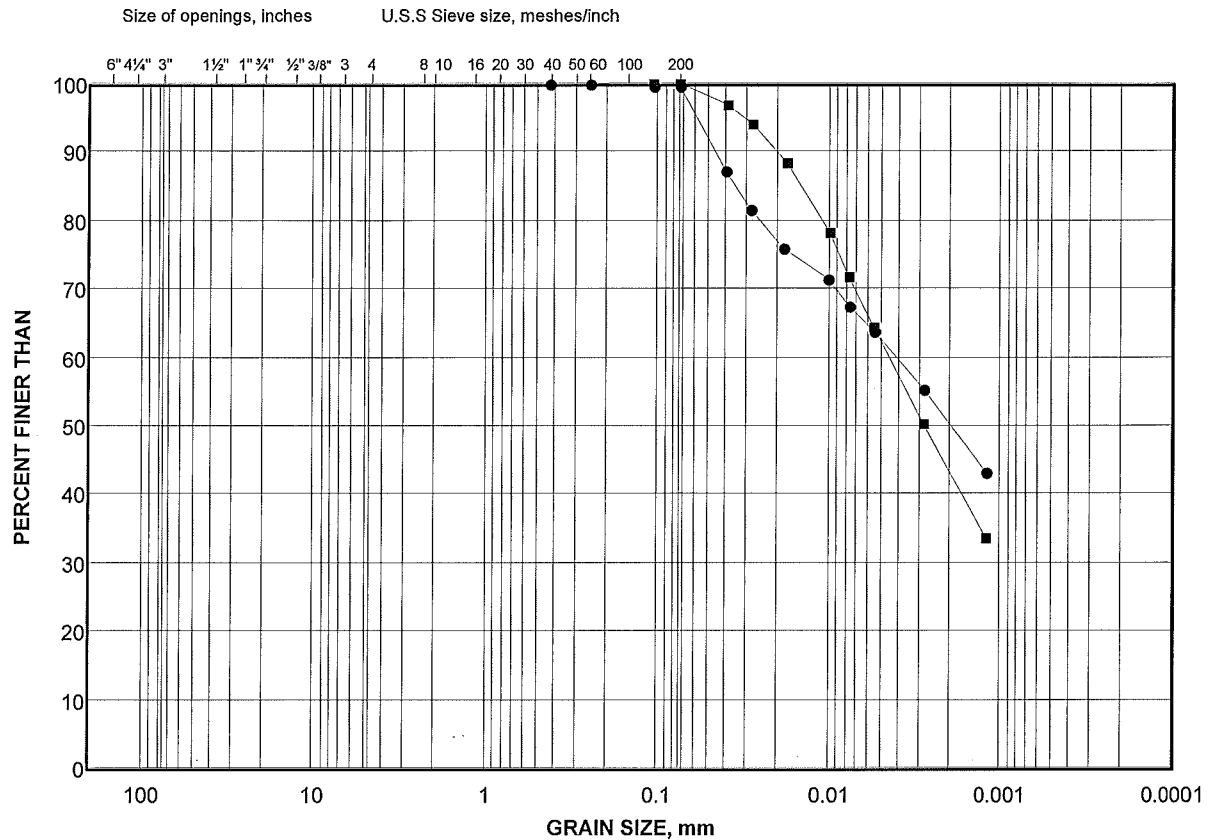
Figure No. 3

Project No. 1413472 (8000)

Checked By: OS

# GRAIN SIZE DISTRIBUTION (C) SILTY CLAY

FIGURE 2



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

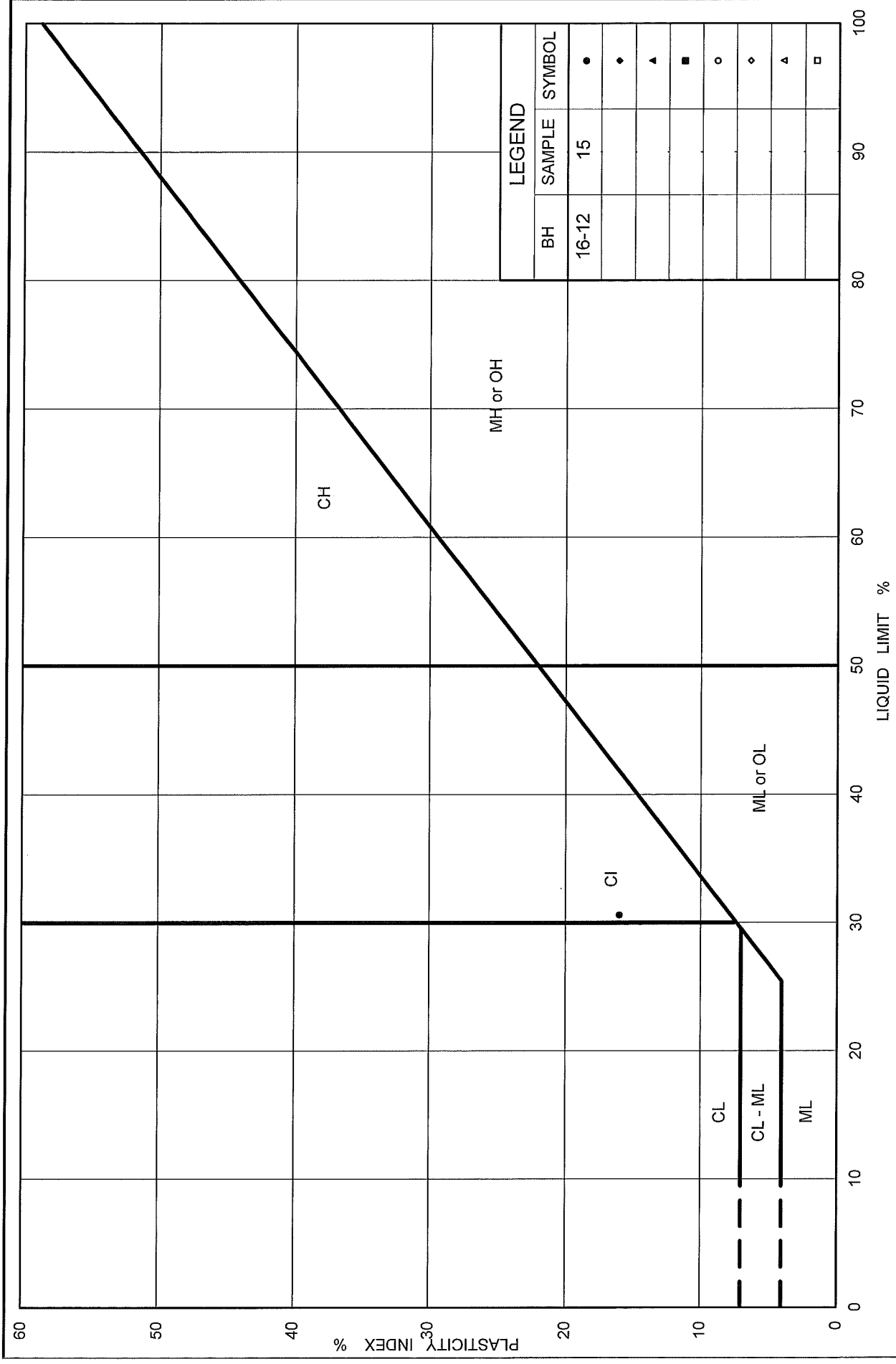
| SYMBOL | BOREHOLE | SAMPLE | ELEVATION(m) |
|--------|----------|--------|--------------|
| ●      | 16-12    | 15     | 173.04       |
| ■      | 16-9     | 6      | 178.42       |

Project Number: 1413472 (8000)

Checked By: OS

**Golder Associates**

Date: 28-Mar-16



| LEGEND |        |        |
|--------|--------|--------|
| BH     | SAMPLE | SYMBOL |
| 16-12  | 15     | •      |
|        |        | •      |
|        |        | ▲      |
|        |        | ■      |
|        |        | ○      |
|        |        | ◇      |
|        |        | △      |
|        |        | □      |



**Golder Associates**

**Figure No. 1**

**Project No. 1413472 (8000)**

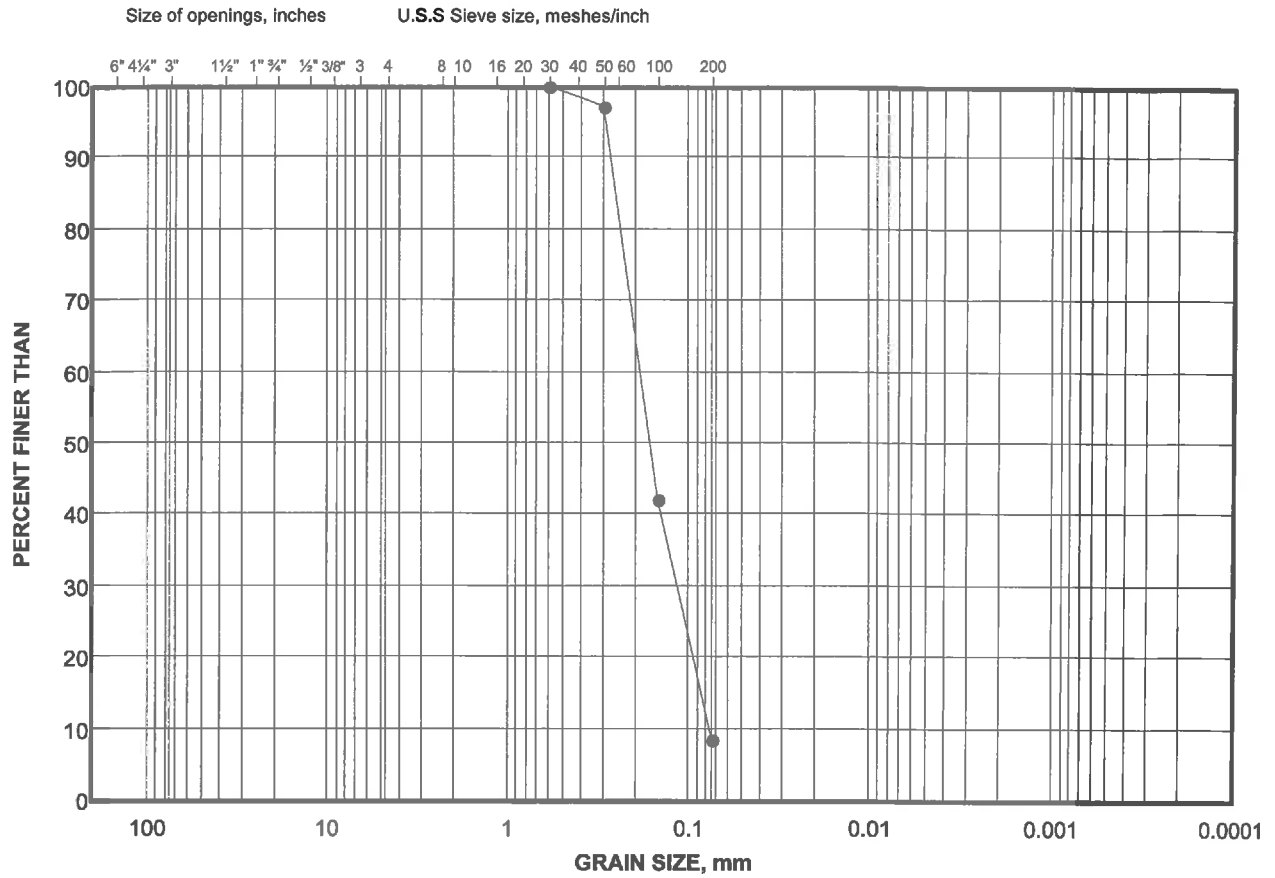
**Checked By: OS**



# GRAIN SIZE DISTRIBUTION

MTO LS-602

FIGURE



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 132      | 4      |          |

Project Number: 1413472

Checked By: 

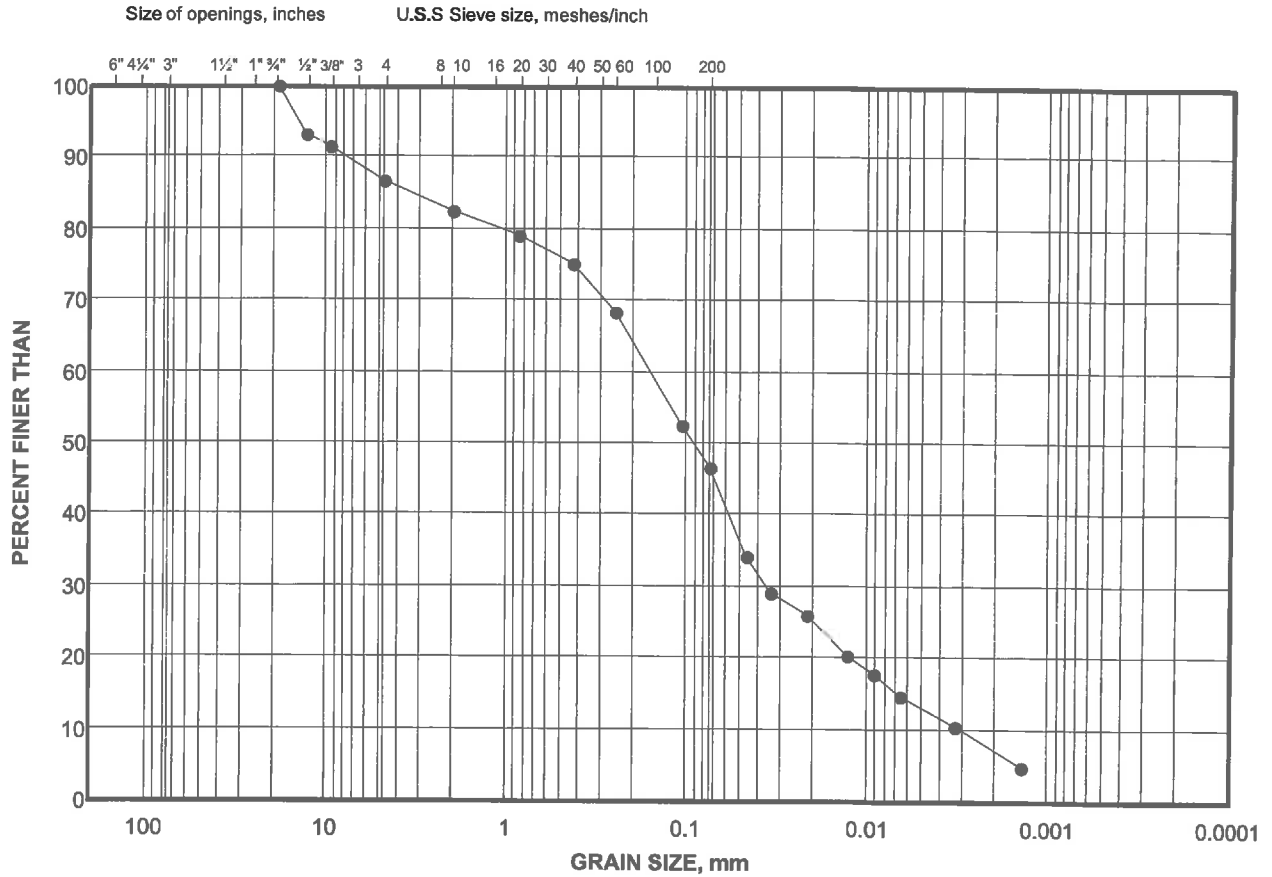
Golder Associates

Date: 09-May-17

# GRAIN SIZE DISTRIBUTION

MTO LS-702

FIGURE



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 140      | 6      |          |

Project Number: 1413472

Checked By: \_\_\_\_\_



**Golder Associates**

Date: 09-May-17

## MTO LS-702

Size of openings, inches

U.S.S Sieve size, meshes/inch

PERCENT FINER THAN

GRAIN SIZE, mm

| Grain Size (mm) | U.S.S Sieve Size (meshes/inch) | Size of Opening (inches) | Percent Finer (%) |
|-----------------|--------------------------------|--------------------------|-------------------|
| 100             | 20                             | 0.85                     | 100               |
| 60              | 25                             | 0.60                     | 100               |
| 40              | 40                             | 0.425                    | 100               |
| 25              | 60                             | 0.25                     | 64                |
| 15              | 100                            | 0.15                     | 48                |
| 10              | 200                            | 0.10                     | 29                |
| 7.5             | 250                            | 0.075                    | 20                |
| 6               | 300                            | 0.06                     | 12                |
| 5               | 350                            | 0.05                     | 6                 |
| 4               | 400                            | 0.04                     | 4                 |
| 3               | 600                            | 0.03                     | 2                 |

|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
|        | GRAVEL SIZE |      | SAND SIZE |        |      |                     |
| SIZE   |             |      |           |        |      | FINE GRAINED        |

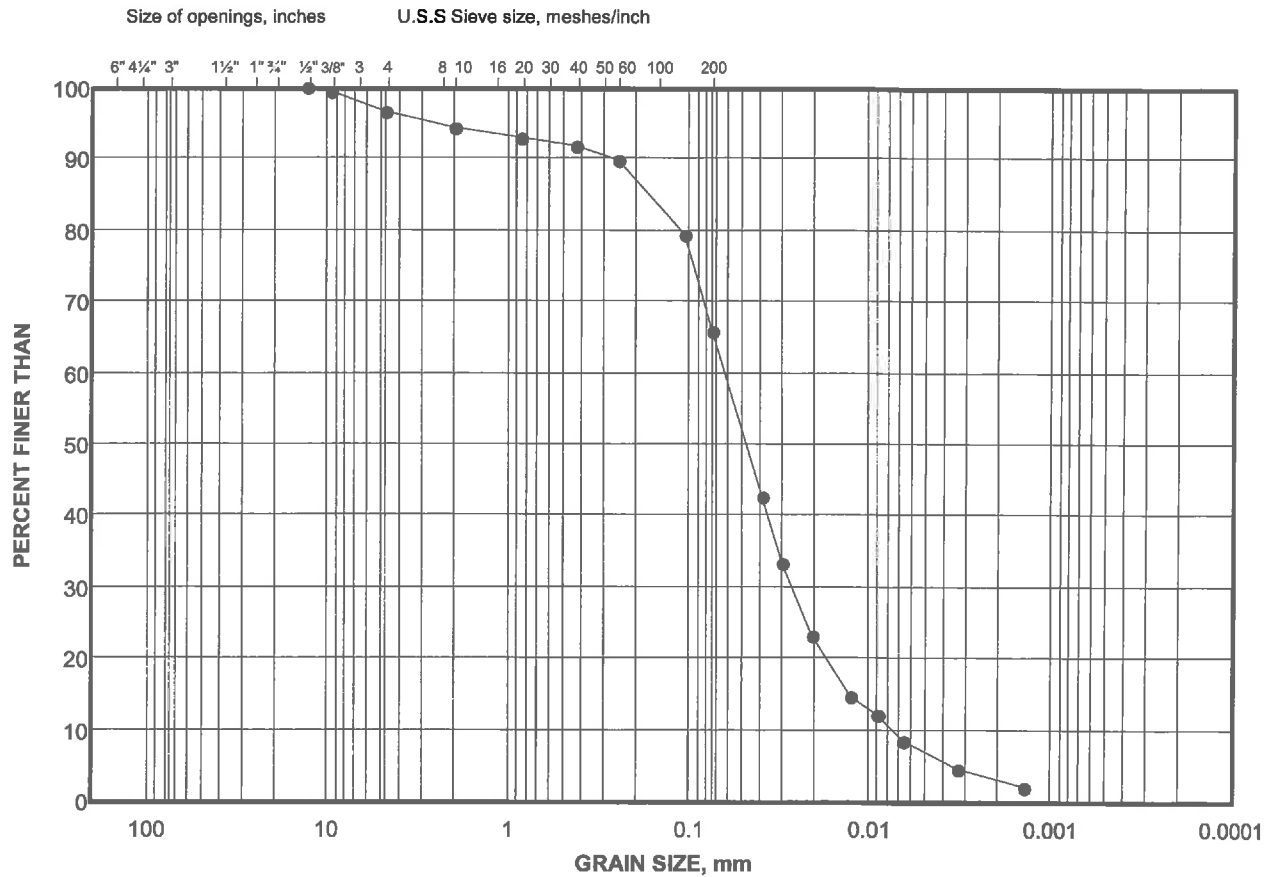
| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| ●      | 142      | 8      |          |

Date: 09-May-17

# GRAIN SIZE DISTRIBUTION

MTO LS-702

FIGURE



|                |             |      |           |        |      |                     |
|----------------|-------------|------|-----------|--------|------|---------------------|
| COBBLE<br>SIZE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
|                | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

|        |          |        |          |
|--------|----------|--------|----------|
| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
| •      | 17-110   | 8      |          |

Project Number: 1413472

Checked By: 

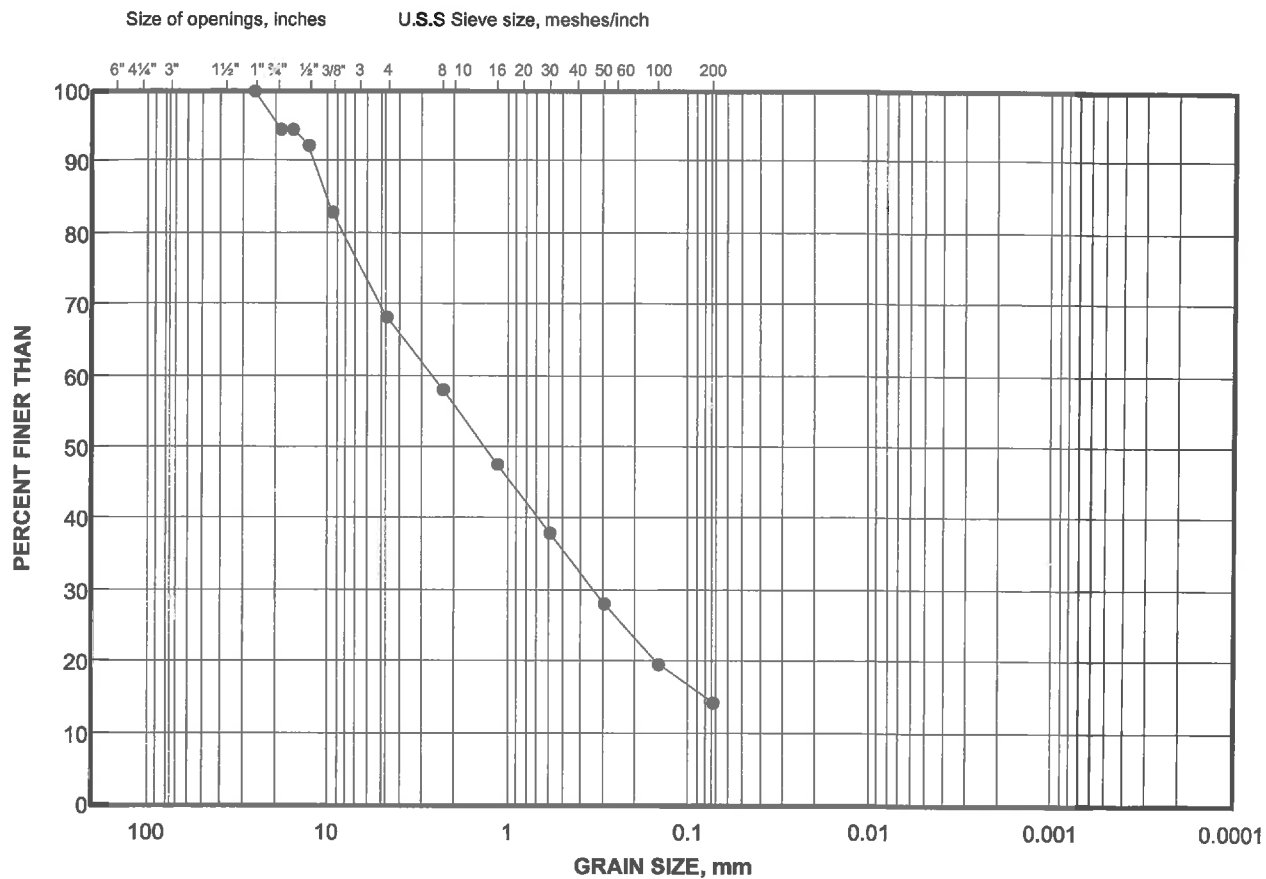
Golder Associates

Date: 09-May-17

# GRAIN SIZE DISTRIBUTION

MTO LS-602

FIGURE



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 17-113   | 7      |          |

Project Number: 1413472

Checked By: \_\_\_\_\_



**Golder Associates**

Date: 09-May-17

## MTO LS-702

Size of openings, inches

U.S.S Sieve size, meshes/inch

PERCENT FINER THAN

GRAIN SIZE, mm

| Grain Size (mm) | Percent Finer Than (%) |
|-----------------|------------------------|
| 100             | 100                    |
| 75              | 100                    |
| 60              | 100                    |
| 48              | 100                    |
| 40              | 100                    |
| 30              | 100                    |
| 25              | 100                    |
| 20              | 100                    |
| 16              | 100                    |
| 12              | 100                    |
| 10              | 100                    |
| 8               | 100                    |
| 6               | 100                    |
| 5               | 100                    |
| 4               | 100                    |
| 3               | 100                    |
| 2.5             | 100                    |
| 2               | 100                    |
| 1.5             | 100                    |
| 1.25            | 100                    |
| 1               | 100                    |
| 0.85            | 100                    |
| 0.75            | 100                    |
| 0.6             | 100                    |
| 0.5             | 100                    |
| 0.425           | 100                    |
| 0.375           | 100                    |
| 0.3             | 100                    |
| 0.25            | 100                    |
| 0.2             | 100                    |
| 0.18            | 100                    |
| 0.15            | 100                    |
| 0.125           | 100                    |
| 0.106           | 100                    |
| 0.09            | 100                    |
| 0.075           | 100                    |
| 0.063           | 100                    |
| 0.053           | 100                    |
| 0.045           | 100                    |
| 0.037           | 100                    |
| 0.03            | 100                    |
| 0.025           | 100                    |
| 0.02            | 100                    |
| 0.016           | 100                    |
| 0.013           | 100                    |
| 0.010           | 100                    |
| 0.008           | 100                    |
| 0.006           | 100                    |
| 0.005           | 100                    |
| 0.004           | 100                    |
| 0.003           | 100                    |
| 0.002           | 100                    |
| 0.001           | 100                    |
| 0.00075         | 100                    |
| 0.0006          | 100                    |
| 0.0005          | 100                    |
| 0.0004          | 100                    |
| 0.0003          | 100                    |
| 0.0002          | 100                    |
| 0.0001          | 100                    |

|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
|        |             |      |           |        |      |                     |
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

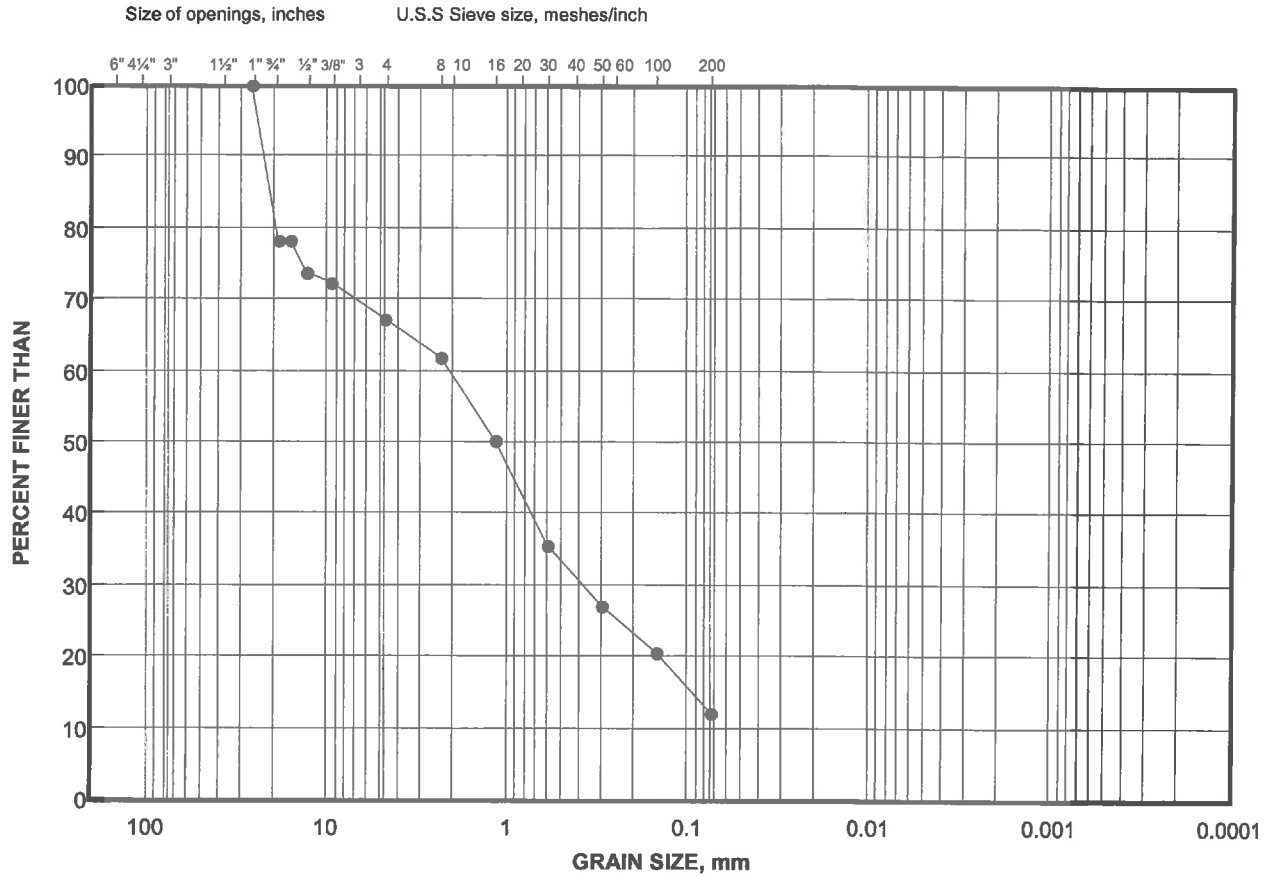
|        |          |        |          |
|--------|----------|--------|----------|
| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
| •      | 17-115   | 9      |          |

Date: 09-May-17

# GRAIN SIZE DISTRIBUTION

MTO LS-602

FIGURE



|        |             |      |           |        |      |                     |
|--------|-------------|------|-----------|--------|------|---------------------|
| COBBLE | COARSE      | FINE | COARSE    | MEDIUM | FINE | SILT AND CLAY SIZES |
| SIZE   | GRAVEL SIZE |      | SAND SIZE |        |      | FINE GRAINED        |

## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 139      | 11     |          |

Project Number: 1413472

Checked By:   9  

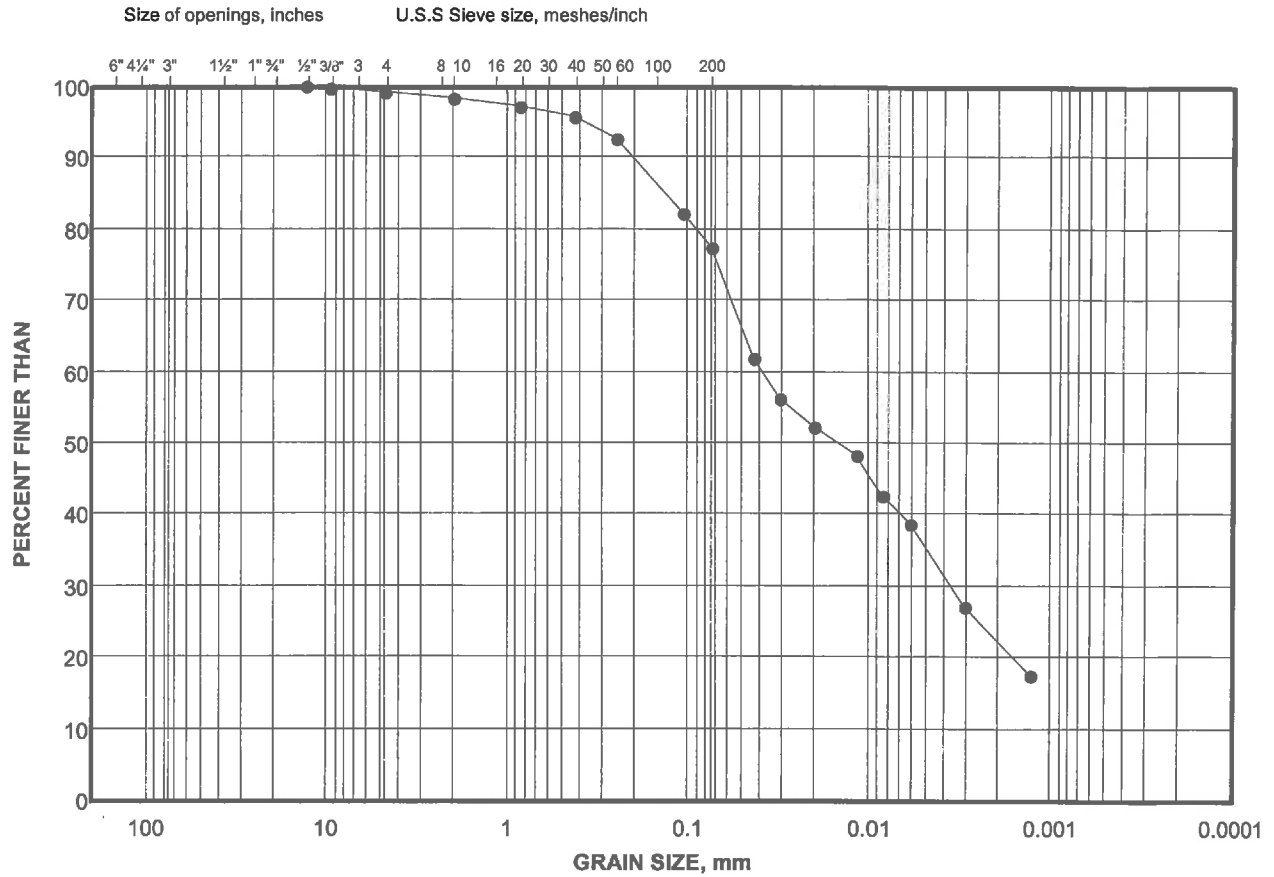
**Golder Associates**

Date: 19-May-17

# GRAIN SIZE DISTRIBUTION

MT0 LS-702

FIGURE



## LEGEND

| SYMBOL | BOREHOLE | SAMPLE | DEPTH(m) |
|--------|----------|--------|----------|
| •      | 17-103   | 6      |          |

Project Number: 1413472

Checked By:                     

**Golder Associates**

Date: 19-May-17





# BURNSIDE

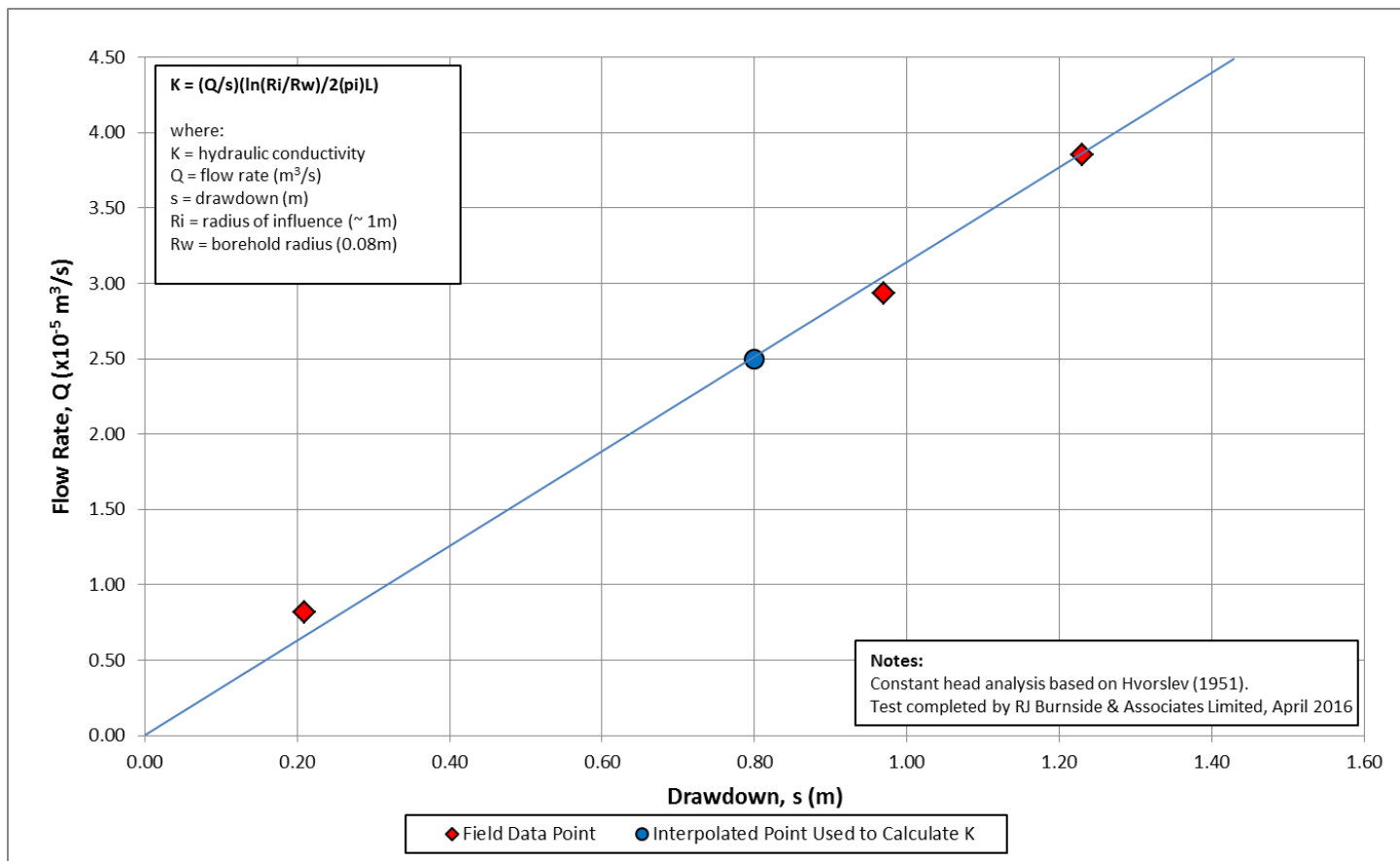
[ THE DIFFERENCE IS OUR PEOPLE ]

---

## Appendix D

### Hydraulic Conductivity and Infiltration Tests

Figure D-1

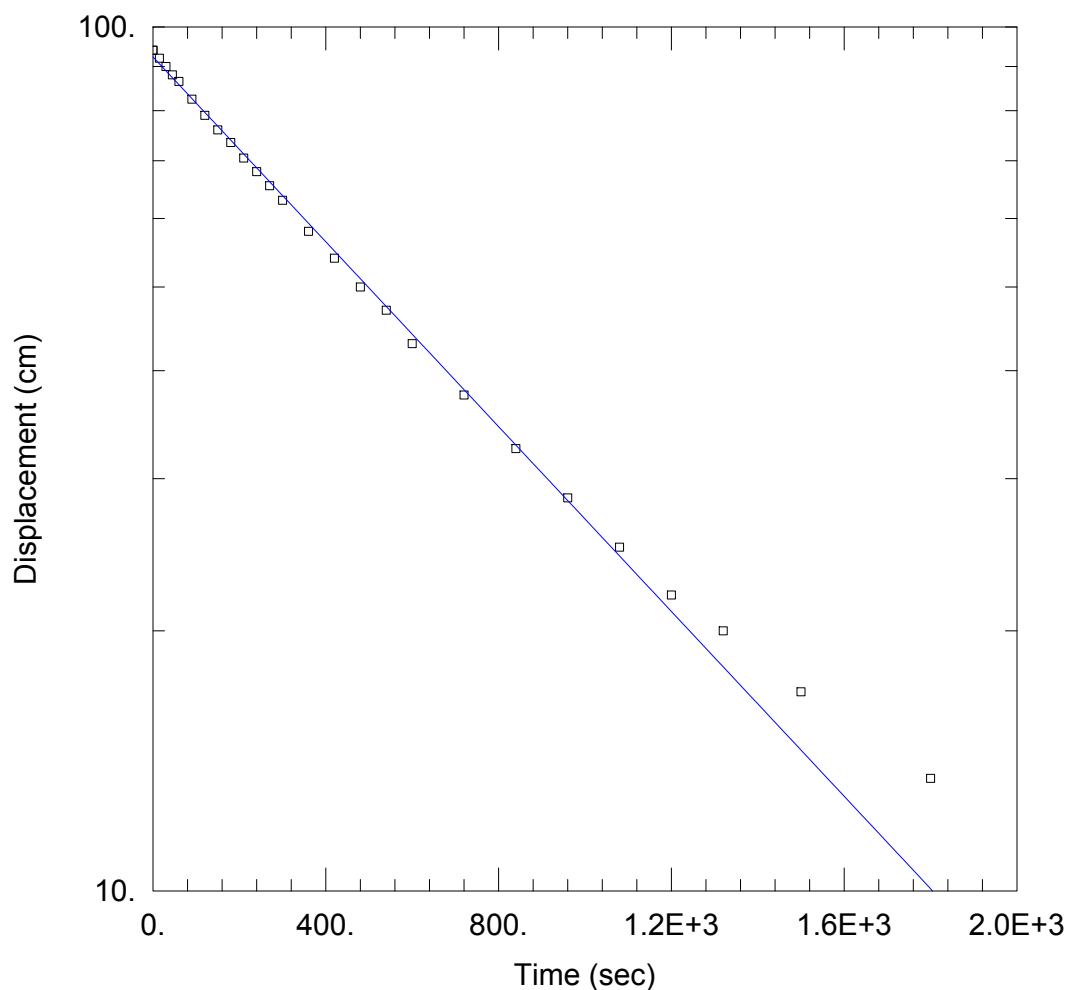


### HYDRAULIC CONDUCTIVITY ANALYSIS OF CONSTANT HEAD TEST AT BH16-5 – SCREENED IN SAND

| Well   | Test Type     | Test Date | Test Time | SWL Depth (mbtoc) | Flow Rate, Q |                                       | PWL Depth (mbtoc) | Drawdown (m) |
|--------|---------------|-----------|-----------|-------------------|--------------|---------------------------------------|-------------------|--------------|
|        |               |           |           |                   | (L/min)      | (x10 <sup>-5</sup> m <sup>3</sup> /s) |                   |              |
| BH16-5 | Constant Head | 6-Apr-16  | 9:00 AM   | 0.53              | 0.49         | 0.82                                  | 0.74              | 0.21         |
|        |               |           |           |                   | 1.76         | 2.93                                  | 1.50              | 0.97         |
|        |               |           |           |                   | 2.31         | 3.85                                  | 1.76              | 1.23         |

| Selected Data Point for K Calculation (Constant Head Tests) |              |                                  |                  |                          |       | Geological Material | In-Situ K (m/sec) | In-Situ K (cm/sec) |
|-------------------------------------------------------------|--------------|----------------------------------|------------------|--------------------------|-------|---------------------|-------------------|--------------------|
| Flow Rate (m³/s)                                            | Drawdown (m) | Saturated Interval Length, L (m) |                  |                          |       |                     |                   |                    |
|                                                             |              | SWL Elev. (masl)                 | PWL Elev. (masl) | Well Bottom Elev. (masl) | L (m) |                     |                   |                    |
| 2.50E-05                                                    | 0.8          | 186.37                           | 185.57           | 180.20                   | 1.52  | Sand                | 8.3E-06           | 8.3E-04            |

Figure D-2



### HYDRAULIC CONDUCTIVITY TEST AT BH16-6 - SCREENED IN SILTY SAND TO SANDY SILT

#### PROJECT INFORMATION

Company: R.J. Burnside and Associates  
 Client: York Downs  
 Project: 300038247  
 Location: Markham, ON  
 Test Well: BH16-6  
 Test Date: April 7, 2016

#### AQUIFER DATA

Saturated Thickness: 423. cm      Anisotropy Ratio ( $K_z/K_r$ ): 1.

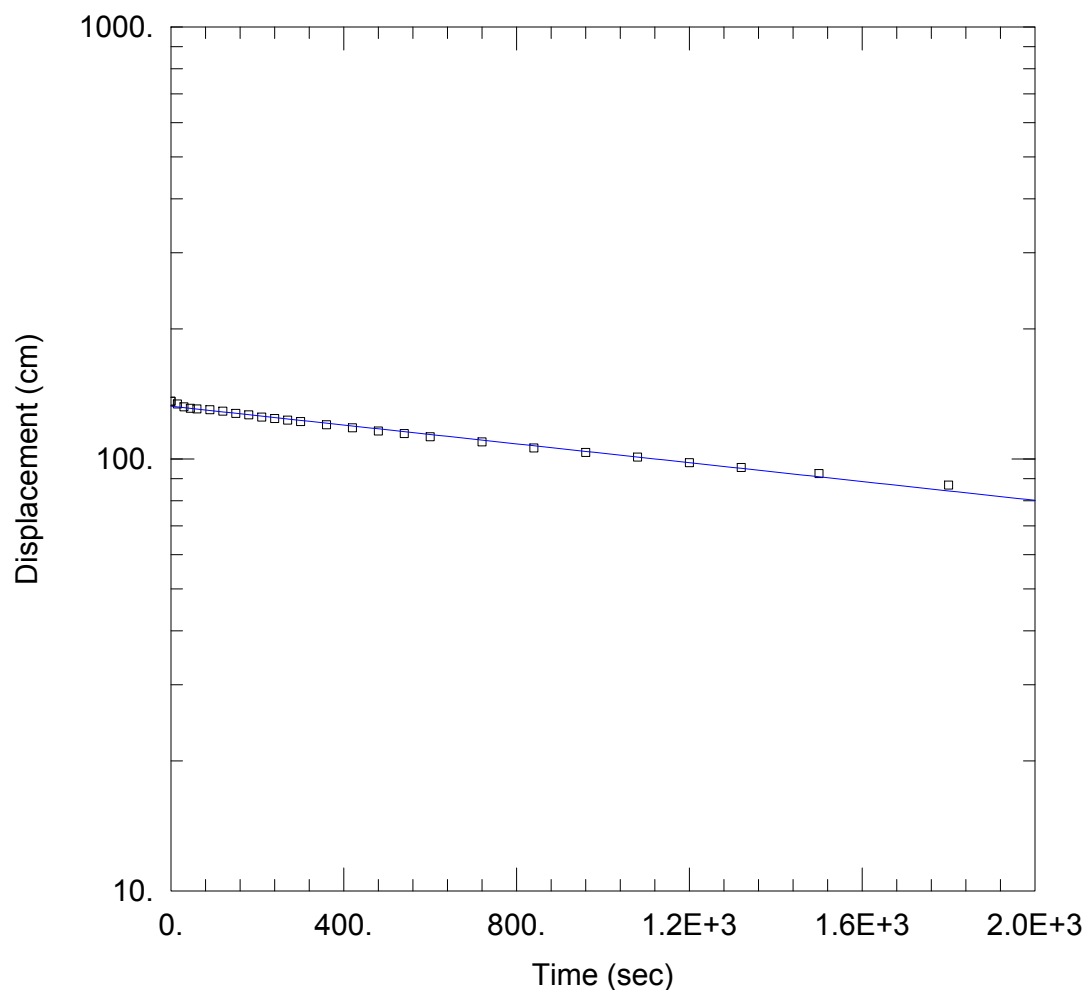
#### WELL DATA (BH16-6)

Initial Displacement: 94. cm      Static Water Column Height: 423. cm  
 Total Well Penetration Depth: 423. cm      Screen Length: 300. cm  
 Casing Radius: 2.54 cm      Well Radius: 7.62 cm

#### SOLUTION

Aquifer Model: Unconfined      Solution Method: Hvorslev  
 $K = 5.782E-5$  cm/sec       $y_0 = 92.31$  cm

Figure D-3



### HYDRAULIC CONDUCTIVITY TEST AT BH16-9 - SCREENED IN SILTY CLAY

#### PROJECT INFORMATION

Company: R.J. Burnside and Associates  
 Client: York Downs  
 Project: 300038247  
 Location: Markham, ON  
 Test Well: BH16-9  
 Test Date: April 7, 2016

#### AQUIFER DATA

Saturated Thickness: 429. cm      Anisotropy Ratio ( $K_z/K_r$ ): 1.

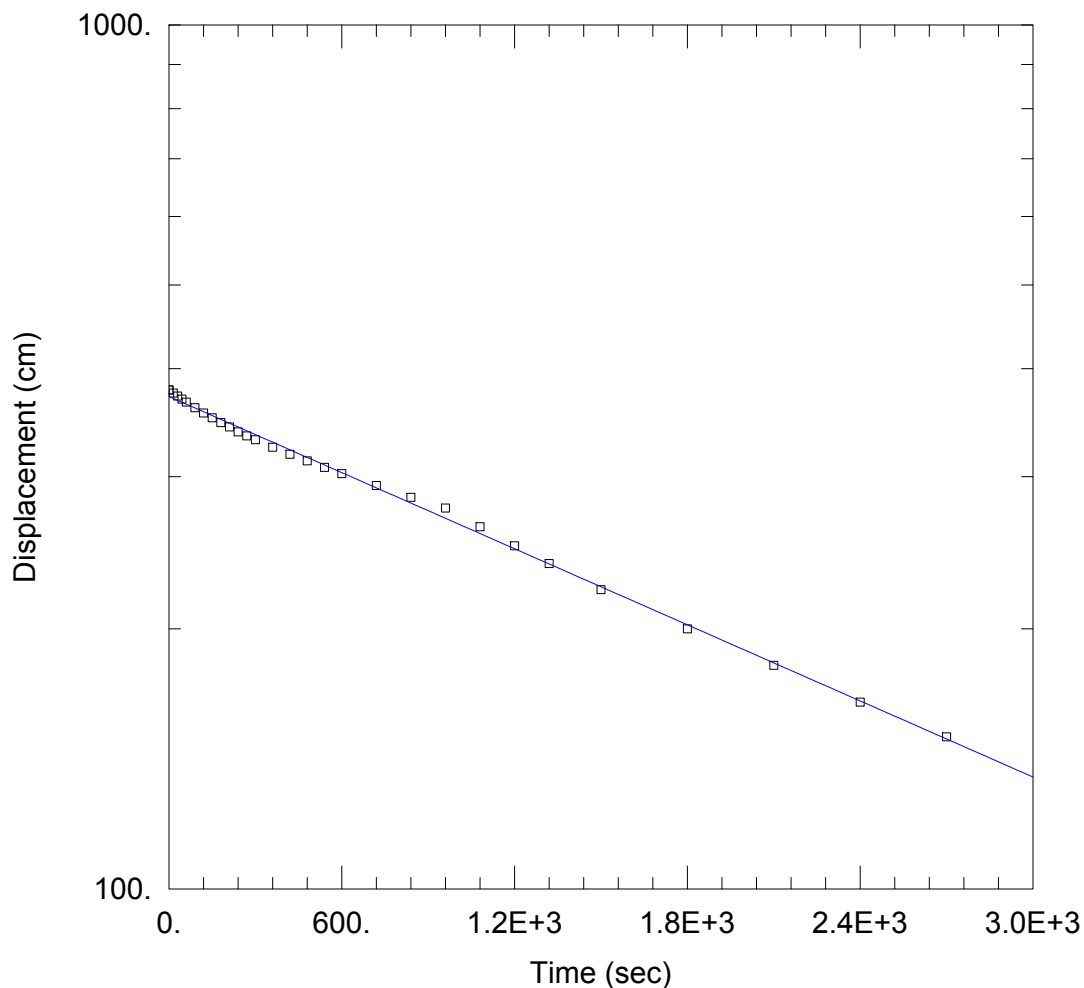
#### WELL DATA (BH16-9)

Initial Displacement: 136. cm      Static Water Column Height: 429. cm  
 Total Well Penetration Depth: 429. cm      Screen Length: 300. cm  
 Casing Radius: 2.54 cm      Well Radius: 7.62 cm

#### SOLUTION

Aquifer Model: Unconfined      Solution Method: Hvorslev  
 $K = 1.177E-5$  cm/sec       $y_0 = 132.4$  cm

Figure D-4



### HYDRAULIC CONDUCTIVITY TEST AT BH16-12S - SCREENED IN SANDY SILT

#### PROJECT INFORMATION

Company: R.J. Burnside and Associates  
 Client: York Downs  
 Project: 300038247  
 Location: Markham, ON  
 Test Well: BH16-12s  
 Test Date: April 6, 2016

#### AQUIFER DATA

Saturated Thickness: 560. cm

Anisotropy Ratio ( $K_z/K_r$ ): 1.

#### WELL DATA (BH16-12s)

Initial Displacement: 378. cm  
 Total Well Penetration Depth: 560. cm  
 Casing Radius: 2.54 cm

Static Water Column Height: 560. cm  
 Screen Length: 300. cm  
 Well Radius: 7.62 cm

#### SOLUTION

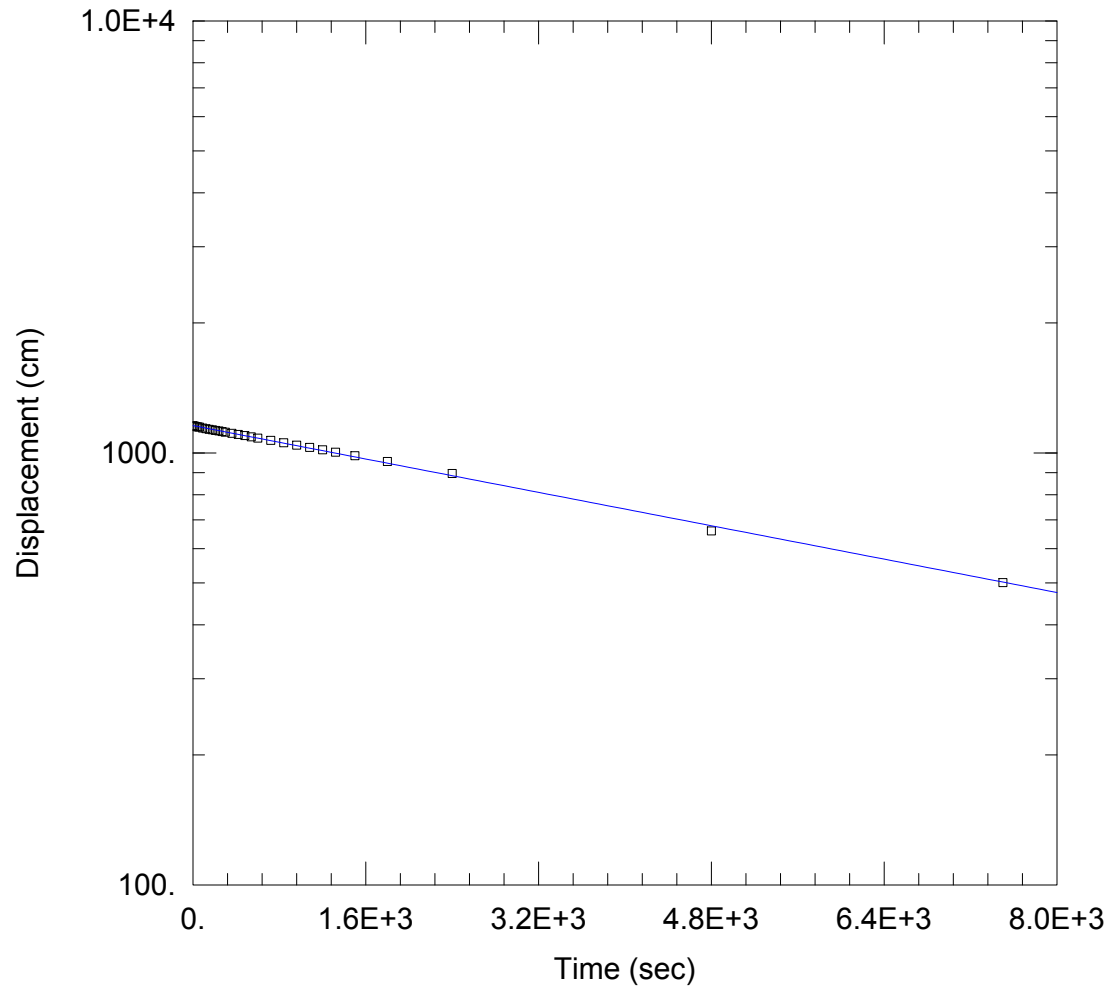
Aquifer Model: Unconfined

Solution Method: Hvorslev

$K = 1.587E-5$  cm/sec

$y_0 = 371.4$  cm

Figure D-5



### HYDRAULIC CONDUCTIVITY TEST AT BH16-13D - SCREENED IN SANDY SILT TO SILT/SAND

#### PROJECT INFORMATION

Company: R.J. Burnside and Associates  
 Client: York Downs  
 Project: 300038247  
 Location: Markham, ON  
 Test Well: BH16-13d  
 Test Date: April 7, 2016

#### AQUIFER DATA

Saturated Thickness: 1572. cm      Anisotropy Ratio ( $K_z/K_r$ ): 1.

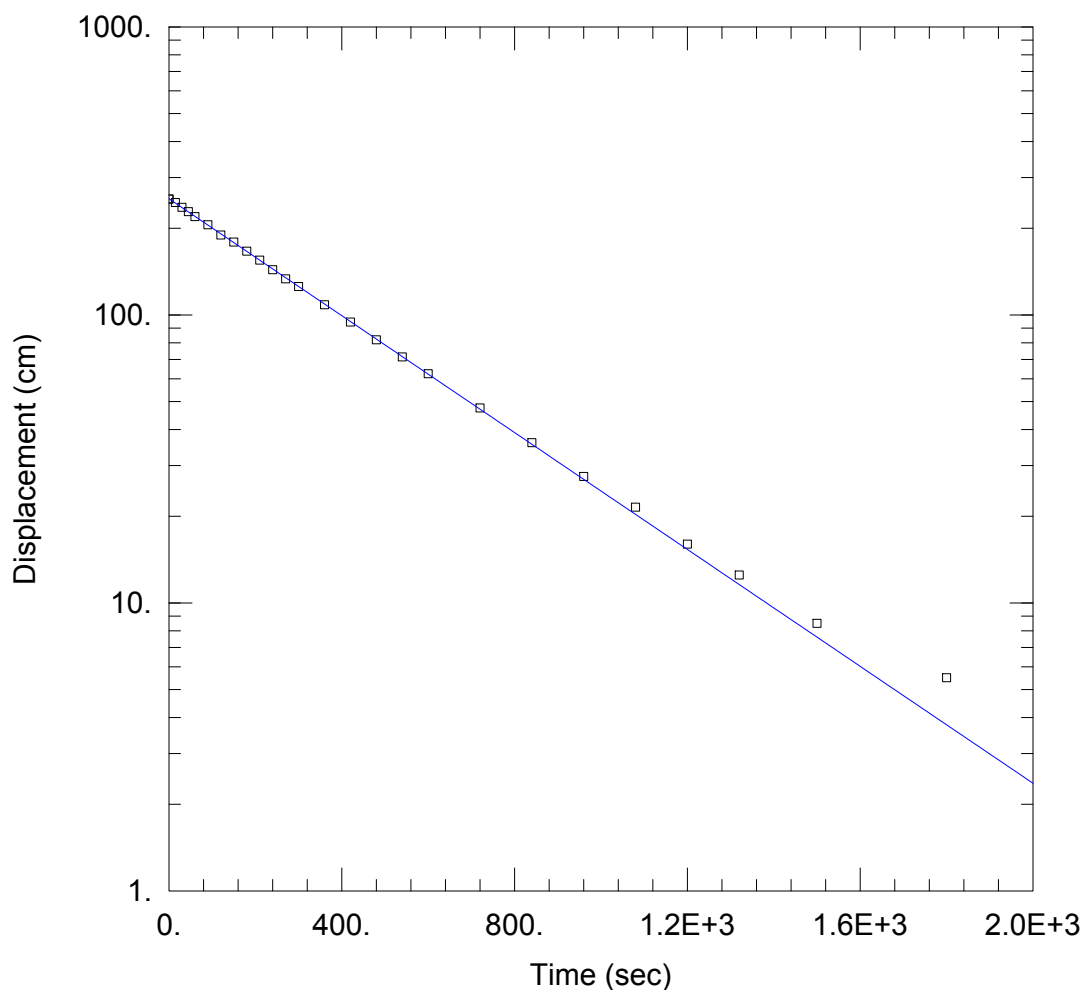
#### WELL DATA (BH16-13d)

Initial Displacement: 1156. cm      Static Water Column Height: 1572. cm  
 Total Well Penetration Depth: 1572. cm      Screen Length: 150. cm  
 Casing Radius: 2.54 cm      Well Radius: 7.62 cm

#### SOLUTION

Aquifer Model: Unconfined      Solution Method: Hvorslev  
 $K = 8.784E-6$  cm/sec       $y_0 = 1156.6$  cm

Figure D-6



### HYDRAULIC CONDUCTIVITY TEST AT BH16-14S - SCREENED IN SILTY SAND TO SAND

#### PROJECT INFORMATION

Company: R.J. Burnside and Associates  
 Client: York Downs  
 Project: 300038247  
 Location: Markham, ON  
 Test Well: BH16-14s  
 Test Date: April 7, 2016

#### AQUIFER DATA

Saturated Thickness: 396.5 cm      Anisotropy Ratio ( $K_z/K_r$ ): 1.

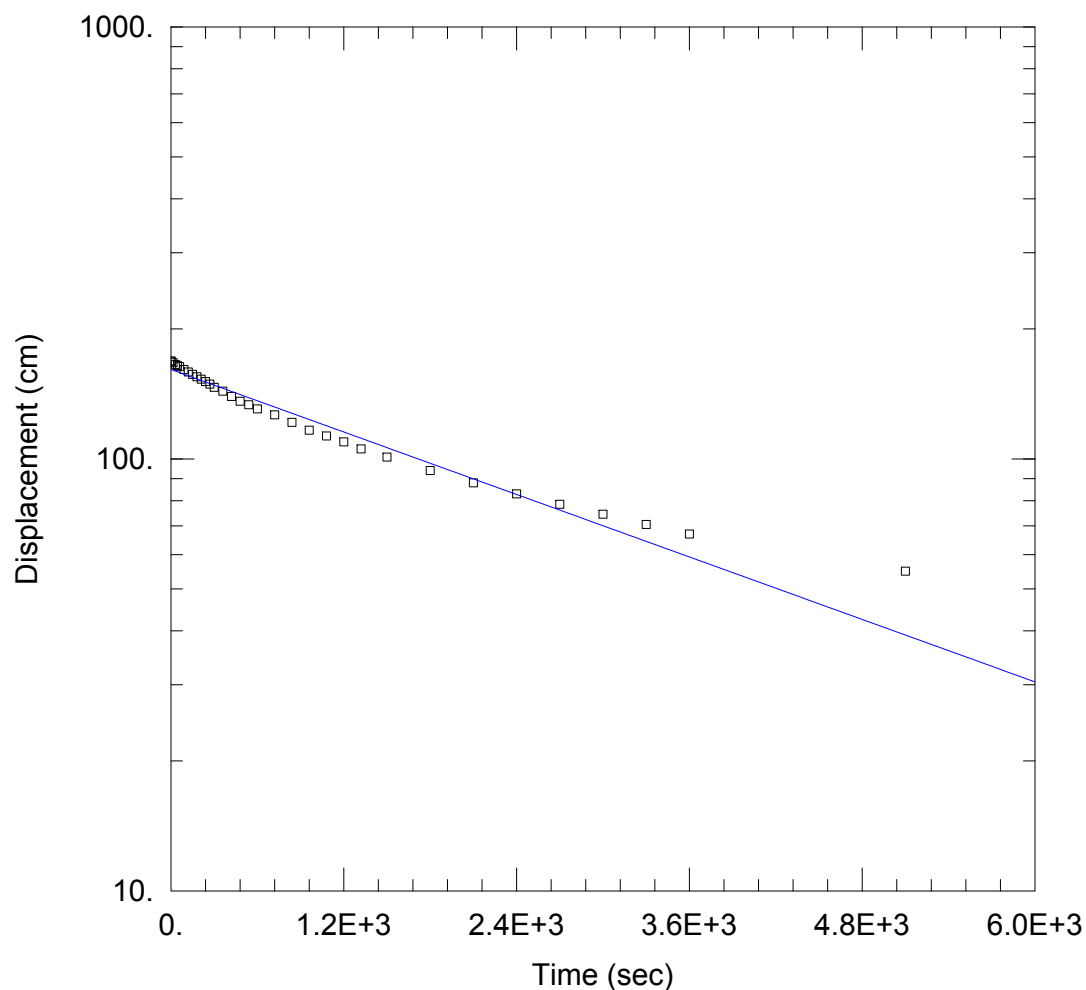
#### WELL DATA (BH16-14s)

Initial Displacement: 252.5 cm      Static Water Column Height: 396.5 cm  
 Total Well Penetration Depth: 396.5 cm      Screen Length: 90. cm  
 Casing Radius: 2.54 cm      Well Radius: 7.62 cm

#### SOLUTION

Aquifer Model: Unconfined      Solution Method: Hvorslev  
 $K = 0.000265$  cm/sec       $y_0 = 253.$  cm

Figure D-7



### HYDRAULIC CONDUCTIVITY TEST AT BH16-15S - SCREENED IN SAND/SILT TO SAND

#### PROJECT INFORMATION

Company: R.J. Burnside and Associates  
 Client: York Downs  
 Project: 300038247  
 Location: Markham, ON  
 Test Well: BH16-15s  
 Test Date: April 6, 2016

#### AQUIFER DATA

Saturated Thickness: 233.5 cm      Anisotropy Ratio ( $K_z/K_r$ ): 1.

#### WELL DATA (BH16-15s)

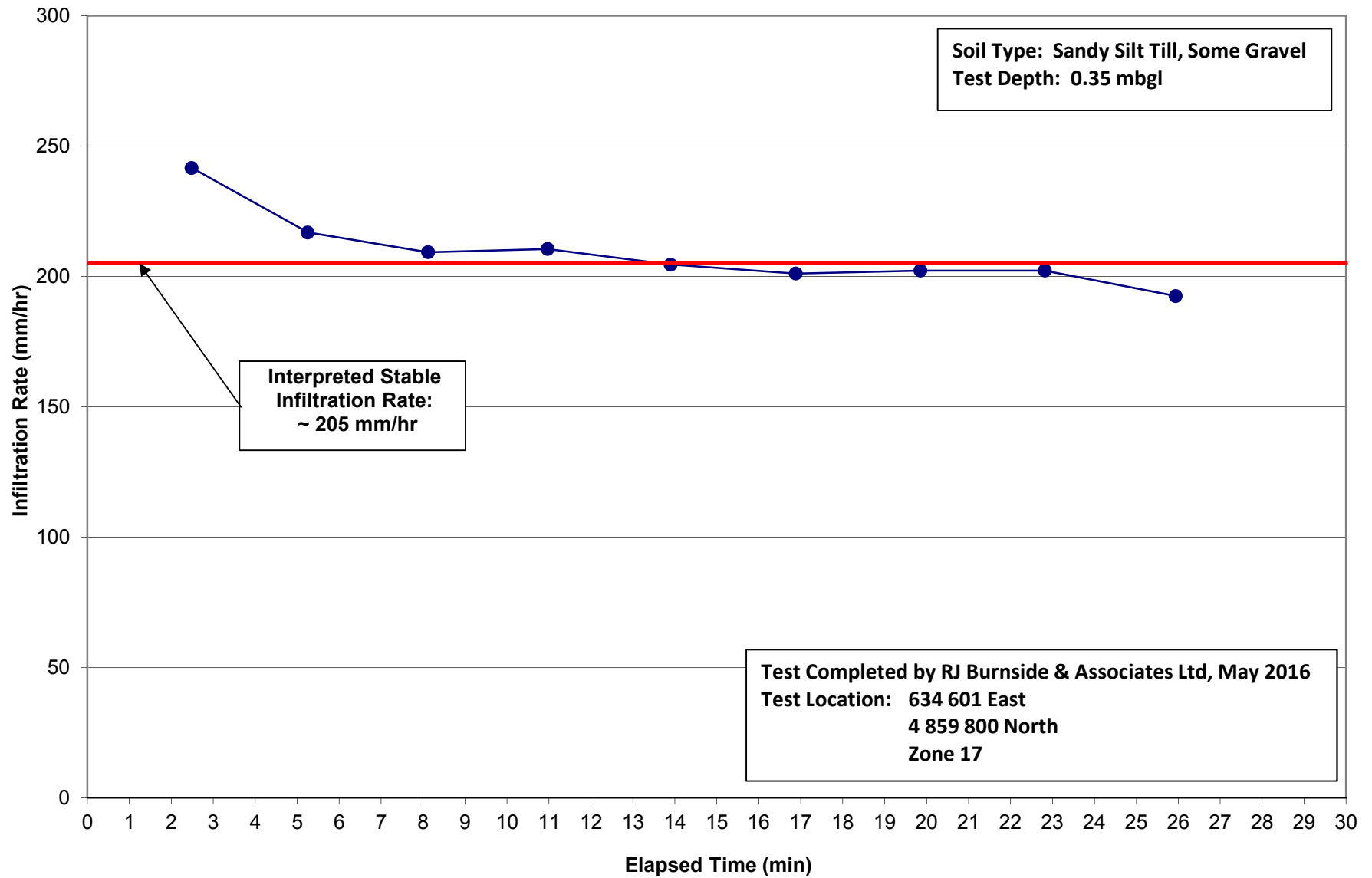
Initial Displacement: 168.5 cm      Static Water Column Height: 233.5 cm  
 Total Well Penetration Depth: 233.5 cm      Screen Length: 60. cm  
 Casing Radius: 2.54 cm      Well Radius: 7.62 cm

#### SOLUTION

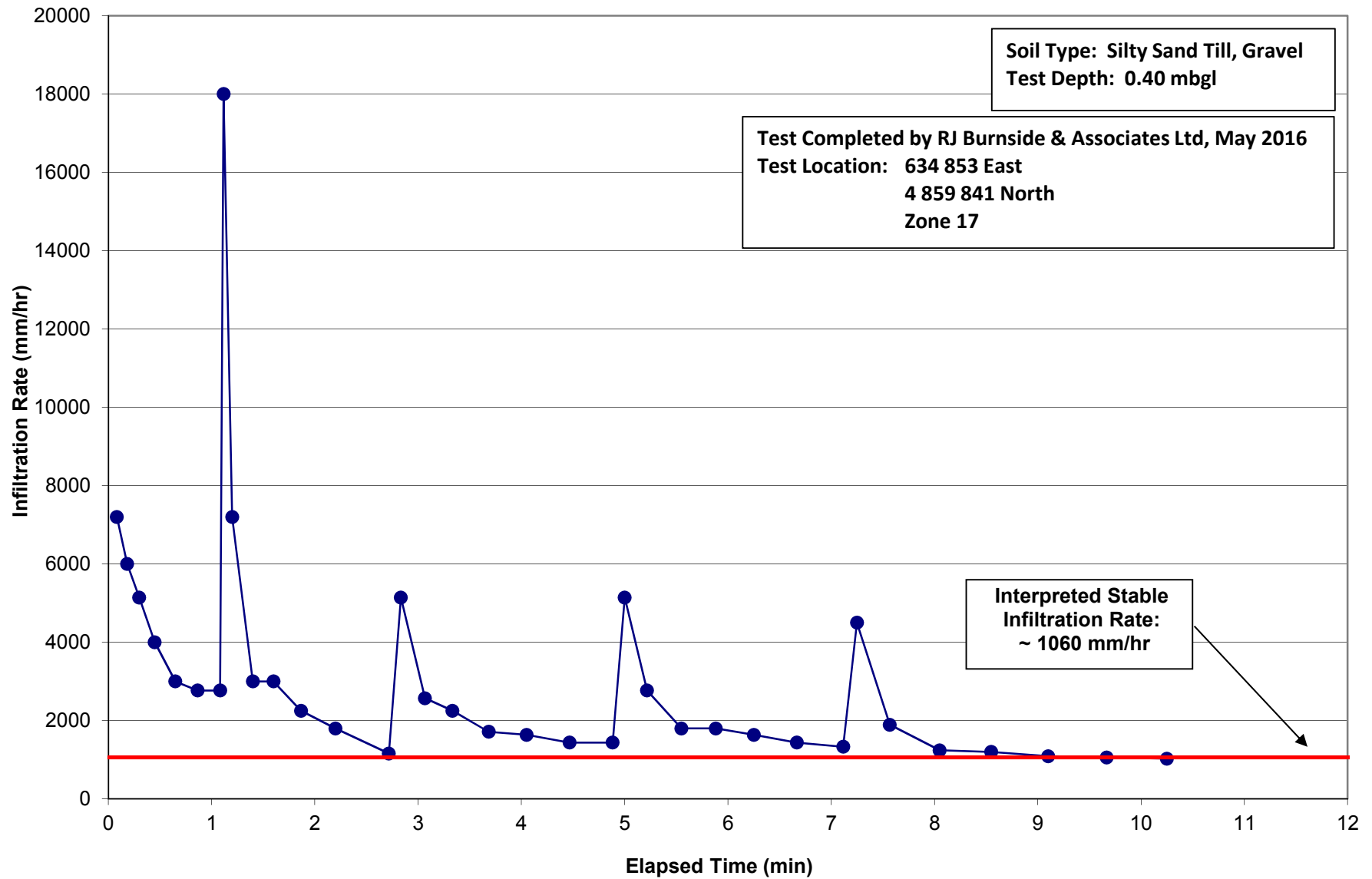
Aquifer Model: Unconfined      Solution Method: Hvorslev  
 $K = 4.118E-5$  cm/sec       $y_0 = 161.$  cm



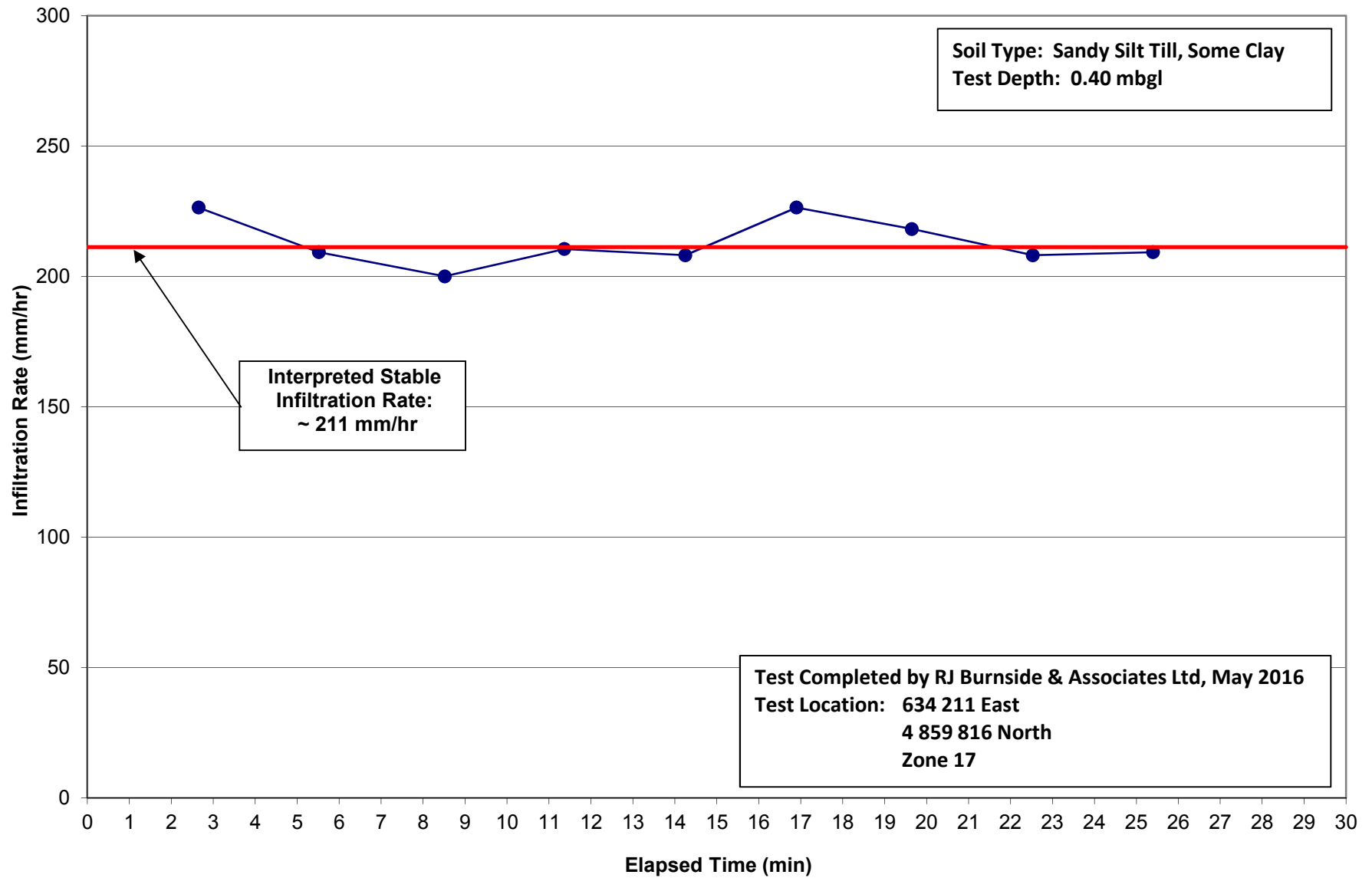
## Infiltration Rate at IT1



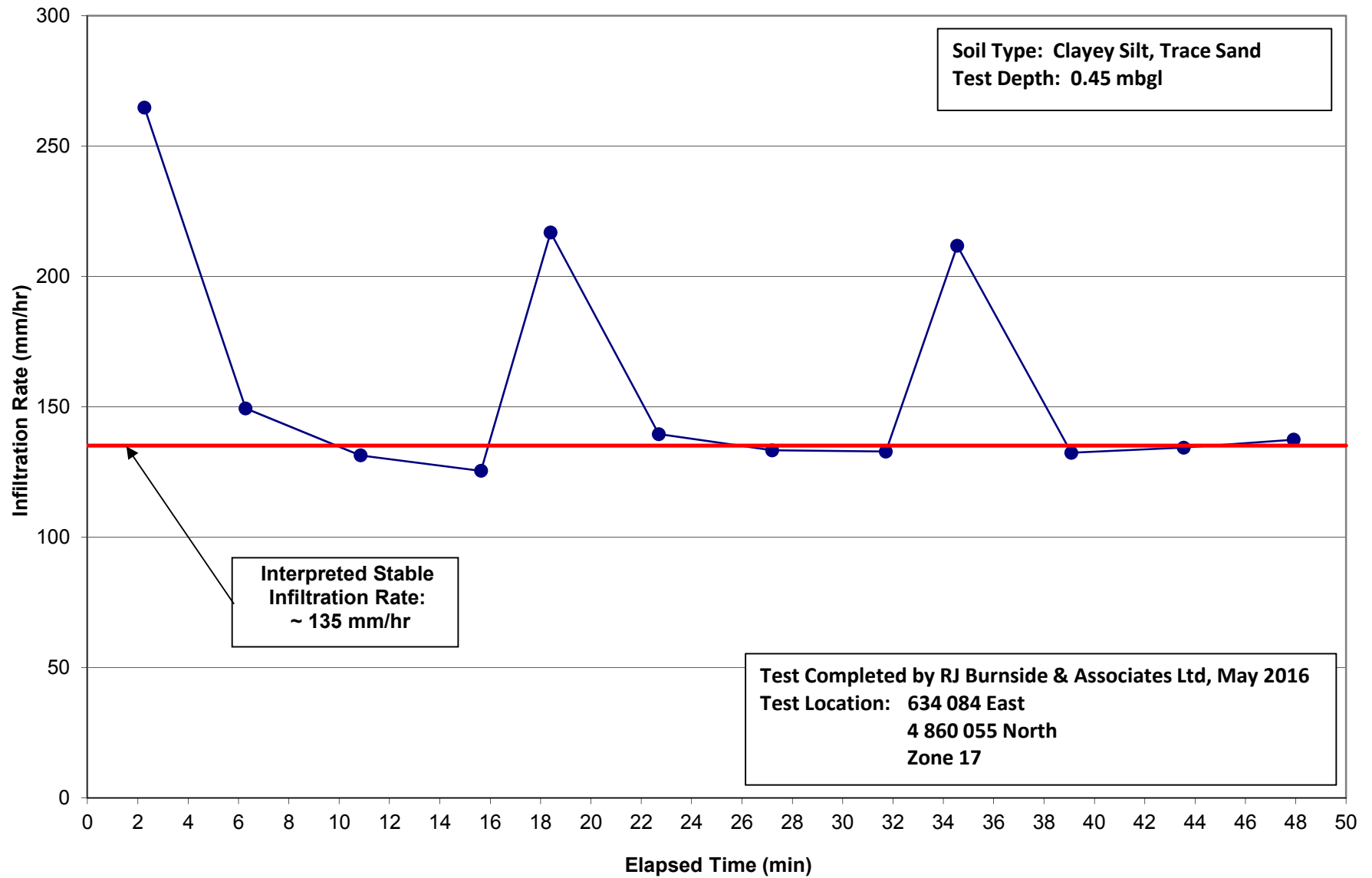
## Infiltration Rate at IT2



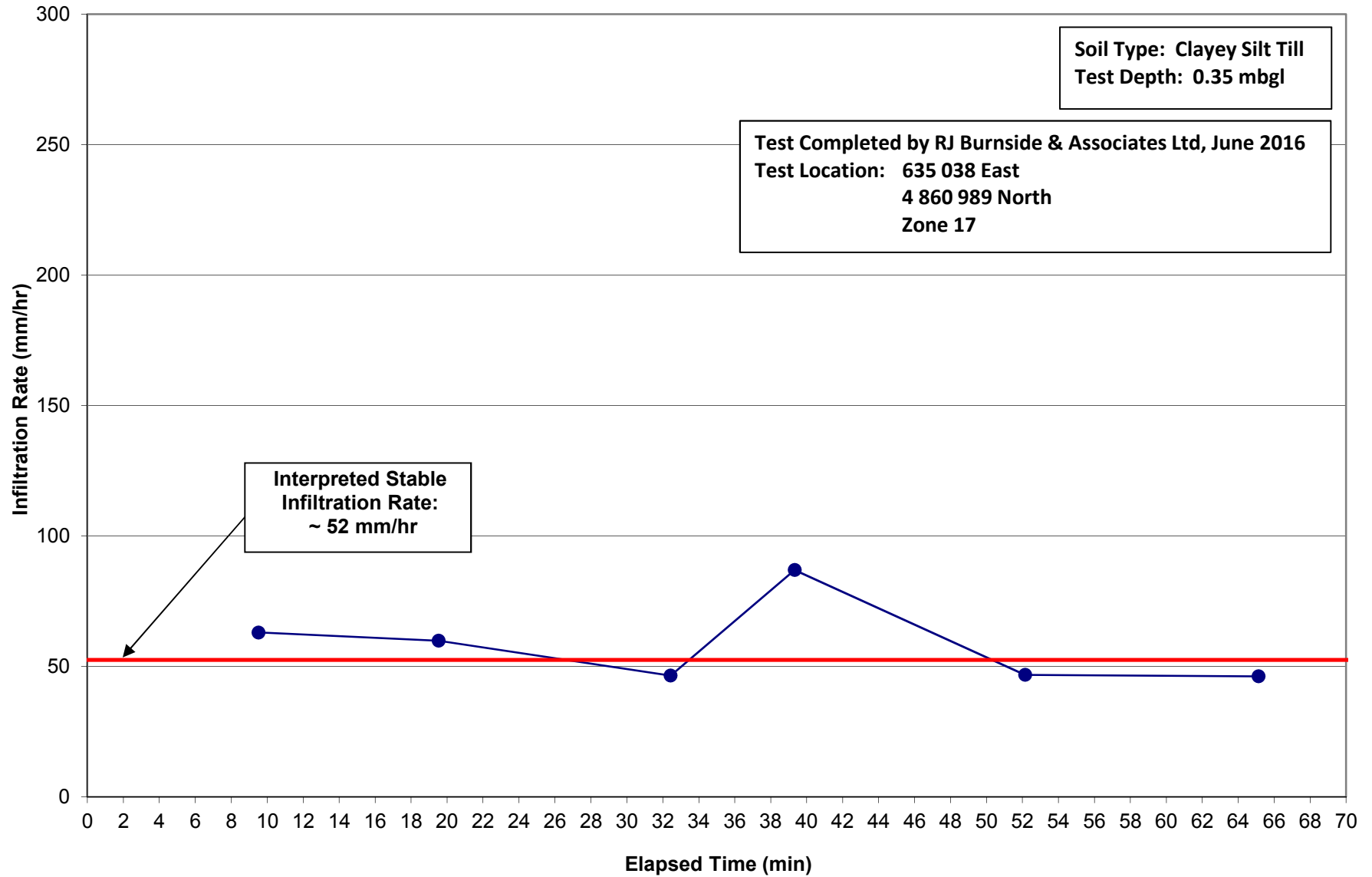
### Infiltration Rate at IT3



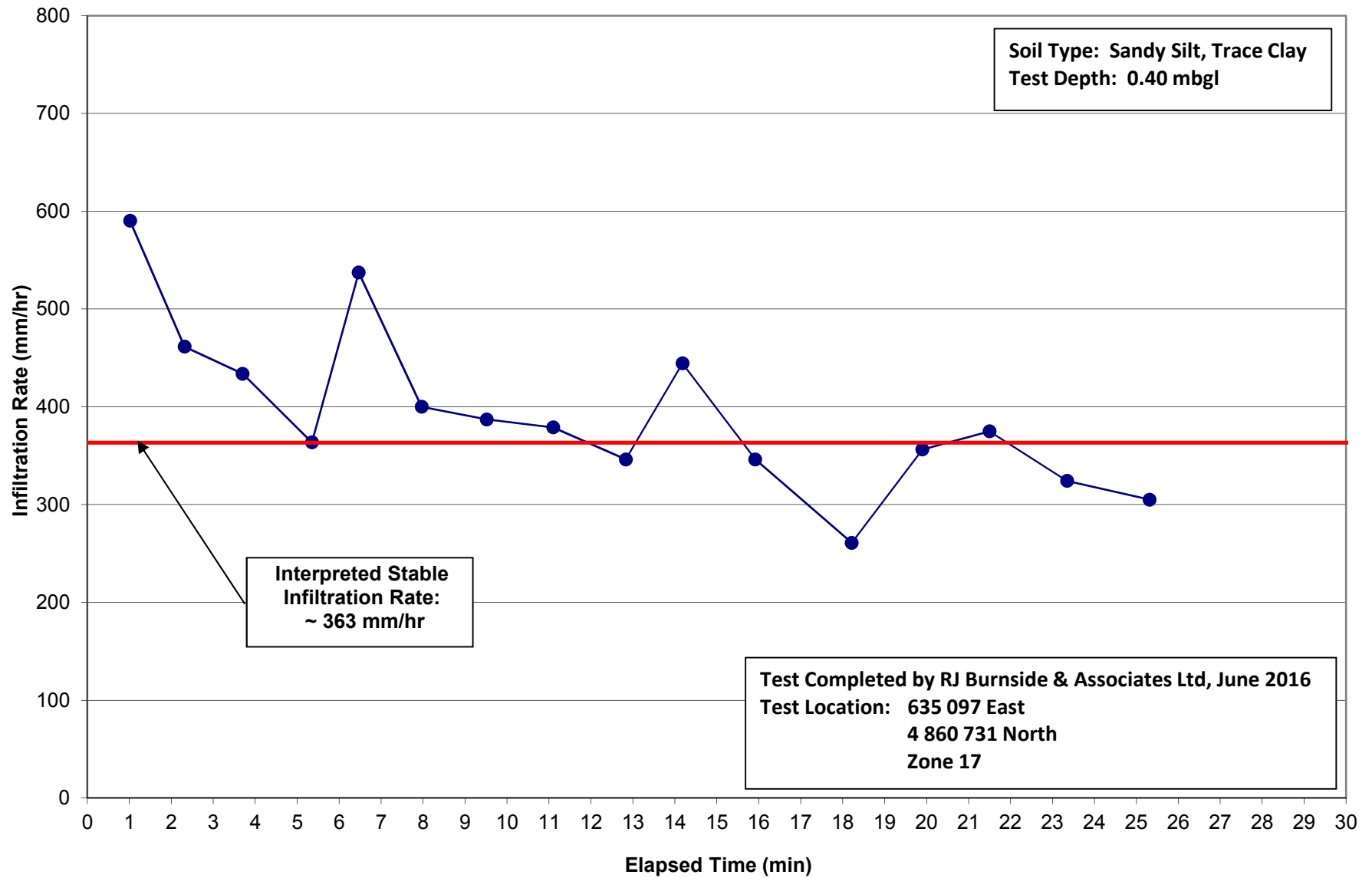
### Infiltration Rate at IT4



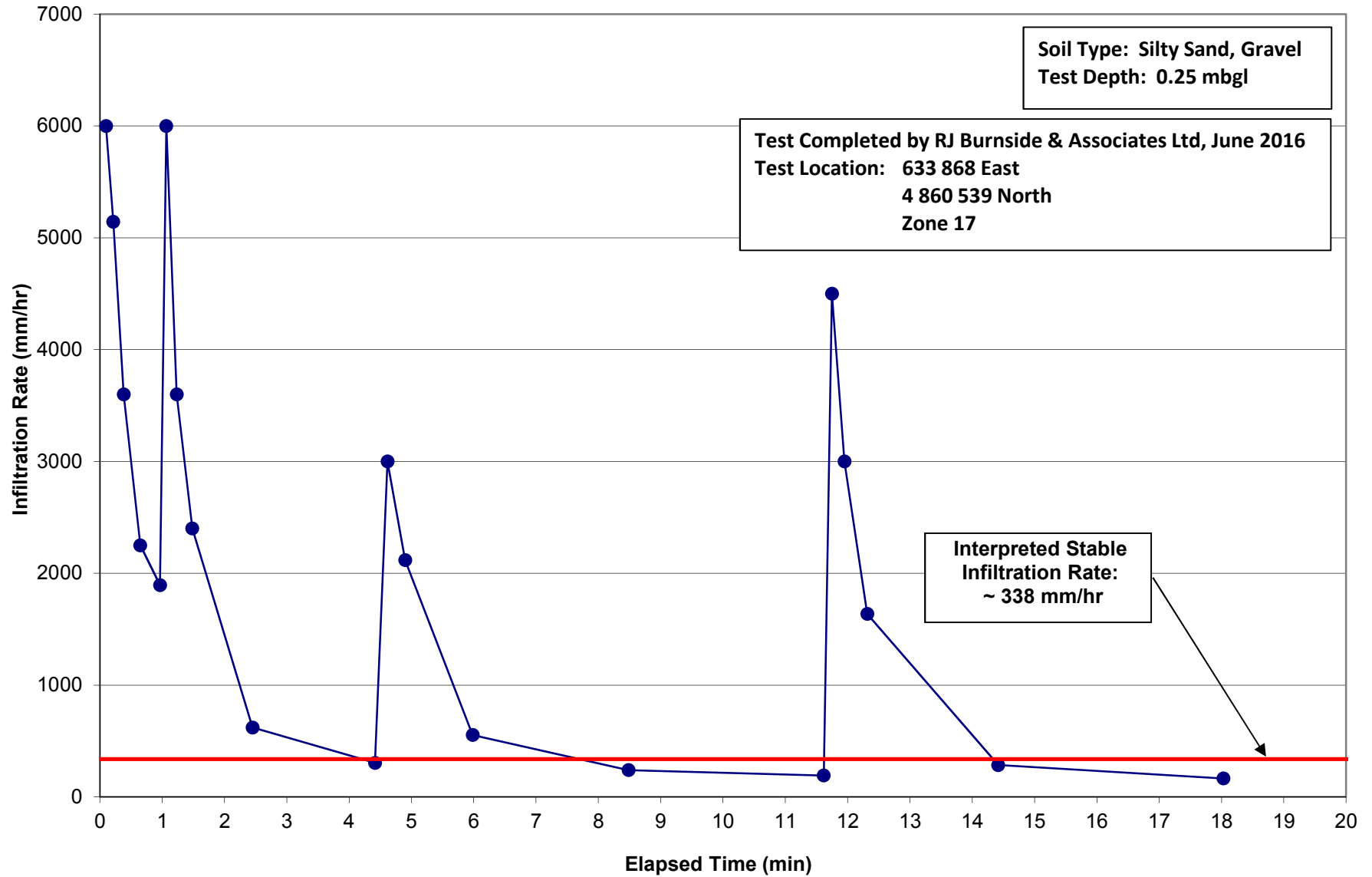
## Infiltration Rate at IT5



## Infiltration Rate at IT6



## Infiltration Rate at IT7





BURNSIDE

[ THE DIFFERENCE IS OUR PEOPLE ]

## Appendix E

### Groundwater Elevation Data



**Table E-1**  
**Monitoring Well Groundwater Elevations**

| Well      | Well Depth (mbgl) | Casing Stick up (m) | Ground Elevation (masl) | 29-Mar-16                |                            | 22-Apr-16                |                            | 20-May-16                |                            | 29-Jun-16                |                            |
|-----------|-------------------|---------------------|-------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|
|           |                   |                     |                         | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) |
| BH16-3    | 5.87              | 0.88                | 197.56                  | 4.54                     | 193.02                     | 4.36                     | 193.20                     | 4.55                     | 193.01                     | 4.75                     | 192.81                     |
| BH16-4    | 6.02              | 0.83                | 184.71                  | 1.39                     | 183.32                     | 1.17                     | 183.54                     | 1.35                     | 183.36                     | 1.52                     | 183.19                     |
| BH16-5    | 5.88              | 0.82                | 186.08                  | -0.29                    | 186.37                     | -0.25                    | 186.33                     | 0.31                     | 185.78                     | 0.69                     | 185.39                     |
| BH16-6    | 4.39              | 0.72                | 186.88                  | 0.38                     | 186.50                     | 0.59                     | 186.29                     | 0.87                     | 186.02                     | 1.47                     | 185.42                     |
| BH16-7    | 4.33              | 0.74                | 187.59                  | 2.72                     | 184.88                     | 2.88                     | 184.72                     | 2.95                     | 184.64                     | 3.00                     | 184.60                     |
| BH16-8    | 6.03              | 0.81                | 183.22                  | 0.52                     | 182.70                     | 1.17                     | 182.06                     | 1.49                     | 181.74                     | 1.78                     | 181.45                     |
| BH16-9    | 4.76              | 0.84                | 183.30                  | 0.61                     | 182.69                     | 0.72                     | 182.58                     | 0.92                     | 182.39                     | 1.10                     | 182.20                     |
| BH16-10   | 5.78              | 0.78                | 190.66                  | 0.15                     | 190.51                     | 0.67                     | 190.00                     | 0.81                     | 189.85                     | 1.47                     | 189.19                     |
| BH16-11   | 5.91              | 0.74                | 181.20                  | 3.17                     | 178.03                     | 3.25                     | 177.95                     | 3.44                     | 177.77                     | 3.64                     | 177.56                     |
| BH16-12s  | 5.82              | 0.75                | 190.11                  | 0.39                     | 189.72                     | 0.97                     | 189.14                     | 1.40                     | 188.71                     | 1.78                     | 188.33                     |
| BH16-12d  | 15.72             | 0.73                | 190.08                  | -0.70                    | 190.78                     | -0.65                    | 190.73                     | -0.53                    | 190.61                     | -0.31                    | 190.39                     |
| BH16-13s  | 6.20              | 0.83                | 184.14                  | 1.68                     | 182.47                     | 1.79                     | 182.35                     | 2.32                     | 181.83                     | 2.63                     | 181.51                     |
| BH16-13d  | 16.10             | 0.93                | 184.07                  | 0.54                     | 183.54                     | 0.78                     | 183.30                     | 1.21                     | 182.87                     | 1.34                     | 182.74                     |
| BH16-14s  | 5.73              | 0.77                | 177.45                  | 1.86                     | 175.59                     | 2.07                     | 175.39                     | 2.17                     | 175.28                     | 2.33                     | 175.12                     |
| BH16-14d  | 15.51             | 0.74                | 177.45                  | 1.71                     | 175.74                     | 1.85                     | 175.60                     | 1.94                     | 175.51                     | 2.11                     | 175.35                     |
| BH16-15s  | 5.07              | 0.78                | 180.87                  | 2.91                     | 177.96                     | 3.22                     | 177.65                     | 3.47                     | 177.40                     | 3.80                     | 177.07                     |
| BH16-15d  | 14.29             | 0.73                | 180.87                  | 3.99                     | 176.88                     | 4.00                     | 176.87                     | 4.26                     | 176.61                     | 4.49                     | 176.39                     |
| BH16-16   | 12.43             | 0.81                | 179.60                  | -0.32                    | 179.92                     | -0.32                    | 179.92                     | 0.17                     | 179.43                     | 0.48                     | 179.13                     |
| BH14-1    | 3.50              | 0.00                | 178.59                  | -                        | -                          | 0.70                     | 177.89                     | -                        | -                          | 1.01                     | 177.58                     |
| BH14-2    | 3.60              | 0.00                | 178.74                  | -                        | -                          | 1.19                     | 177.55                     | -                        | -                          | 1.49                     | 177.25                     |
| BH14-3    | 3.70              | 0.00                | 178.67                  | -                        | -                          | 1.12                     | 177.55                     | -                        | -                          | 1.40                     | 177.27                     |
| BH14-8    | 5.01              | 0.81                | 196.19                  | 2.87                     | 193.32                     | 3.18                     | 193.01                     | 3.68                     | 192.51                     | 3.97                     | 192.22                     |
| BH14-12   | 4.55              | 0.00                | 179.48                  | -                        | -                          | 1.66                     | 177.83                     | 1.87                     | 177.61                     | 2.42                     | 177.06                     |
| BH14-15   | 5.80              | 1.06                | 179.83                  | 3.79                     | 176.04                     | 3.96                     | 175.88                     | 4.06                     | 175.77                     | 4.30                     | 175.54                     |
| BH14-17   | 6.13              | 1.02                | 194.43                  | 2.17                     | 192.26                     | 2.57                     | 191.87                     | 2.79                     | 191.65                     | 3.99                     | 190.44                     |
| BH14-29   | 6.14              | 0.68                | 190.39                  | 0.71                     | 189.69                     | 0.55                     | 189.85                     | 0.64                     | 189.75                     | 0.95                     | 189.45                     |
| BH14-33   | 7.46              | 0.93                | 194.67                  | 3.17                     | 191.50                     | 2.89                     | 191.78                     | 3.21                     | 191.47                     | 3.33                     | 191.35                     |
| BH17-104  | 7.05              | 0.00                | 186.74                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-106  | 10.26             | 0.00                | 181.76                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-110  | 8.15              | 0.00                | 184.00                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-115  | 11.88             | 0.98                | 180.74                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-127  | 7.87              | 0.96                | 189.56                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-130  | 12.00             | 0.00                | 183.95                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-131  | 8.88              | 0.00                | 185.96                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-137  | 10.68             | 0.90                | 181.66                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-139s | 6.08              | 0.89                | 184.00                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-139d | 11.13             | 0.91                | 184.00                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-140  | 6.05              | 0.99                | 186.89                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-147  | 10.25             | 0.85                | 194.67                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-05   | 14.13             | 0.00                | 179.72                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |

mbgl - metres below ground level

masl - metres above sea level

"-" denotes not part of monitoring round or unavailable data

**Table E-1**  
**Monitoring Well Groundwater Elevations**

| Well      | Well Depth (mbgl) | Casing Stick up (m) | Ground Elevation (masl) | 29-Jul-16                |                            | 31-Aug-16                |                            | 06-Oct-16                |                            | 28-Oct-16                |                            |
|-----------|-------------------|---------------------|-------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|
|           |                   |                     |                         | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) |
| BH16-3    | 5.87              | 0.88                | 197.56                  | 4.92                     | 192.64                     | 5.04                     | 192.52                     | 5.18                     | 192.38                     | 5.23                     | 192.33                     |
| BH16-4    | 6.02              | 0.83                | 184.71                  | 1.61                     | 183.10                     | 1.60                     | 183.11                     | 1.66                     | 183.05                     | 1.64                     | 183.07                     |
| BH16-5    | 5.88              | 0.82                | 186.08                  | 0.70                     | 185.38                     | 0.90                     | 185.18                     | 1.07                     | 185.01                     | 1.09                     | 184.99                     |
| BH16-6    | 4.39              | 0.72                | 186.88                  | 1.31                     | 185.57                     | 1.33                     | 185.55                     | 2.06                     | 184.82                     | 2.18                     | 184.70                     |
| BH16-7    | 4.33              | 0.74                | 187.59                  | 2.92                     | 184.68                     | 3.00                     | 184.60                     | 3.04                     | 184.56                     | 2.98                     | 184.62                     |
| BH16-8    | 6.03              | 0.81                | 183.22                  | 1.79                     | 181.44                     | 1.73                     | 181.50                     | 1.74                     | 181.49                     | 1.80                     | 181.43                     |
| BH16-9    | 4.76              | 0.84                | 183.30                  | 1.17                     | 182.13                     | 1.24                     | 182.06                     | 1.73                     | 181.57                     | 1.78                     | 181.52                     |
| BH16-10   | 5.78              | 0.78                | 190.66                  | 1.97                     | 188.69                     | 2.28                     | 188.38                     | 2.67                     | 188.00                     | 2.55                     | 188.11                     |
| BH16-11   | 5.91              | 0.74                | 181.20                  | 3.84                     | 177.37                     | 3.88                     | 177.33                     | 4.05                     | 177.16                     | 4.11                     | 177.10                     |
| BH16-12s  | 5.82              | 0.75                | 190.11                  | 2.00                     | 188.12                     | 2.11                     | 188.00                     | 2.45                     | 187.66                     | 2.58                     | 187.53                     |
| BH16-12d  | 15.72             | 0.73                | 190.08                  | -0.21                    | 190.29                     | -0.08                    | 190.16                     | 0.01                     | 190.07                     | -0.02                    | 190.10                     |
| BH16-13s  | 6.20              | 0.83                | 184.14                  | 3.20                     | 180.94                     | 3.43                     | 180.72                     | 3.64                     | 180.50                     | 3.69                     | 180.45                     |
| BH16-13d  | 16.10             | 0.93                | 184.07                  | 1.04                     | 183.04                     | 1.15                     | 182.92                     | 1.50                     | 182.58                     | 1.48                     | 182.60                     |
| BH16-14s  | 5.73              | 0.77                | 177.45                  | 2.33                     | 175.12                     | 2.39                     | 175.07                     | 2.35                     | 175.10                     | 2.30                     | 175.15                     |
| BH16-14d  | 15.51             | 0.74                | 177.45                  | 2.11                     | 175.34                     | 2.15                     | 175.30                     | 2.11                     | 175.34                     | 2.07                     | 175.38                     |
| BH16-15s  | 5.07              | 0.78                | 180.87                  | 4.12                     | 176.75                     | 4.32                     | 176.55                     | 4.50                     | 176.37                     | 4.50                     | 176.37                     |
| BH16-15d  | 14.29             | 0.73                | 180.87                  | 4.58                     | 176.29                     | 4.60                     | 176.27                     | 4.65                     | 176.22                     | 4.61                     | 176.26                     |
| BH16-16   | 12.43             | 0.81                | 179.60                  | 0.51                     | 179.09                     | 0.49                     | 179.12                     | 0.46                     | 179.14                     | 0.38                     | 179.22                     |
| BH14-1    | 3.50              | 0.00                | 178.59                  | 1.02                     | 177.57                     | 1.15                     | 177.44                     | -                        | -                          | 0.66                     | 177.93                     |
| BH14-2    | 3.60              | 0.00                | 178.74                  | 1.72                     | 177.02                     | 1.80                     | 176.94                     | -                        | -                          | 1.28                     | 177.46                     |
| BH14-3    | 3.70              | 0.00                | 178.67                  | 1.50                     | 177.17                     | 1.81                     | 176.86                     | -                        | -                          | 1.37                     | 177.30                     |
| BH14-8    | 5.01              | 0.81                | 196.19                  | 4.23                     | 191.97                     | 4.41                     | 191.78                     | 4.59                     | 191.60                     | 4.67                     | 191.52                     |
| BH14-12   | 4.55              | 0.00                | 179.48                  | 2.45                     | 177.03                     | 2.57                     | 176.91                     | 2.58                     | 176.90                     | 2.55                     | 176.93                     |
| BH14-15   | 5.80              | 1.06                | 179.83                  | 4.34                     | 175.50                     | 4.40                     | 175.44                     | 4.41                     | 175.43                     | 4.39                     | 175.45                     |
| BH14-17   | 6.13              | 1.02                | 194.43                  | 4.65                     | 189.79                     | 5.18                     | 189.25                     | 5.67                     | 188.76                     | 5.96                     | 188.47                     |
| BH14-29   | 6.14              | 0.68                | 190.39                  | 1.43                     | 188.97                     | 1.95                     | 188.45                     | 2.56                     | 187.84                     | 2.98                     | 187.42                     |
| BH14-33   | 7.46              | 0.93                | 194.67                  | 3.49                     | 191.18                     | 3.57                     | 191.10                     | 3.75                     | 190.92                     | 3.77                     | 190.90                     |
| BH17-104  | 7.05              | 0.00                | 186.74                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-106  | 10.26             | 0.00                | 181.76                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-110  | 8.15              | 0.00                | 184.00                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-115  | 11.88             | 0.98                | 180.74                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-127  | 7.87              | 0.96                | 189.56                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-130  | 12.00             | 0.00                | 183.95                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-131  | 8.88              | 0.00                | 185.96                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-137  | 10.68             | 0.90                | 181.66                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-139s | 6.08              | 0.89                | 184.00                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-139d | 11.13             | 0.91                | 184.00                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-140  | 6.05              | 0.99                | 186.89                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-147  | 10.25             | 0.85                | 194.67                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-05   | 14.13             | 0.00                | 179.72                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |

mbgl - metres below ground level

masl - metres above sea level

"-" denotes not part of monitoring round or unavailable data

**Table E-1**  
**Monitoring Well Groundwater Elevations**

| Well      | Well Depth (mbgl) | Casing Stick up (m) | Ground Elevation (masl) | 23-Nov-16                |                            | 14-Dec-16                |                            | 20-Jan-17                |                            | 27-Feb-17                |                            |
|-----------|-------------------|---------------------|-------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|
|           |                   |                     |                         | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) |
| BH16-3    | 5.87              | 0.88                | 197.56                  | 5.24                     | 192.32                     | 5.24                     | 192.32                     | 5.05                     | 192.51                     | 4.89                     | 192.67                     |
| BH16-4    | 6.02              | 0.83                | 184.71                  | 1.71                     | 183.00                     | 1.57                     | 183.14                     | 1.43                     | 183.29                     | 1.50                     | 183.21                     |
| BH16-5    | 5.88              | 0.82                | 186.08                  | 1.16                     | 184.92                     | 1.10                     | 184.98                     | 0.50                     | 185.58                     | 0.17                     | 185.91                     |
| BH16-6    | 4.39              | 0.72                | 186.88                  | 2.19                     | 184.69                     | 2.02                     | 184.86                     | 0.74                     | 186.14                     | 0.70                     | 186.18                     |
| BH16-7    | 4.33              | 0.74                | 187.59                  | 2.98                     | 184.61                     | 2.96                     | 184.64                     | 2.85                     | 184.74                     | 2.81                     | 184.79                     |
| BH16-8    | 6.03              | 0.81                | 183.22                  | 2.00                     | 181.23                     | 1.78                     | 181.45                     | 1.04                     | 182.19                     | 0.58                     | 182.65                     |
| BH16-9    | 4.76              | 0.84                | 183.30                  | 1.65                     | 181.65                     | 1.31                     | 181.99                     | 1.05                     | 182.25                     | 0.92                     | 182.38                     |
| BH16-10   | 5.78              | 0.78                | 190.66                  | 2.33                     | 188.33                     | 2.09                     | 188.57                     | 0.23                     | 190.43                     | 0.30                     | 190.36                     |
| BH16-11   | 5.91              | 0.74                | 181.20                  | 4.08                     | 177.13                     | 3.93                     | 177.28                     | 3.57                     | 177.64                     | 3.39                     | 177.82                     |
| BH16-12s  | 5.82              | 0.75                | 190.11                  | 2.72                     | 187.39                     | 1.99                     | 188.12                     | 0.60                     | 189.51                     | 0.47                     | 189.64                     |
| BH16-12d  | 15.72             | 0.73                | 190.08                  | 0.00                     | 190.08                     | -                        | -                          | 0.09                     | 189.99                     | -0.58                    | 190.66                     |
| BH16-13s  | 6.20              | 0.83                | 184.14                  | 3.56                     | 180.58                     | 3.31                     | 180.83                     | 2.45                     | 181.69                     | 1.91                     | 182.23                     |
| BH16-13d  | 16.10             | 0.93                | 184.07                  | 1.41                     | 182.67                     | 1.11                     | 182.97                     | 0.34                     | 183.73                     | 0.25                     | 183.83                     |
| BH16-14s  | 5.73              | 0.77                | 177.45                  | 2.29                     | 175.16                     | 2.26                     | 175.19                     | 2.04                     | 175.41                     | 1.98                     | 175.47                     |
| BH16-14d  | 15.51             | 0.74                | 177.45                  | 2.06                     | 175.39                     | 2.04                     | 175.41                     | 1.84                     | 175.61                     | 1.78                     | 175.67                     |
| BH16-15s  | 5.07              | 0.78                | 180.87                  | 4.57                     | 176.30                     | 4.39                     | 176.48                     | 3.49                     | 177.38                     | 3.49                     | 177.38                     |
| BH16-15d  | 14.29             | 0.73                | 180.87                  | 4.64                     | 176.23                     | -                        | -                          | 4.17                     | 176.70                     | 4.12                     | 176.75                     |
| BH16-16   | 12.43             | 0.81                | 179.60                  | 0.30                     | 179.30                     | 0.26                     | 179.34                     | 0.05                     | 179.55                     | -0.19                    | 179.79                     |
| BH14-1    | 3.50              | 0.00                | 178.59                  | 0.62                     | 177.97                     | -                        | -                          | -                        | -                          | -                        | -                          |
| BH14-2    | 3.60              | 0.00                | 178.74                  | 1.25                     | 177.49                     | -                        | -                          | -                        | -                          | -                        | -                          |
| BH14-3    | 3.70              | 0.00                | 178.67                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH14-8    | 5.01              | 0.81                | 196.19                  | 4.70                     | 191.49                     | 4.72                     | 191.47                     | 4.40                     | 191.79                     | 3.59                     | 192.60                     |
| BH14-12   | 4.55              | 0.00                | 179.48                  | 2.34                     | 177.14                     | -                        | -                          | 1.42                     | 178.06                     | 0.54                     | 178.94                     |
| BH14-15   | 5.80              | 1.06                | 179.83                  | 4.40                     | 175.44                     | -                        | -                          | 4.05                     | 175.79                     | 3.96                     | 175.88                     |
| BH14-17   | 6.13              | 1.02                | 194.43                  | 5.95                     | 188.48                     | 5.96                     | 188.47                     | 5.23                     | 189.20                     | 2.49                     | 191.94                     |
| BH14-29   | 6.14              | 0.68                | 190.39                  | 3.16                     | 187.24                     | 3.22                     | 187.18                     | 2.47                     | 187.93                     | 1.69                     | 188.71                     |
| BH14-33   | 7.46              | 0.93                | 194.67                  | 3.79                     | 190.88                     | 3.81                     | 190.86                     | 3.35                     | 191.32                     | 3.24                     | 191.43                     |
| BH17-104  | 7.05              | 0.00                | 186.74                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-106  | 10.26             | 0.00                | 181.76                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-110  | 8.15              | 0.00                | 184.00                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-115  | 11.88             | 0.98                | 180.74                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-127  | 7.87              | 0.96                | 189.56                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-130  | 12.00             | 0.00                | 183.95                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-131  | 8.88              | 0.00                | 185.96                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-137  | 10.68             | 0.90                | 181.66                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-139s | 6.08              | 0.89                | 184.00                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-139d | 11.13             | 0.91                | 184.00                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-140  | 6.05              | 0.99                | 186.89                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-147  | 10.25             | 0.85                | 194.67                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |
| BH17-05   | 14.13             | 0.00                | 179.72                  | -                        | -                          | -                        | -                          | -                        | -                          | -                        | -                          |

mbgl - metres below ground level

masl - metres above sea level

"-" denotes not part of monitoring round or unavailable data

**Table E-1**  
**Monitoring Well Groundwater Elevations**

| Well      | Well Depth (mbgl) | Casing Stick up (m) | Ground Elevation (masl) | 21-Mar-17                |                            | 21-Apr-17                |                            | 16-May-17                |                            | 02-Aug-17                |                            |
|-----------|-------------------|---------------------|-------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|
|           |                   |                     |                         | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) |
| BH16-3    | 5.87              | 0.88                | 197.56                  | 4.66                     | 192.90                     | 4.05                     | 193.51                     | 4.29                     | 193.27                     | 4.51                     | 193.05                     |
| BH16-4    | 6.02              | 0.83                | 184.71                  | 1.32                     | 183.39                     | 1.13                     | 183.58                     | 1.21                     | 183.50                     | 1.41                     | 183.30                     |
| BH16-5    | 5.88              | 0.82                | 186.08                  | 0.33                     | 185.75                     | -0.33                    | 186.41                     | -0.14                    | 186.22                     | 0.15                     | 185.93                     |
| BH16-6    | 4.39              | 0.72                | 186.88                  | 0.89                     | 185.99                     | 0.25                     | 186.63                     | 0.54                     | 186.34                     | 0.67                     | 186.21                     |
| BH16-7    | 4.33              | 0.74                | 187.59                  | 2.95                     | 184.65                     | 2.55                     | 185.05                     | 2.91                     | 184.69                     | 2.93                     | 184.67                     |
| BH16-8    | 6.03              | 0.81                | 183.22                  | 1.15                     | 182.08                     | 0.43                     | 182.80                     | 1.20                     | 182.03                     | 1.46                     | 181.77                     |
| BH16-9    | 4.76              | 0.84                | 183.30                  | 0.92                     | 182.38                     | 0.62                     | 182.68                     | 0.77                     | 182.53                     | 0.79                     | 182.51                     |
| BH16-10   | 5.78              | 0.78                | 190.66                  | 0.73                     | 189.93                     | 0.16                     | 190.50                     | 0.74                     | 189.92                     | 1.06                     | 189.60                     |
| BH16-11   | 5.91              | 0.74                | 181.20                  | 3.45                     | 177.76                     | 3.23                     | 177.98                     | 3.22                     | 177.99                     | 3.35                     | 177.86                     |
| BH16-12s  | 5.82              | 0.75                | 190.11                  | 0.71                     | 189.40                     | 0.30                     | 189.81                     | 0.92                     | 189.19                     | 1.28                     | 188.83                     |
| BH16-12d  | 15.72             | 0.73                | 190.08                  | -0.57                    | 190.65                     | -0.43                    | 190.51                     | -0.60                    | 190.68                     | -0.31                    | 190.39                     |
| BH16-13s  | 6.20              | 0.83                | 184.14                  | 2.02                     | 182.12                     | 1.53                     | 182.61                     | 1.81                     | 182.33                     | 2.28                     | 181.86                     |
| BH16-13d  | 16.10             | 0.93                | 184.07                  | 0.20                     | 183.88                     | 0.01                     | 184.07                     | 0.10                     | 183.98                     | 0.14                     | 183.94                     |
| BH16-14s  | 5.73              | 0.77                | 177.45                  | 2.10                     | 175.35                     | 1.85                     | 175.60                     | 2.07                     | 175.38                     | 2.18                     | 175.27                     |
| BH16-14d  | 15.51             | 0.74                | 177.45                  | 1.95                     | 175.50                     | 1.74                     | 175.71                     | 1.93                     | 175.52                     | 2.03                     | 175.42                     |
| BH16-15s  | 5.07              | 0.78                | 180.87                  | 3.38                     | 177.49                     | 3.06                     | 177.81                     | 3.19                     | 177.69                     | 3.52                     | 177.35                     |
| BH16-15d  | 14.29             | 0.73                | 180.87                  | 4.14                     | 176.73                     | 3.87                     | 177.00                     | 4.00                     | 176.87                     | 4.21                     | 176.66                     |
| BH16-16   | 12.43             | 0.81                | 179.60                  | -0.29                    | 179.89                     | -0.38                    | 179.98                     | -0.29                    | 179.89                     | -0.26                    | 179.86                     |
| BH14-1    | 3.50              | 0.00                | 178.59                  | 1.28                     | 177.31                     | 0.47                     | 178.12                     | 1.39                     | 177.20                     | -                        | -                          |
| BH14-2    | 3.60              | 0.00                | 178.74                  | 1.01                     | 177.73                     | 0.78                     | 177.96                     | 0.98                     | 177.76                     | -                        | -                          |
| BH14-3    | 3.70              | 0.00                | 178.67                  | 0.97                     | 177.70                     | -                        | -                          | 1.19                     | 177.48                     | -                        | -                          |
| BH14-8    | 5.01              | 0.81                | 196.19                  | 3.63                     | 192.56                     | 2.79                     | 193.40                     | 3.16                     | 193.03                     | 3.63                     | 192.56                     |
| BH14-12   | 4.55              | 0.00                | 179.48                  | 1.26                     | 178.22                     | 0.25                     | 179.23                     | 1.44                     | 178.04                     | 2.03                     | 177.45                     |
| BH14-15   | 5.80              | 1.06                | 179.83                  | 4.06                     | 175.78                     | 3.75                     | 176.09                     | 3.98                     | 175.86                     | 4.08                     | 175.76                     |
| BH14-17   | 6.13              | 1.02                | 194.43                  | 2.46                     | 191.97                     | 2.17                     | 192.26                     | 2.47                     | 191.96                     | 2.97                     | 191.46                     |
| BH14-29   | 6.14              | 0.68                | 190.39                  | 1.34                     | 189.06                     | 0.93                     | 189.47                     | 0.78                     | 189.62                     | 0.83                     | 189.57                     |
| BH14-33   | 7.46              | 0.93                | 194.67                  | 3.10                     | 191.58                     | 2.87                     | 191.80                     | 2.45                     | 192.22                     | 3.05                     | 191.62                     |
| BH17-104  | 7.05              | 0.00                | 186.74                  | -0.54                    | 187.28                     | 0.18                     | 186.56                     | 0.38                     | 186.36                     | 0.30                     | 186.44                     |
| BH17-106  | 10.26             | 0.00                | 181.76                  | -0.19                    | 181.95                     | -0.32                    | 182.08                     | -0.22                    | 181.98                     | 0.13                     | 181.63                     |
| BH17-110  | 8.15              | 0.00                | 184.00                  | 5.91                     | 178.09                     | 5.53                     | 178.47                     | 5.69                     | 178.31                     | 5.78                     | 178.22                     |
| BH17-115  | 11.88             | 0.98                | 180.74                  | 3.96                     | 176.78                     | 3.74                     | 177.01                     | 3.75                     | 177.00                     | 3.98                     | 176.77                     |
| BH17-127  | 7.87              | 0.96                | 189.56                  | -                        | -                          | 2.90                     | 186.67                     | 2.67                     | 186.90                     | 2.97                     | 186.60                     |
| BH17-130  | 12.00             | 0.00                | 183.95                  | -                        | -                          | 3.05                     | 180.90                     | 2.77                     | 181.18                     | 2.83                     | 181.12                     |
| BH17-131  | 8.88              | 0.00                | 185.96                  | -                        | -                          | 3.10                     | 182.86                     | 2.59                     | 183.37                     | 2.84                     | 183.12                     |
| BH17-137  | 10.68             | 0.90                | 181.66                  | -                        | -                          | 1.67                     | 179.99                     | 1.79                     | 179.87                     | -                        | -                          |
| BH17-139s | 6.08              | 0.89                | 184.00                  | -                        | -                          | 2.86                     | 181.14                     | 2.77                     | 181.23                     | 3.04                     | 180.96                     |
| BH17-139d | 11.13             | 0.91                | 184.00                  | -                        | -                          | 3.29                     | 180.71                     | 3.53                     | 180.47                     | 3.72                     | 180.28                     |
| BH17-140  | 6.05              | 0.99                | 186.89                  | -                        | -                          | 1.95                     | 184.94                     | 2.60                     | 184.29                     | 2.92                     | 183.97                     |
| BH17-147  | 10.25             | 0.85                | 194.67                  | -                        | -                          | 0.21                     | 194.46                     | 0.39                     | 194.28                     | 0.48                     | 194.19                     |
| BH17-05   | 14.13             | 0.00                | 179.72                  | 5.17                     | 174.55                     | 4.91                     | 174.81                     | 5.09                     | 174.63                     | 5.21                     | 174.51                     |

mbgl - metres below ground level

masl - metres above sea level

"-" denotes not part of monitoring round or unavailable data

**Table E-2  
Piezometer Groundwater Elevations**

| Piezometer | Depth<br>(mbgl) | Casing<br>Stick up<br>(m) | Ground<br>Elevation<br>(masl) | 22-Mar-16                         |                                  | 29-Mar-16                         |                                  | 22-Apr-16                         |                                  | 20-May-16                         |                                  | 29-Jun-16                         |                                  |
|------------|-----------------|---------------------------|-------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|
|            |                 |                           |                               | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) |
| PZ1        | 0.99            | 0.61                      | 182.24                        | 0.97                              | 181.27                           | 0.86                              | 181.38                           | 0.93                              | 181.32                           | 0.85                              | 181.39                           | 0.74                              | 181.50                           |
| PZ2        | 1.67            | 1.15                      | 181.53                        | 1.13                              | 180.40                           | 0.98                              | 180.55                           | 0.84                              | 180.70                           | 0.70                              | 180.83                           | 0.58                              | 180.96                           |
| PZ3s       | 1.34            | 0.57                      | 180.83                        | 1.16                              | 179.67                           | 0.29                              | 180.54                           | 0.54                              | 180.29                           | 0.62                              | 180.21                           | 0.68                              | 180.15                           |
| PZ3d       | 1.78            | 1.04                      | 180.75                        | 0.62                              | 180.13                           | 0.16                              | 180.59                           | 0.50                              | 180.25                           | 0.59                              | 180.16                           | 0.65                              | 180.10                           |
| PZ4s       | 1.11            | 0.80                      | 181.43                        | 1.10                              | 180.33                           | 0.85                              | 180.58                           | 0.44                              | 180.99                           | 0.19                              | 181.24                           | 0.57                              | 180.86                           |
| PZ4d       | 1.63            | 1.19                      | 181.46                        | 1.26                              | 180.20                           | 1.47                              | 179.99                           | 1.10                              | 180.36                           | 0.78                              | 180.68                           | 0.57                              | 180.89                           |
| PZ5s       | 1.22            | 0.69                      | 184.39                        | 0.89                              | 183.50                           | 0.66                              | 183.73                           | 0.65                              | 183.74                           | 0.51                              | 183.88                           | 0.42                              | 183.97                           |
| PZ5d       | 1.73            | 1.09                      | 184.38                        | 1.36                              | 183.02                           | 1.43                              | 182.95                           | 0.84                              | 183.54                           | 0.58                              | 183.81                           | 0.39                              | 184.00                           |
| PZ6        | 1.19            | 0.72                      | 175.35                        | 1.18                              | 174.17                           | 0.95                              | 174.40                           | 0.81                              | 174.55                           | 0.68                              | 174.67                           | 0.61                              | 174.75                           |
| PZ7s       | 1.24            | 0.67                      | 177.30                        | 0.92                              | 176.38                           | 0.24                              | 177.06                           | 0.49                              | 176.81                           | 0.54                              | 176.76                           | 0.63                              | 176.68                           |
| PZ7d       | 1.71            | 1.11                      | 177.41                        | 1.34                              | 176.07                           | 1.26                              | 176.15                           | 1.13                              | 176.28                           | 1.01                              | 176.40                           | 0.89                              | 176.52                           |
| PZ8s       | 1.35            | 0.56                      | 187.59                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.97                              | 186.62                           |
| PZ8d       | 1.88            | 0.94                      | 187.57                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 1.57                              | 186.01                           |
| PZ9s       | 0.96            | 0.95                      | 188.95                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ9d       | 1.57            | 1.25                      | 188.86                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ10s      | 1.24            | 0.68                      | 179.61                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ10d      | 1.75            | 0.87                      | 179.56                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ11s      | 1.30            | 0.60                      | 183.34                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ11d      | 1.89            | 0.95                      | 183.30                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ12s      | 1.30            | 0.61                      | 183.77                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ12d      | 1.88            | 0.96                      | 183.80                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |

mbgl - metres below ground level

masl - metres above sea level

"-" denotes not part of round or unavailable data

**Table E-2  
Piezometer Groundwater Elevations**

| Piezometer | Depth<br>(mbgl) | Casing<br>Stick up<br>(m) | Ground<br>Elevation<br>(masl) | 29-Jul-16                         |                                  | 05-Aug-16                         |                                  | 31-Aug-16                         |                                  | 06-Oct-16                         |                                  | 28-Oct-16                         |                                  |
|------------|-----------------|---------------------------|-------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|
|            |                 |                           |                               | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) |
| PZ1        | 0.99            | 0.61                      | 182.24                        | 0.69                              | 181.55                           | -                                 | -                                | 0.64                              | 181.60                           | 0.62                              | 181.62                           | 0.60                              | 181.64                           |
| PZ2        | 1.67            | 1.15                      | 181.53                        | 0.62                              | 180.91                           | -                                 | -                                | 0.79                              | 180.74                           | 1.05                              | 180.48                           | 1.15                              | 180.38                           |
| PZ3s       | 1.34            | 0.57                      | 180.83                        | 0.64                              | 180.19                           | -                                 | -                                | 0.69                              | 180.14                           | 0.65                              | 180.18                           | 0.58                              | 180.25                           |
| PZ3d       | 1.78            | 1.04                      | 180.75                        | 0.62                              | 180.13                           | -                                 | -                                | 0.67                              | 180.08                           | 0.64                              | 180.11                           | 0.58                              | 180.17                           |
| PZ4s       | 1.11            | 0.80                      | 181.43                        | 0.50                              | 180.93                           | -                                 | -                                | 0.47                              | 180.96                           | 0.93                              | 180.50                           | 0.80                              | 180.63                           |
| PZ4d       | 1.63            | 1.19                      | 181.46                        | 0.59                              | 180.87                           | -                                 | -                                | 0.51                              | 180.95                           | 0.67                              | 180.79                           | 0.73                              | 180.73                           |
| PZ5s       | 1.22            | 0.69                      | 184.39                        | 0.50                              | 183.89                           | -                                 | -                                | 0.46                              | 183.93                           | 0.46                              | 183.94                           | 0.41                              | 183.98                           |
| PZ5d       | 1.73            | 1.09                      | 184.38                        | 0.44                              | 183.95                           | -                                 | -                                | 0.42                              | 183.96                           | 0.40                              | 183.98                           | 0.33                              | 184.05                           |
| PZ6        | 1.19            | 0.72                      | 175.35                        | 0.78                              | 174.57                           | -                                 | -                                | 1.01                              | 174.34                           | 1.14                              | 174.21                           | 1.12                              | 174.23                           |
| PZ7s       | 1.24            | 0.67                      | 177.30                        | 0.51                              | 176.79                           | -                                 | -                                | 0.64                              | 176.66                           | 0.61                              | 176.70                           | 0.55                              | 176.75                           |
| PZ7d       | 1.71            | 1.11                      | 177.41                        | 0.86                              | 176.55                           | -                                 | -                                | 0.80                              | 176.61                           | 0.80                              | 176.61                           | 0.80                              | 176.61                           |
| PZ8s       | 1.35            | 0.56                      | 187.59                        | 0.69                              | 186.90                           | -                                 | -                                | 0.50                              | 187.09                           | 0.45                              | 187.14                           | 0.38                              | 187.21                           |
| PZ8d       | 1.88            | 0.94                      | 187.57                        | 1.27                              | 186.30                           | -                                 | -                                | 0.95                              | 186.62                           | 0.76                              | 186.81                           | 0.64                              | 186.93                           |
| PZ9s       | 0.96            | 0.95                      | 188.95                        | -                                 | -                                | dry                               | dry                              | dry                               | dry                              | -                                 | -                                | dry                               | dry                              |
| PZ9d       | 1.57            | 1.25                      | 188.86                        | -                                 | -                                | 1.51                              | 187.35                           | 1.50                              | 187.36                           | -                                 | -                                | dry                               | dry                              |
| PZ10s      | 1.24            | 0.68                      | 179.61                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ10d      | 1.75            | 0.87                      | 179.56                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ11s      | 1.30            | 0.60                      | 183.34                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ11d      | 1.89            | 0.95                      | 183.30                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ12s      | 1.30            | 0.61                      | 183.77                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ12d      | 1.88            | 0.96                      | 183.80                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |

mbgl - metres below ground level

masl - metres above sea level

"-" denotes not part of round or unavailable data

**Table E-2**  
**Piezometer Groundwater Elevations**

| Piezometer | Depth<br>(mbgl) | Casing<br>Stick up<br>(m) | Ground<br>Elevation<br>(masl) | 23-Nov-16                         |                                  | 14-Dec-16                         |                                  | 20-Jan-17                         |                                  | 27-Feb-17                         |                                  | 21-Mar-17                         |                                  |
|------------|-----------------|---------------------------|-------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|
|            |                 |                           |                               | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) |
| PZ1        | 0.99            | 0.61                      | 182.24                        | 0.59                              | 181.65                           | 0.58                              | 181.66                           | 0.55                              | 181.69                           | 0.54                              | 181.70                           | 0.51                              | 181.73                           |
| PZ2        | 1.67            | 1.15                      | 181.53                        | 1.15                              | 180.38                           | 1.18                              | 180.35                           | 1.12                              | 180.41                           | 1.01                              | 180.52                           | 0.92                              | 180.61                           |
| PZ3s       | 1.34            | 0.57                      | 180.83                        | 0.60                              | 180.23                           | 0.50                              | 180.33                           | 0.49                              | 180.34                           | 0.45                              | 180.38                           | 0.56                              | 180.27                           |
| PZ3d       | 1.78            | 1.04                      | 180.75                        | 0.60                              | 180.15                           | 0.50                              | 180.25                           | 0.48                              | 180.27                           | 0.44                              | 180.31                           | 0.56                              | 180.20                           |
| PZ4s       | 1.11            | 0.80                      | 181.43                        | 0.55                              | 180.88                           | 0.48                              | 180.95                           | 0.22                              | 181.21                           | 0.19                              | 181.24                           | 0.18                              | 181.25                           |
| PZ4d       | 1.63            | 1.19                      | 181.46                        | 0.67                              | 180.79                           | 0.67                              | 180.79                           | 0.53                              | 180.93                           | 0.42                              | 181.04                           | 0.38                              | 181.08                           |
| PZ5s       | 1.22            | 0.69                      | 184.39                        | 0.37                              | 184.02                           | 0.39                              | 184.00                           | 0.32                              | 184.07                           | 0.23                              | 184.16                           | 0.21                              | 184.18                           |
| PZ5d       | 1.73            | 1.09                      | 184.38                        | 0.25                              | 184.13                           | 0.38                              | 184.00                           | 0.19                              | 184.19                           | 0.13                              | 184.25                           | 0.11                              | 184.27                           |
| PZ6        | 1.19            | 0.72                      | 175.35                        | 1.02                              | 174.33                           | -                                 | -                                | 0.78                              | 174.57                           | 0.64                              | 174.71                           | 0.61                              | 174.74                           |
| PZ7s       | 1.24            | 0.67                      | 177.30                        | 0.58                              | 176.72                           | 0.58                              | 176.72                           | 0.40                              | 176.90                           | 0.40                              | 176.90                           | 0.51                              | 176.79                           |
| PZ7d       | 1.71            | 1.11                      | 177.41                        | 0.80                              | 176.61                           | 0.78                              | 176.63                           | 0.73                              | 176.68                           | 0.70                              | 176.71                           | 0.67                              | 176.74                           |
| PZ8s       | 1.35            | 0.56                      | 187.59                        | 0.31                              | 187.28                           | 0.34                              | 187.25                           | 0.29                              | 187.30                           | 0.16                              | 187.43                           | 0.12                              | 187.47                           |
| PZ8d       | 1.88            | 0.94                      | 187.57                        | 0.54                              | 187.03                           | 0.53                              | 187.04                           | 0.42                              | 187.15                           | 0.32                              | 187.25                           | 0.25                              | 187.32                           |
| PZ9s       | 0.96            | 0.95                      | 188.95                        | dry                               | dry                              | dry                               | dry                              | 0.37                              | 188.58                           | 0.13                              | 188.82                           | 0.23                              | 188.72                           |
| PZ9d       | 1.57            | 1.25                      | 188.86                        | dry                               | dry                              | 1.12                              | 187.74                           | -0.21                             | 189.07                           | 0.12                              | 188.74                           | 0.18                              | 188.68                           |
| PZ10s      | 1.24            | 0.68                      | 179.61                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ10d      | 1.75            | 0.87                      | 179.56                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ11s      | 1.30            | 0.60                      | 183.34                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ11d      | 1.89            | 0.95                      | 183.30                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ12s      | 1.30            | 0.61                      | 183.77                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |
| PZ12d      | 1.88            | 0.96                      | 183.80                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                |

mbgl - metres below ground level

masl - metres above sea level

"-" denotes not part of round or unavailable data

**Table E-2  
Piezometer Groundwater Elevations**

| Piezometer | Depth (mbgl) | Casing Stick up (m) | Ground Elevation (masl) | 17-Apr-17                |                            | 21-Apr-17                |                            | 16-May-17                |                            | 19-May-17                |                            | 24-May-17                |                            |
|------------|--------------|---------------------|-------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|
|            |              |                     |                         | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) | Water Level Depth (mbgl) | Estimated Elevation (masl) |
| PZ1        | 0.99         | 0.61                | 182.24                  | -                        | -                          | 0.47                     | 181.77                     | 0.44                     | 181.80                     | -                        | -                          | -                        | -                          |
| PZ2        | 1.67         | 1.15                | 181.53                  | -                        | -                          | 0.80                     | 180.73                     | 0.70                     | 180.83                     | -                        | -                          | -                        | -                          |
| PZ3s       | 1.34         | 0.57                | 180.83                  | -                        | -                          | 0.34                     | 180.49                     | 0.52                     | 180.31                     | -                        | -                          | -                        | -                          |
| PZ3d       | 1.78         | 1.04                | 180.75                  | -                        | -                          | 0.33                     | 180.42                     | 0.53                     | 180.22                     | -                        | -                          | -                        | -                          |
| PZ4s       | 1.11         | 0.80                | 181.43                  | -                        | -                          | 0.12                     | 181.31                     | 0.12                     | 181.31                     | -                        | -                          | 0.13                     | 181.30                     |
| PZ4d       | 1.63         | 1.19                | 181.46                  | -                        | -                          | 0.24                     | 181.22                     | 0.19                     | 181.27                     | -                        | -                          | 0.19                     | 181.27                     |
| PZ5s       | 1.22         | 0.69                | 184.39                  | -                        | -                          | 0.12                     | 184.27                     | 0.10                     | 184.29                     | -                        | -                          | -                        | -                          |
| PZ5d       | 1.73         | 1.09                | 184.38                  | -                        | -                          | -0.01                    | 184.39                     | -0.03                    | 184.41                     | -                        | -                          | -                        | -                          |
| PZ6        | 1.19         | 0.72                | 175.35                  | -                        | -                          | 0.55                     | 174.80                     | 0.45                     | 174.90                     | -                        | -                          | -                        | -                          |
| PZ7s       | 1.24         | 0.67                | 177.30                  | -                        | -                          | 0.21                     | 177.09                     | 0.47                     | 176.83                     | -                        | -                          | -                        | -                          |
| PZ7d       | 1.71         | 1.11                | 177.41                  | -                        | -                          | 0.64                     | 176.77                     | 0.61                     | 176.80                     | -                        | -                          | -                        | -                          |
| PZ8s       | 1.35         | 0.56                | 187.59                  | -                        | -                          | 0.02                     | 187.57                     | -0.01                    | 187.60                     | -                        | -                          | -                        | -                          |
| PZ8d       | 1.88         | 0.94                | 187.57                  | -                        | -                          | 0.12                     | 187.45                     | 0.09                     | 187.48                     | -                        | -                          | -                        | -                          |
| PZ9s       | 0.96         | 0.95                | 188.95                  | -                        | -                          | 0.12                     | 188.83                     | 0.24                     | 188.71                     | -                        | -                          | -                        | -                          |
| PZ9d       | 1.57         | 1.25                | 188.86                  | -                        | -                          | 0.01                     | 188.85                     | 0.22                     | 188.64                     | -                        | -                          | -                        | -                          |
| PZ10s      | 1.24         | 0.68                | 179.61                  | -0.21                    | 179.82                     | -0.30                    | 179.91                     | -0.18                    | 179.79                     | -0.19                    | 179.80                     | -0.19                    | 179.80                     |
| PZ10d      | 1.75         | 0.87                | 179.56                  | -0.26                    | 179.82                     | -0.33                    | 179.89                     | -0.18                    | 179.74                     | -0.14                    | 179.70                     | -0.18                    | 179.74                     |
| PZ11s      | 1.30         | 0.60                | 183.34                  | dry                      | dry                        | 0.46                     | 182.88                     | 0.54                     | 182.80                     | 0.60                     | 182.74                     | 0.62                     | 182.72                     |
| PZ11d      | 1.89         | 0.95                | 183.30                  | 1.40                     | 181.90                     | 1.13                     | 182.17                     | 0.80                     | 182.50                     | 0.82                     | 182.48                     | 0.78                     | 182.52                     |
| PZ12s      | 1.30         | 0.61                | 183.77                  | dry                      | dry                        | 0.74                     | 183.03                     | 0.75                     | 183.02                     | -                        | -                          | 0.71                     | 183.06                     |
| PZ12d      | 1.88         | 0.96                | 183.80                  | dry                      | dry                        | 0.74                     | 183.06                     | 0.79                     | 183.01                     | -                        | -                          | 0.77                     | 183.03                     |

mbgl - metres below ground level

masl - metres above sea level

"-" denotes not part of round or unavailable data



**Table E-2**  
**Piezometer Groundwater Elevations**

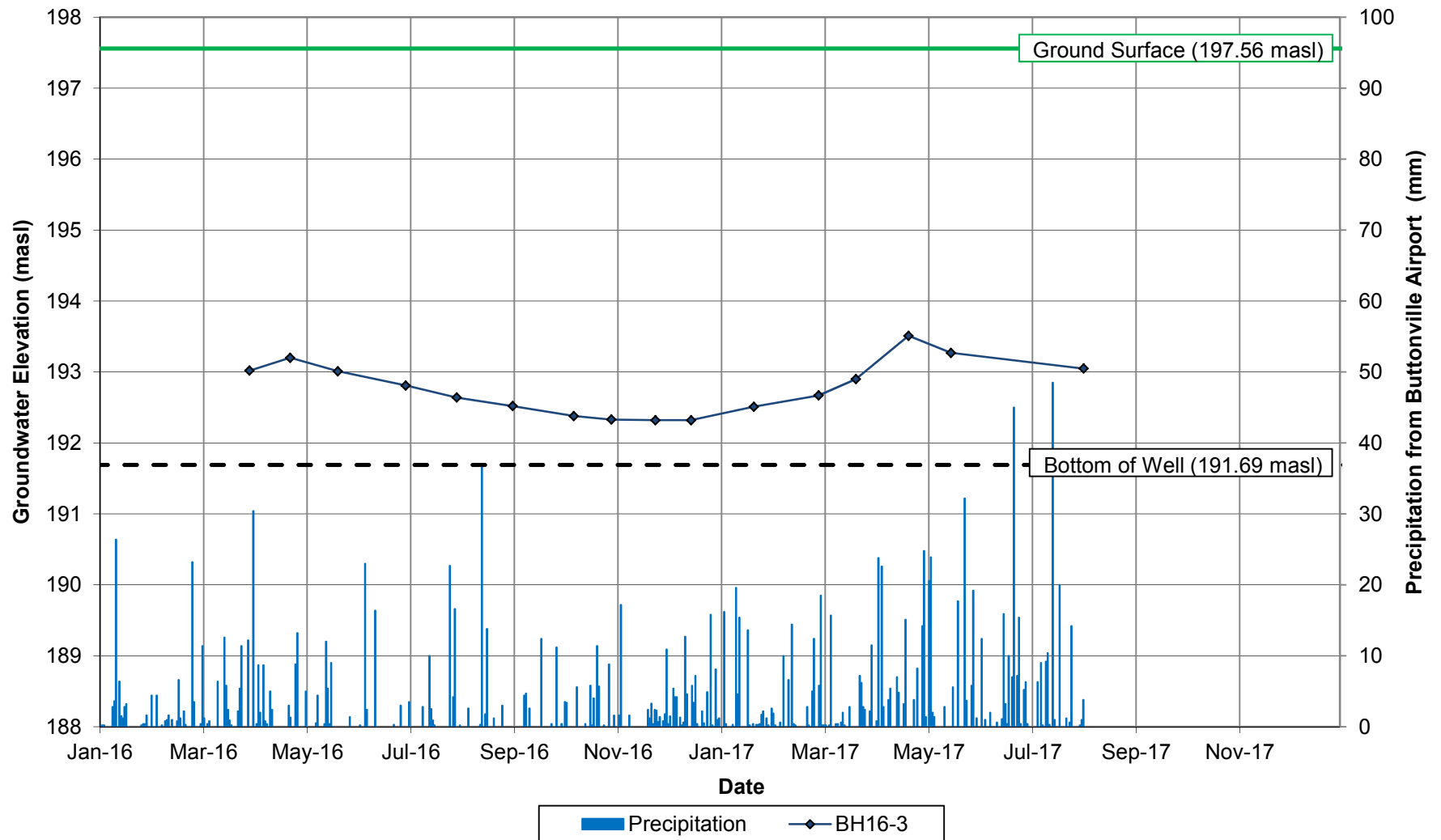
| Piezometer | Depth<br>(mbgl) | Casing<br>Stick up<br>(m) | Ground<br>Elevation<br>(masl) | 29-May-17                         |                                  | 14-Jun-17                         |                                  | 07-Jul-17                         |                                  | 20-Jul-17                         |                                  | 02-Aug-17                         |                                  |
|------------|-----------------|---------------------------|-------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|
|            |                 |                           |                               | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) | Water<br>Level<br>Depth<br>(mbgl) | Estimated<br>Elevation<br>(masl) |
| PZ1        | 0.99            | 0.61                      | 182.24                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.42                              | 181.82                           |
| PZ2        | 1.67            | 1.15                      | 181.53                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.55                              | 180.98                           |
| PZ3s       | 1.34            | 0.57                      | 180.83                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.64                              | 180.19                           |
| PZ3d       | 1.78            | 1.04                      | 180.75                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.62                              | 180.13                           |
| PZ4s       | 1.11            | 0.80                      | 181.43                        | 0.11                              | 181.32                           | 0.13                              | 181.30                           | 0.12                              | 181.31                           | 0.12                              | 181.31                           | 0.12                              | 181.31                           |
| PZ4d       | 1.63            | 1.19                      | 181.46                        | 0.18                              | 181.28                           | 0.19                              | 181.27                           | 0.14                              | 181.32                           | 0.14                              | 181.32                           | 0.13                              | 181.33                           |
| PZ5s       | 1.22            | 0.69                      | 184.39                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.06                              | 184.33                           |
| PZ5d       | 1.73            | 1.09                      | 184.38                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | -0.07                             | 184.45                           |
| PZ6        | 1.19            | 0.72                      | 175.35                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.34                              | 175.01                           |
| PZ7s       | 1.24            | 0.67                      | 177.30                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.56                              | 176.74                           |
| PZ7d       | 1.71            | 1.11                      | 177.41                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.57                              | 176.84                           |
| PZ8s       | 1.35            | 0.56                      | 187.59                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.00                              | 187.59                           |
| PZ8d       | 1.88            | 0.94                      | 187.57                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.02                              | 187.55                           |
| PZ9s       | 0.96            | 0.95                      | 188.95                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.45                              | 188.50                           |
| PZ9d       | 1.57            | 1.25                      | 188.86                        | -                                 | -                                | -                                 | -                                | -                                 | -                                | -                                 | -                                | 0.40                              | 188.46                           |
| PZ10s      | 1.24            | 0.68                      | 179.61                        | -0.22                             | 179.83                           | -0.13                             | 179.74                           | -0.14                             | 179.75                           | -0.19                             | 179.80                           | -0.10                             | 179.71                           |
| PZ10d      | 1.75            | 0.87                      | 179.56                        | -0.29                             | 179.85                           | -0.17                             | 179.73                           | -0.50                             | 180.06                           | -0.39                             | 179.95                           | -0.10                             | 179.66                           |
| PZ11s      | 1.30            | 0.60                      | 183.34                        | 0.59                              | 182.75                           | 0.69                              | 182.65                           | 0.71                              | 182.63                           | 0.69                              | 182.65                           | 0.81                              | 182.53                           |
| PZ11d      | 1.89            | 0.95                      | 183.30                        | 0.77                              | 182.53                           | 0.86                              | 182.44                           | 0.87                              | 182.43                           | 0.90                              | 182.40                           | 0.98                              | 182.32                           |
| PZ12s      | 1.30            | 0.61                      | 183.77                        | 0.73                              | 183.04                           | 0.78                              | 182.99                           | 0.83                              | 182.94                           | 0.86                              | 182.91                           | dry                               | dry                              |
| PZ12d      | 1.88            | 0.96                      | 183.80                        | 0.80                              | 183.00                           | 0.85                              | 182.95                           | 0.85                              | 182.95                           | 0.80                              | 183.00                           | 0.84                              | 182.96                           |

mbgl - metres below ground level

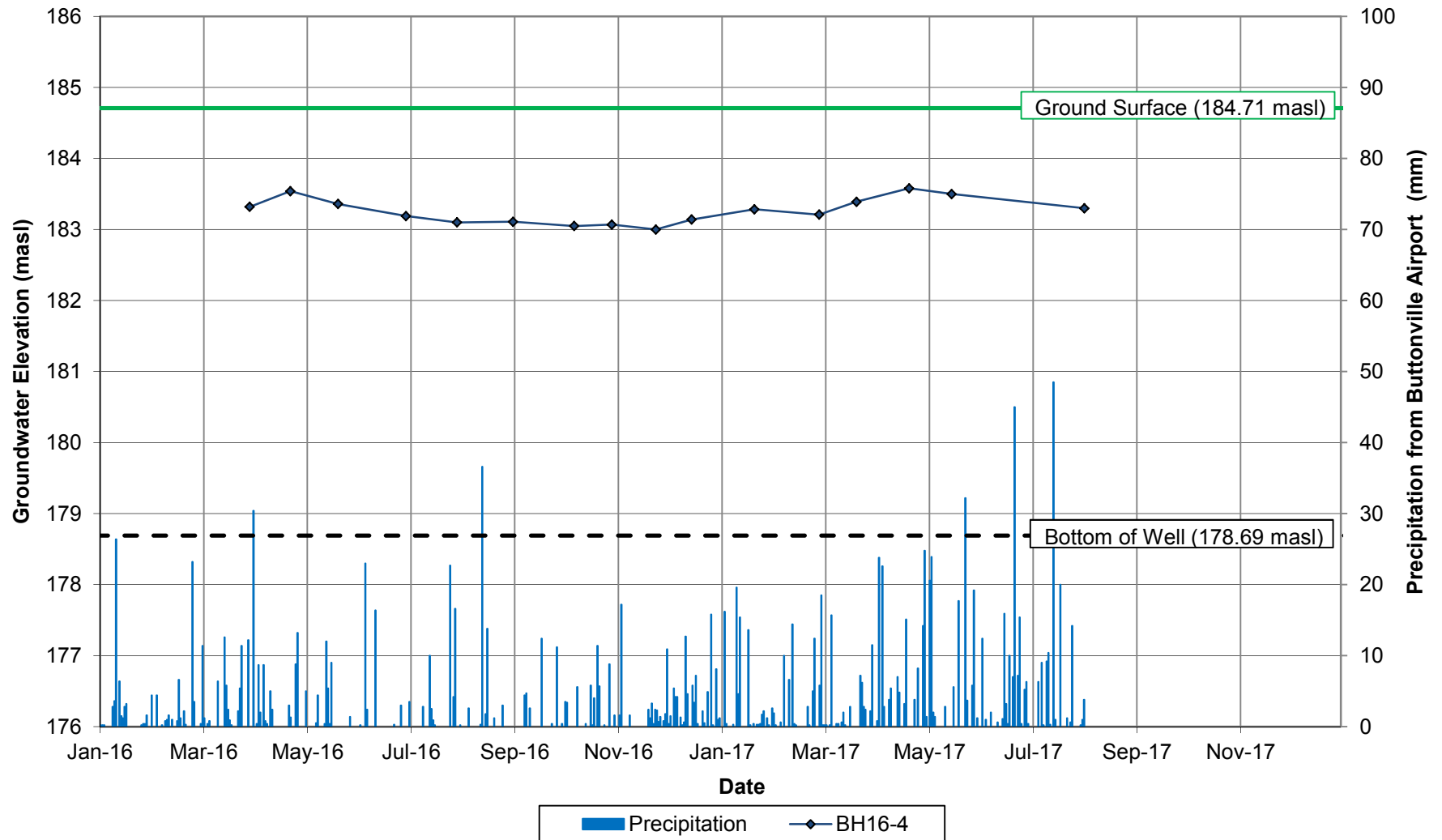
masl - metres above sea level

"-" denotes not part of round or unavailable data

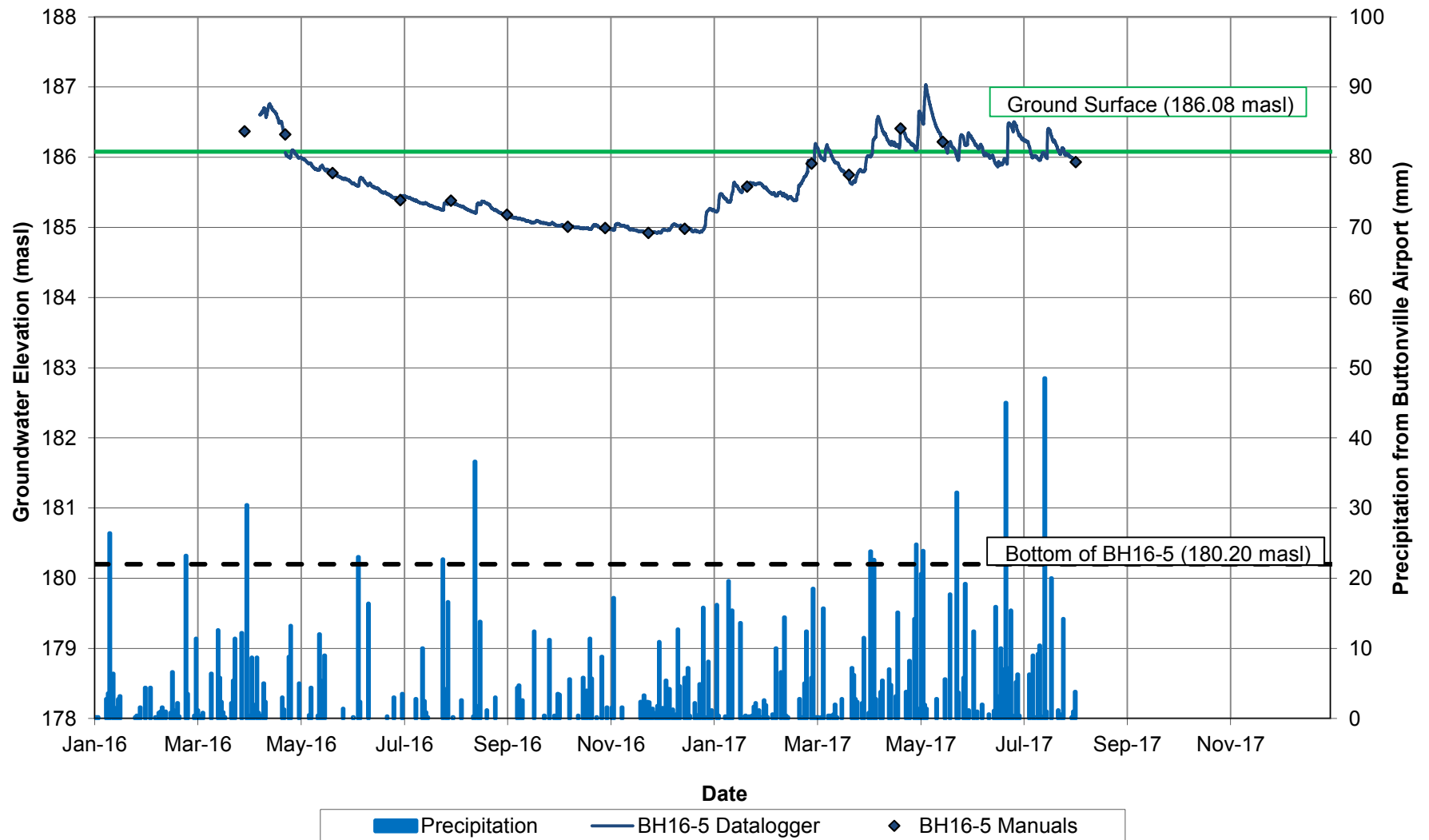
# Groundwater Elevations BH16-3



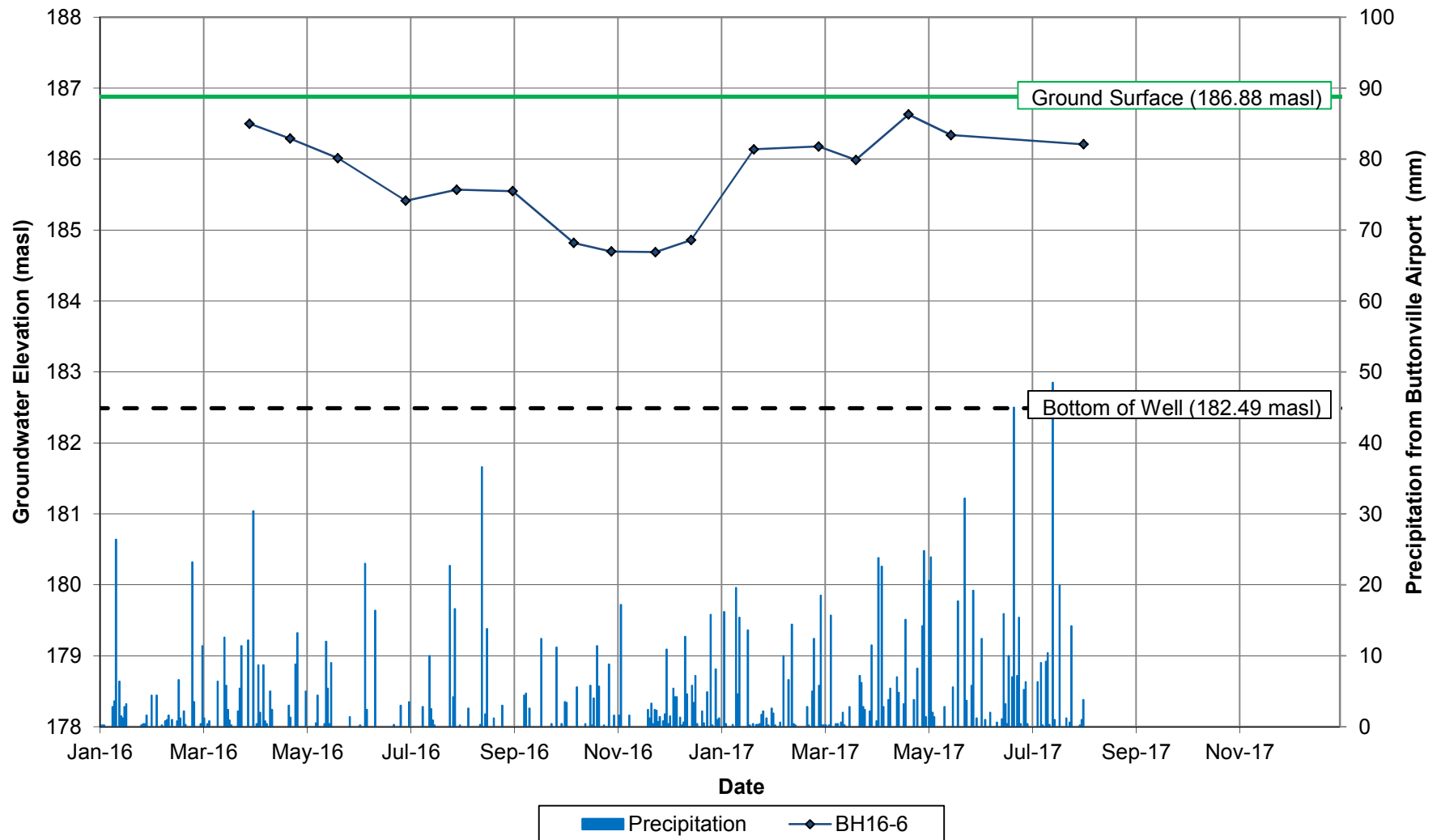
# Groundwater Elevations BH16-4



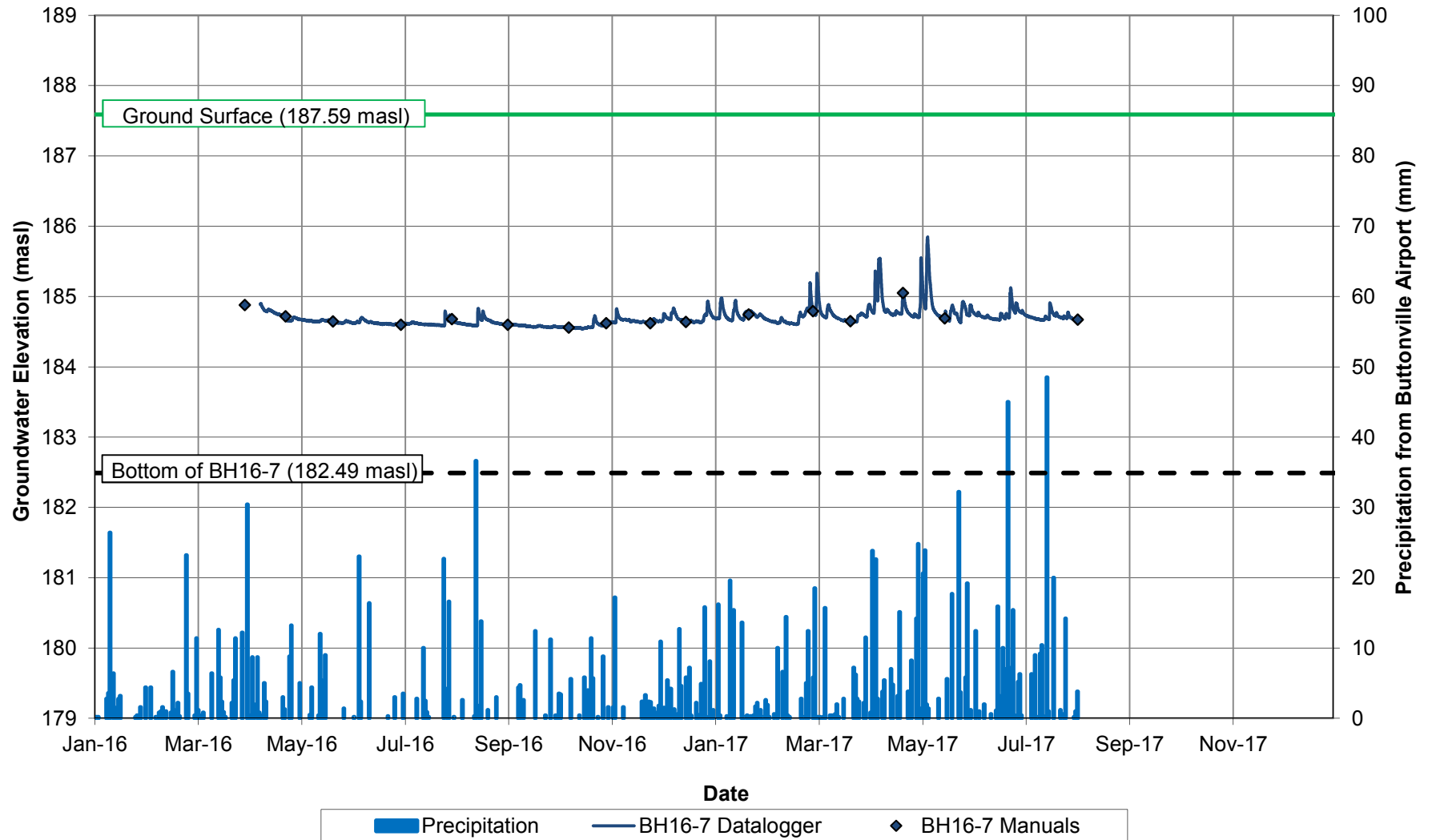
# Groundwater Elevations BH16-5



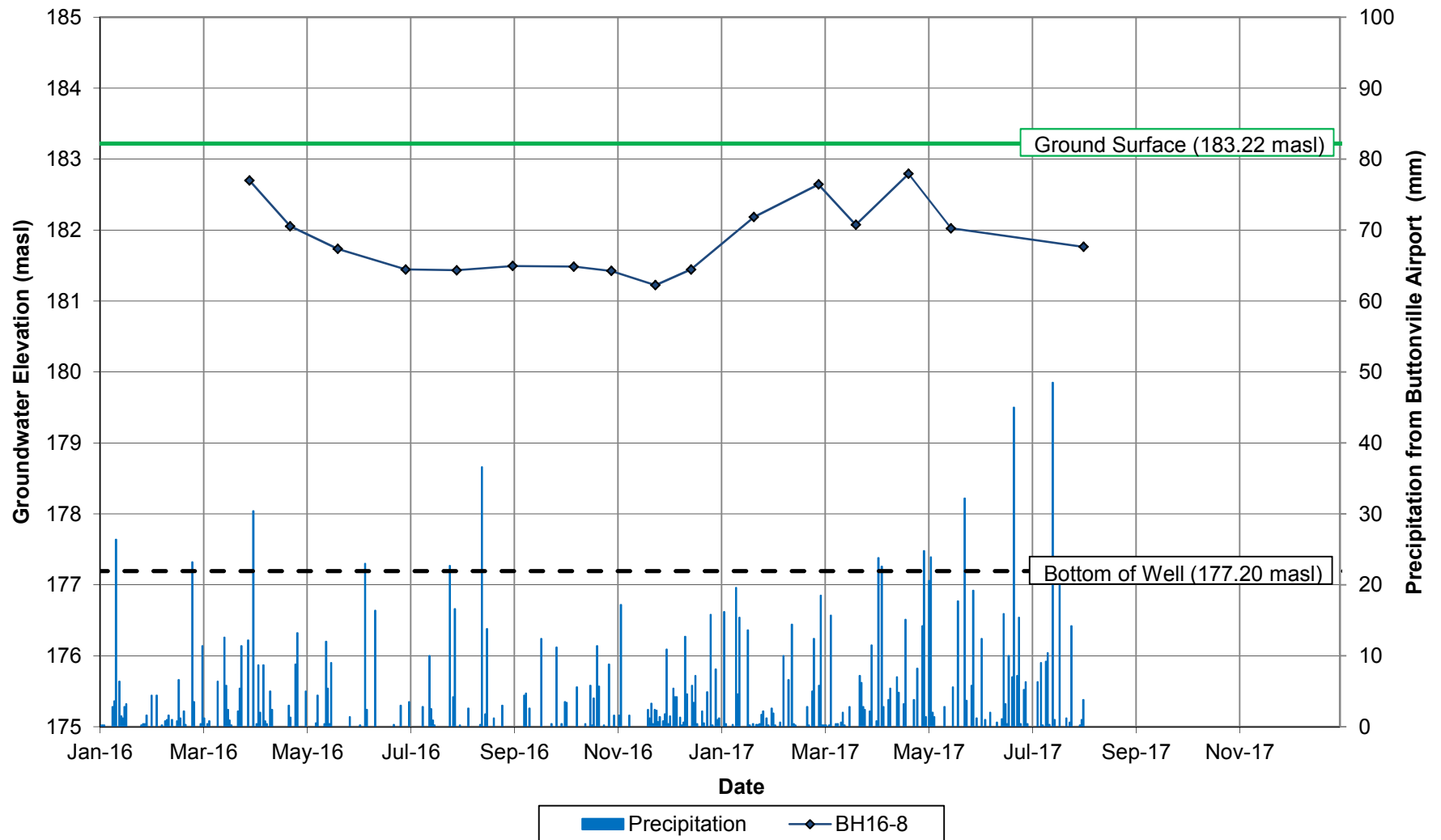
# Groundwater Elevations BH16-6



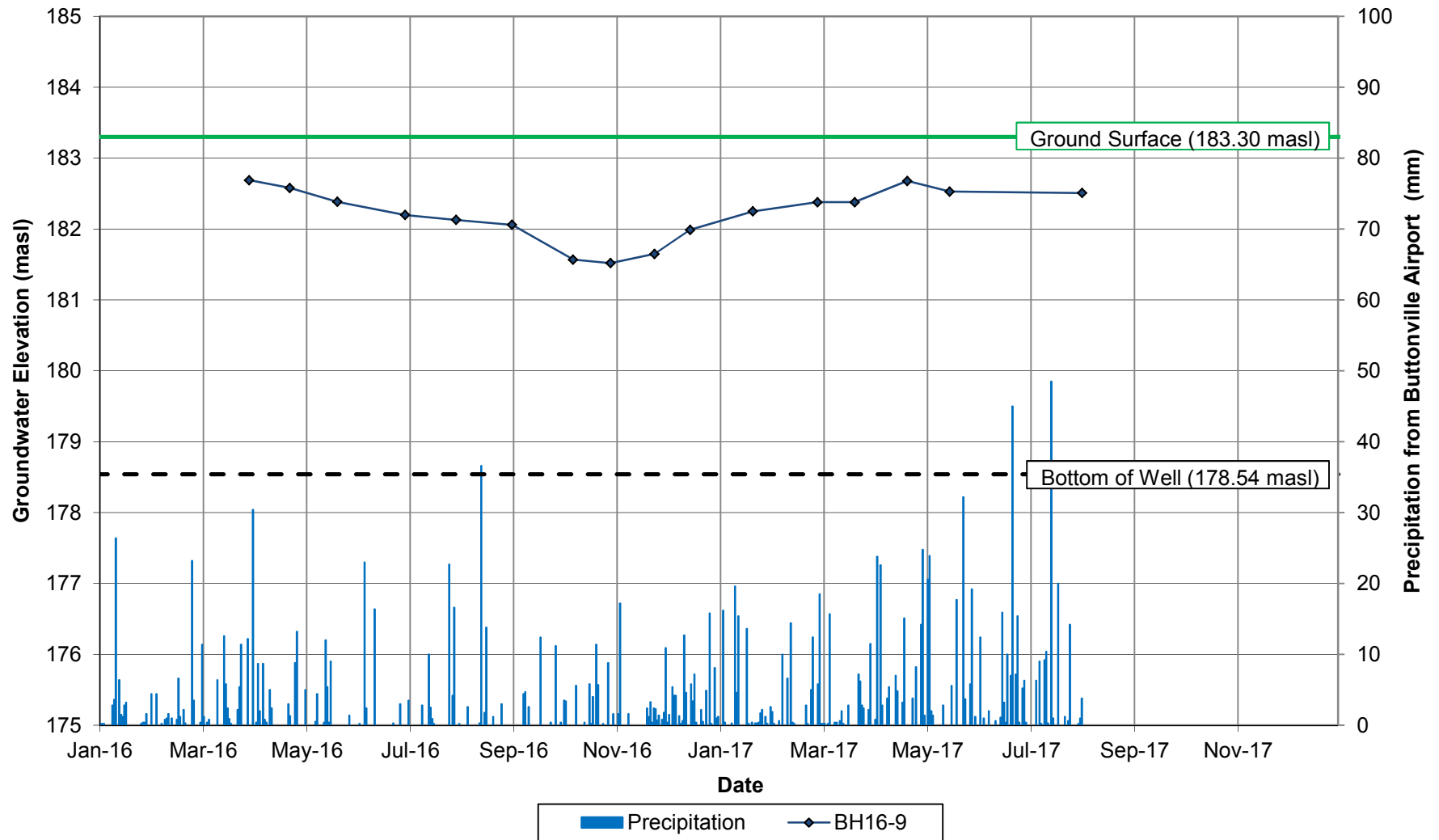
# Groundwater Elevations BH16-7



# Groundwater Elevations BH16-8

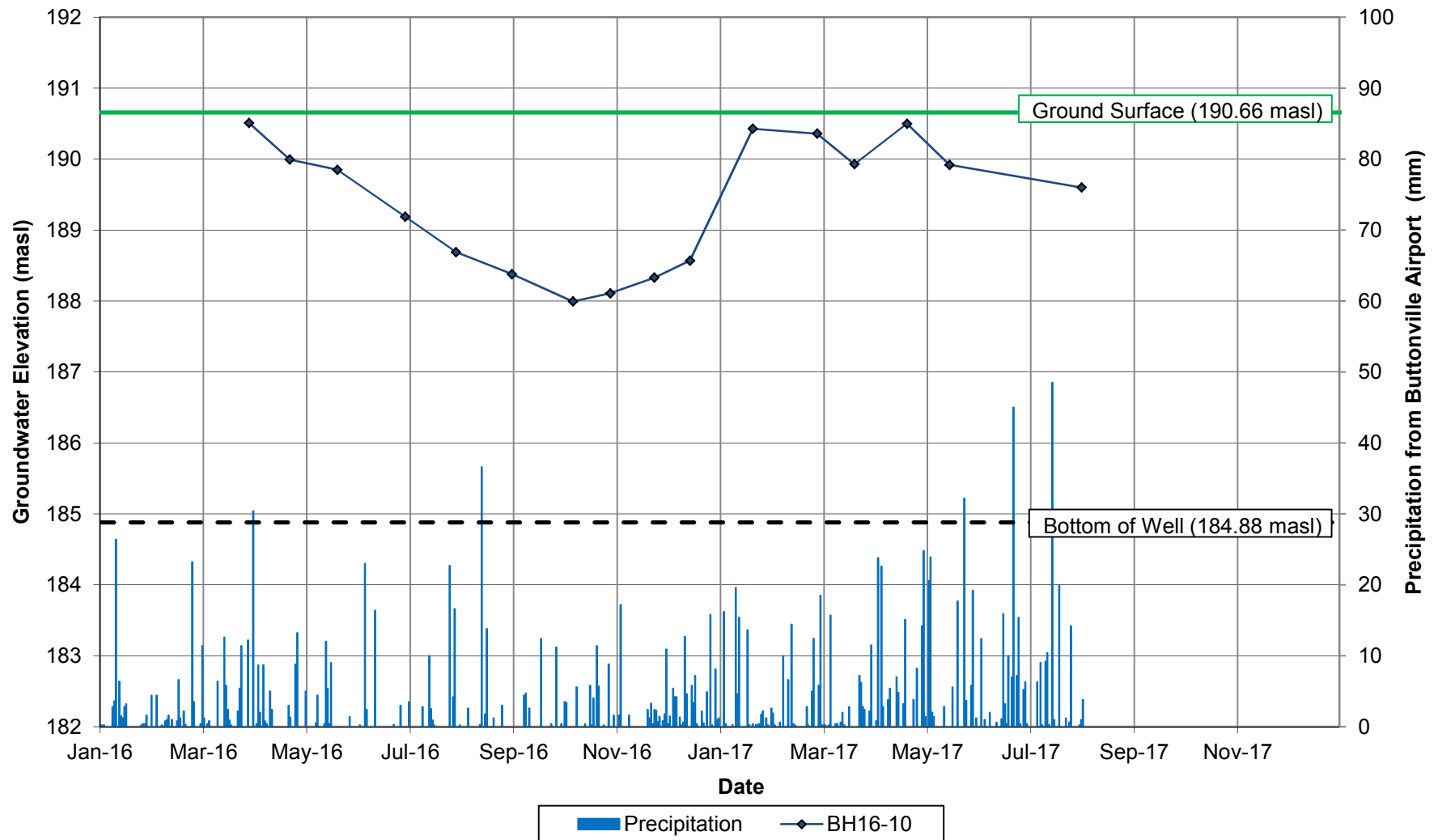


# Groundwater Elevations BH16-9

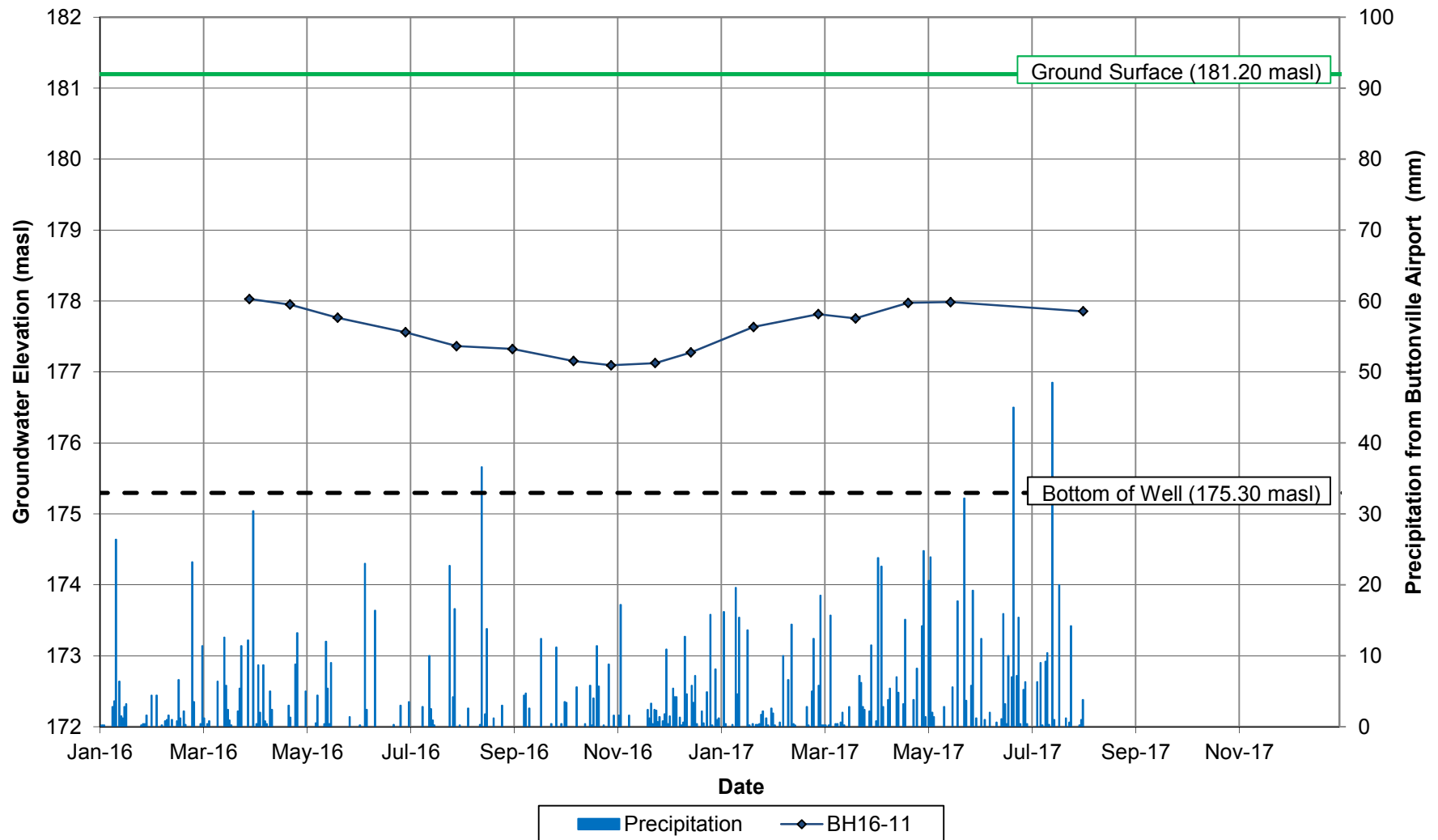




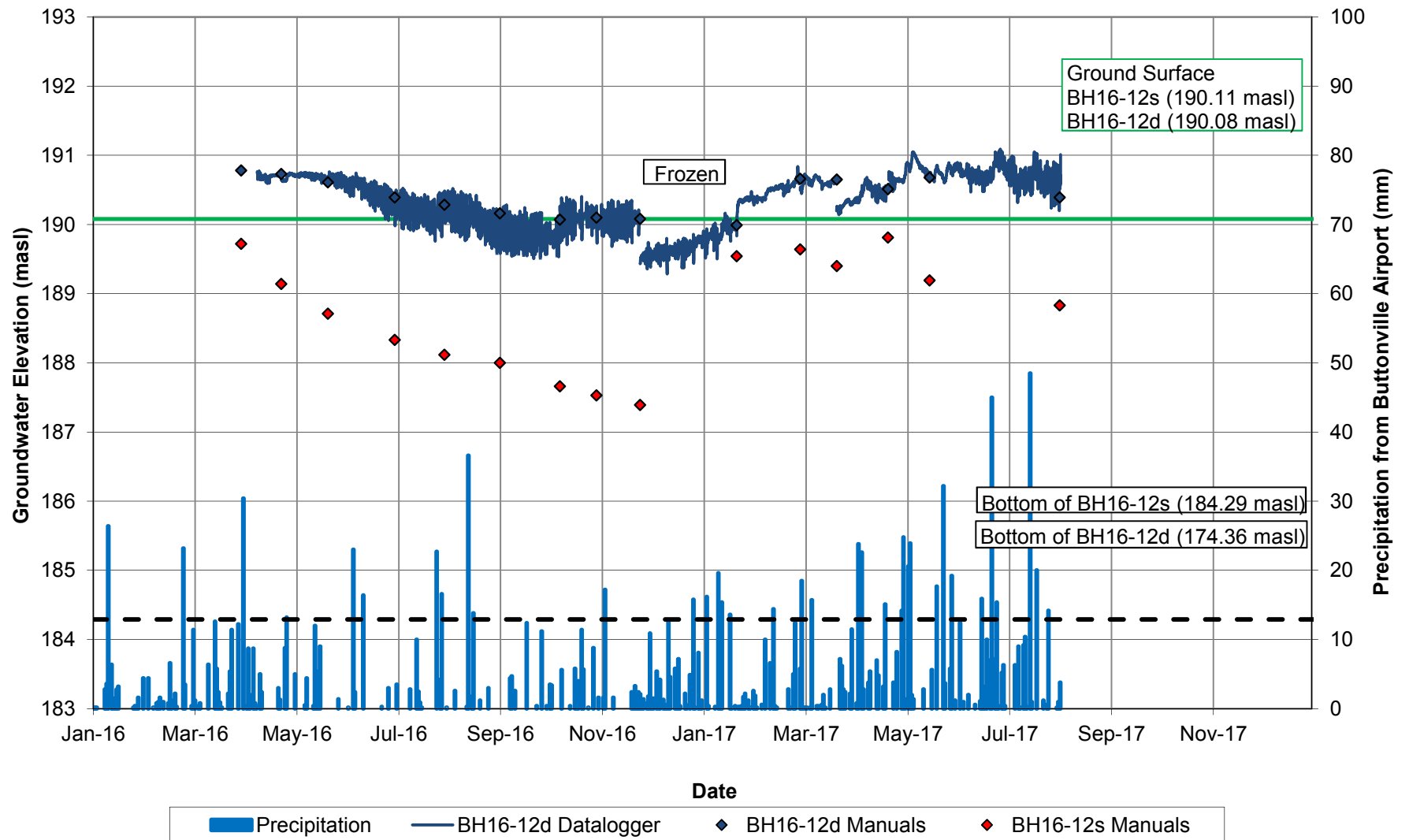
# Groundwater Elevations BH16-10



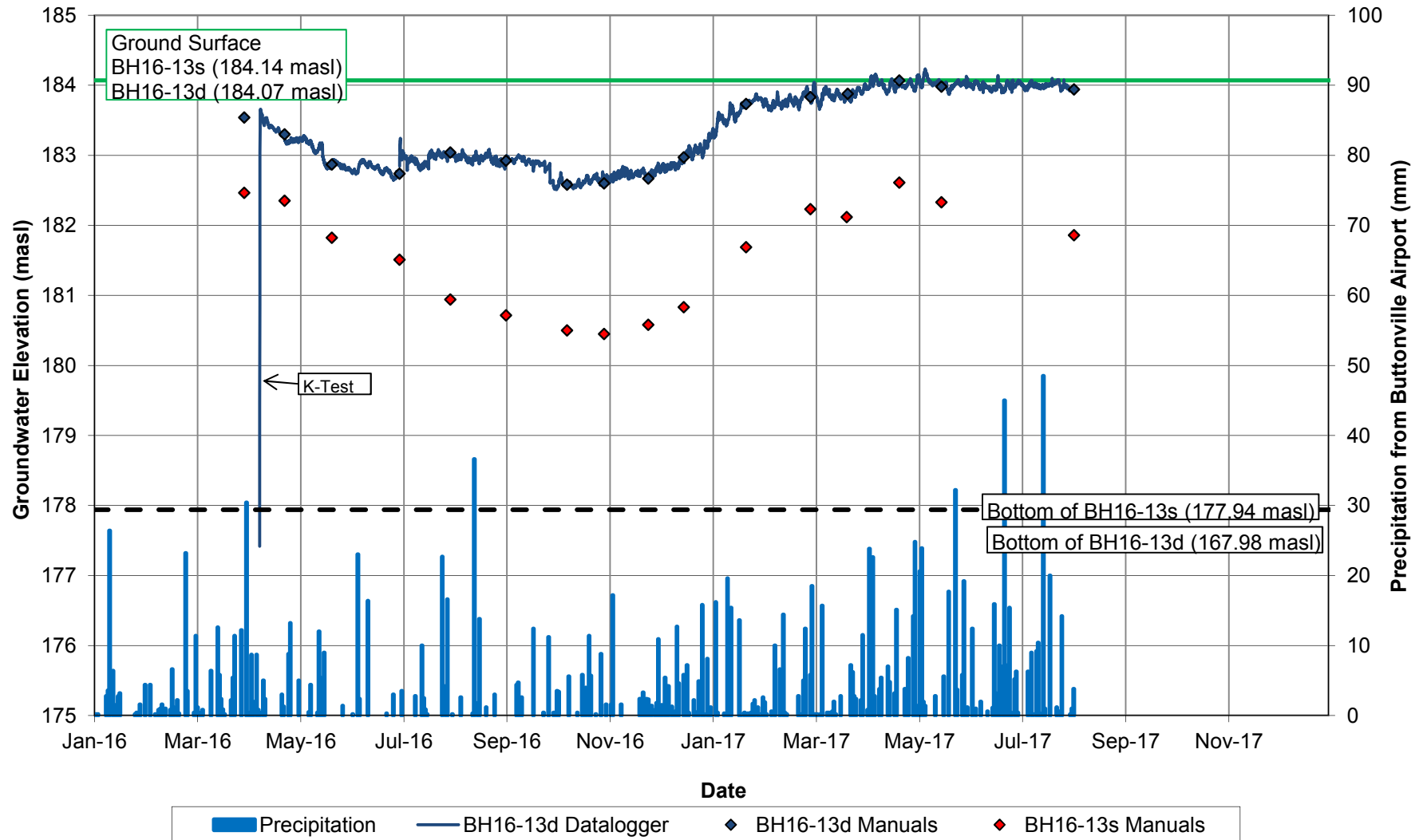
# Groundwater Elevations BH16-11



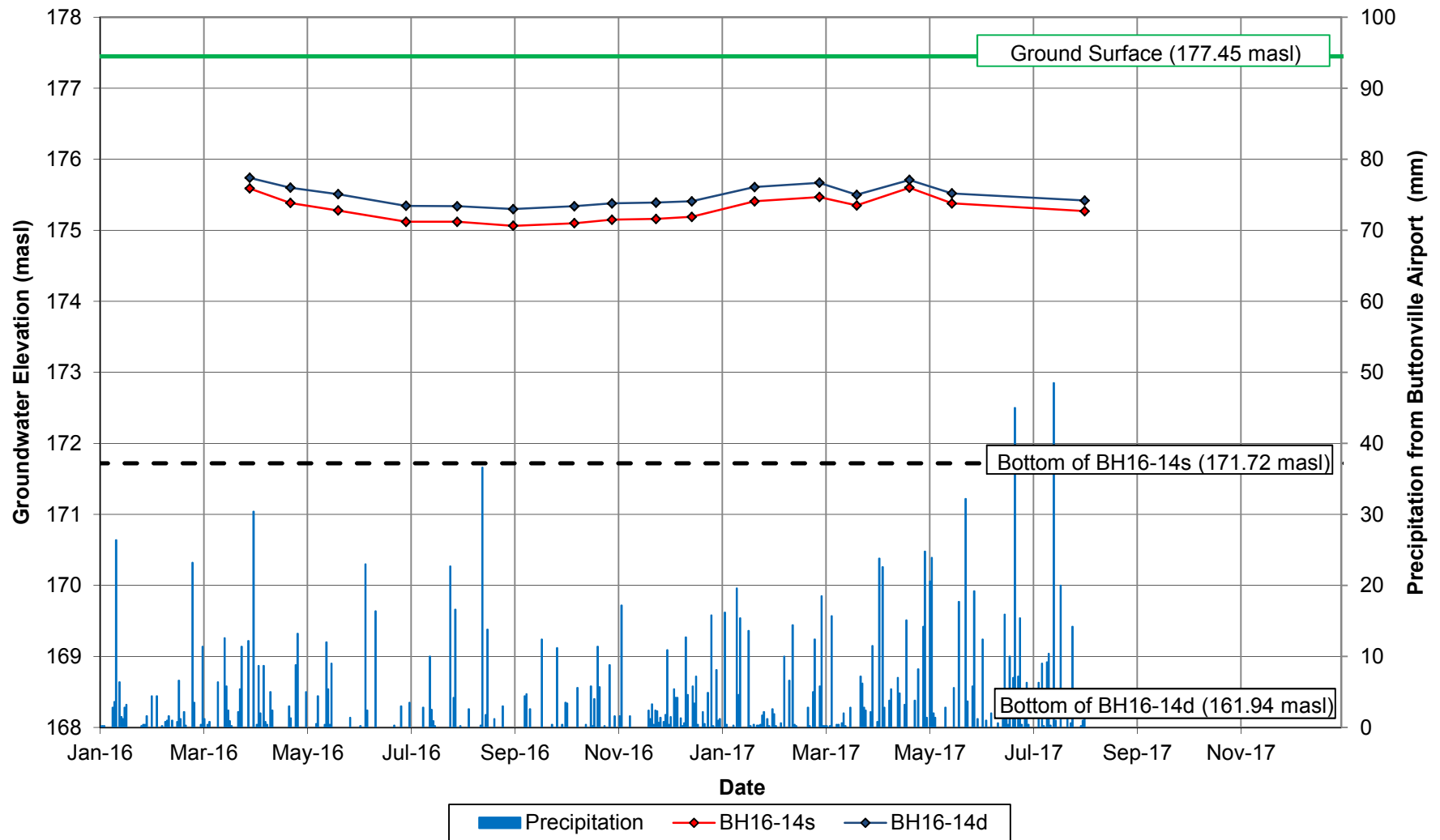
# Groundwater Elevations BH16-12s/d



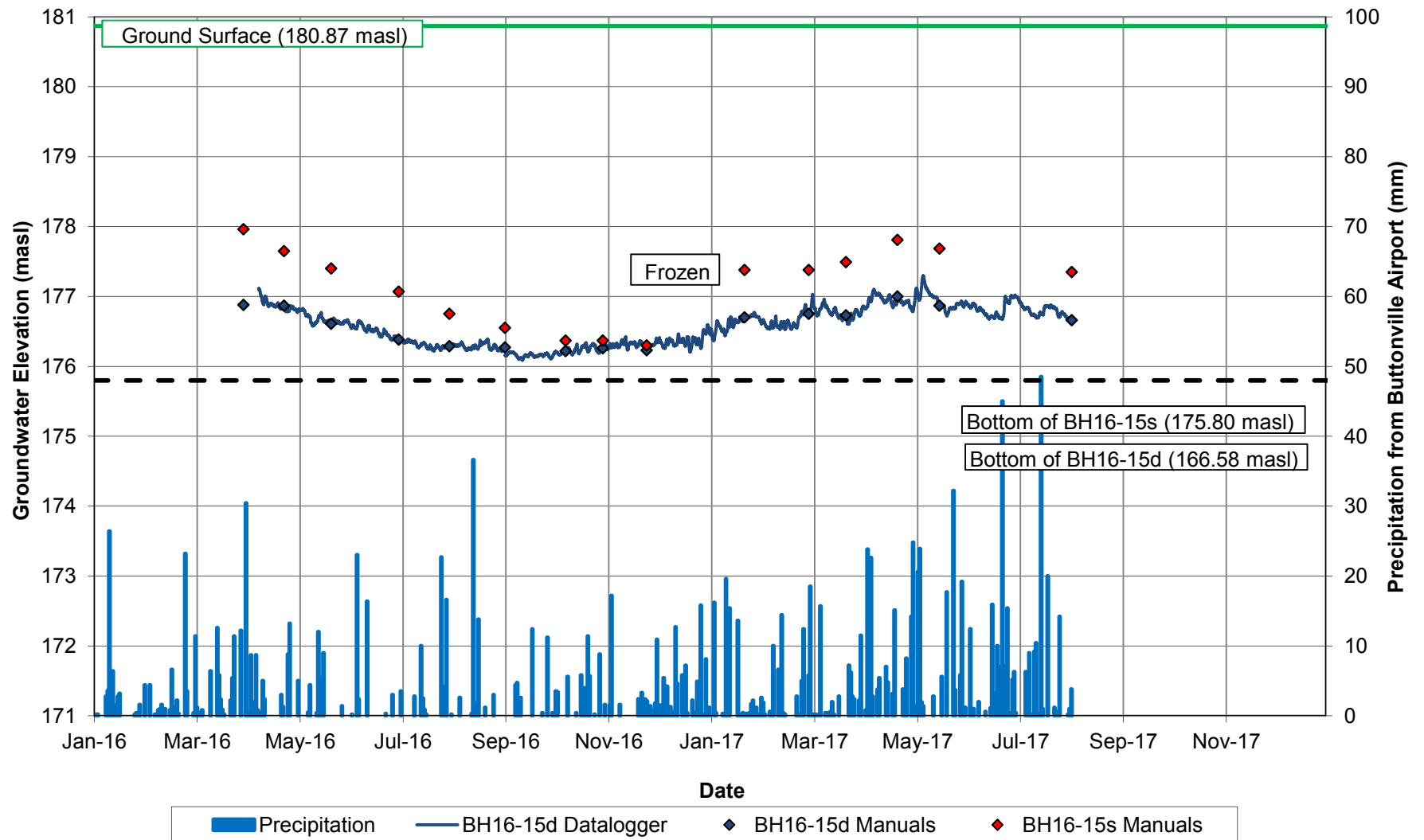
# Groundwater Elevations BH16-13s/d



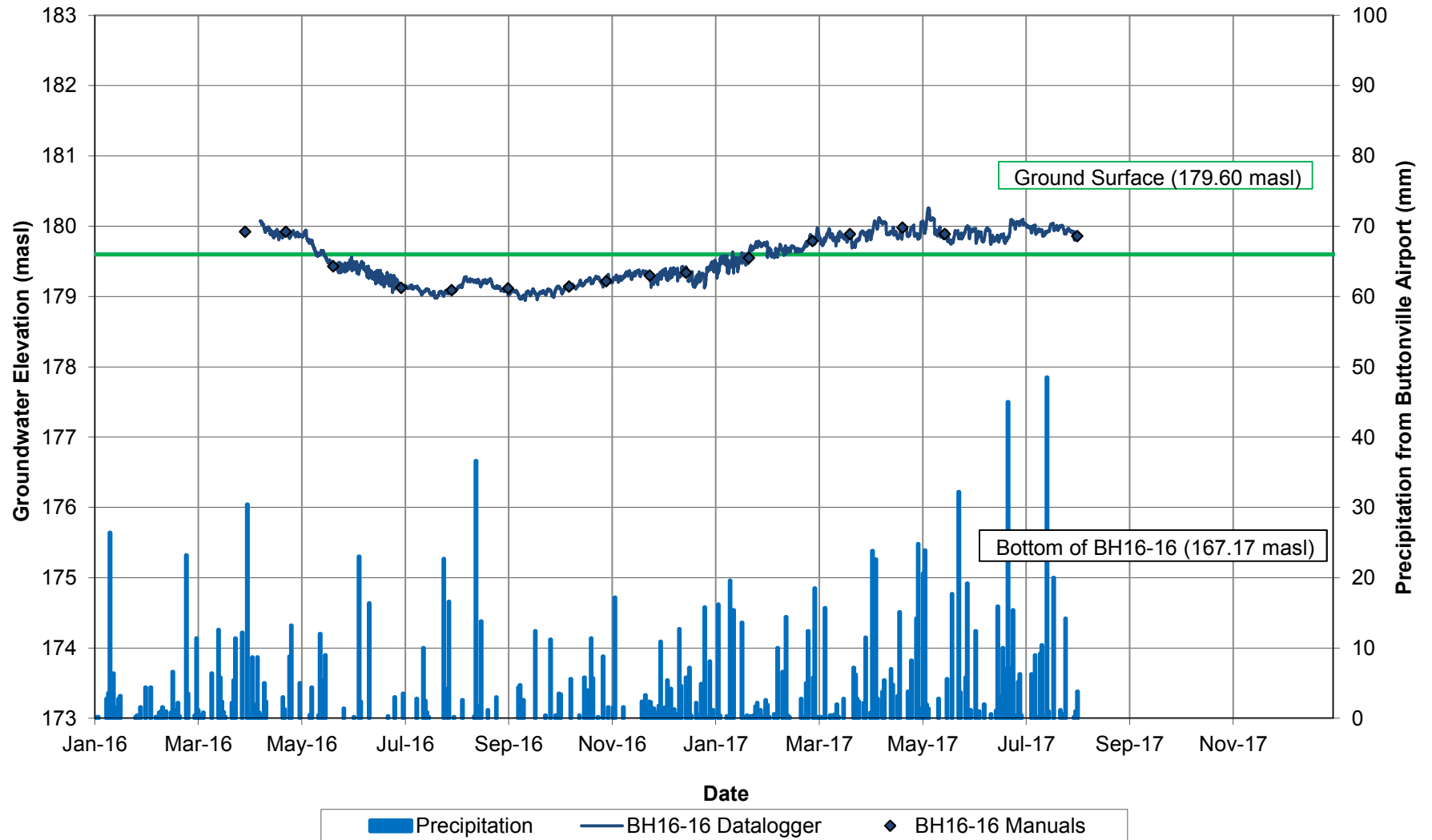
# Groundwater Elevations BH16-14s/d



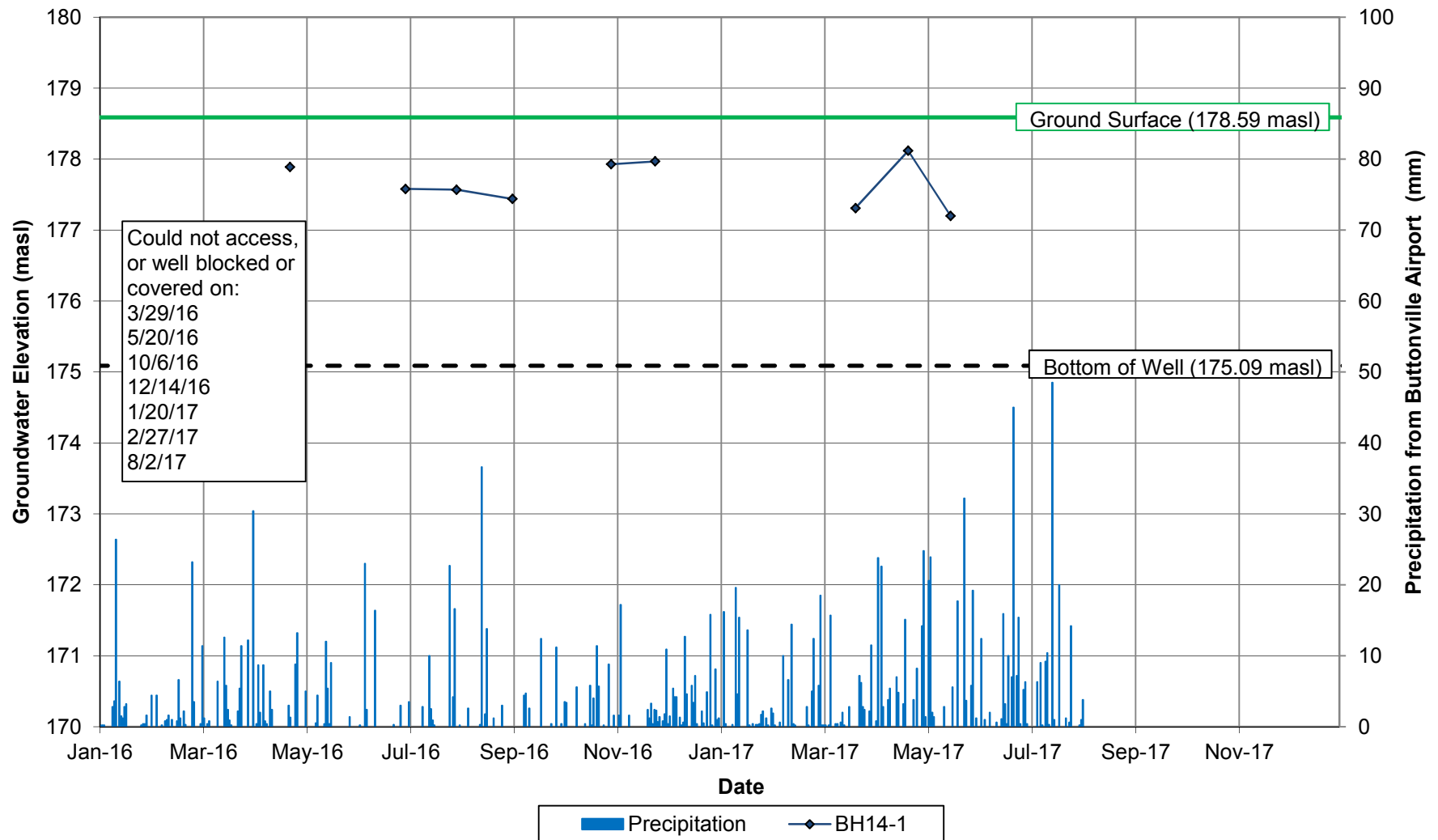
# Groundwater Elevations BH16-15s/d



# Groundwater Elevations BH16-16

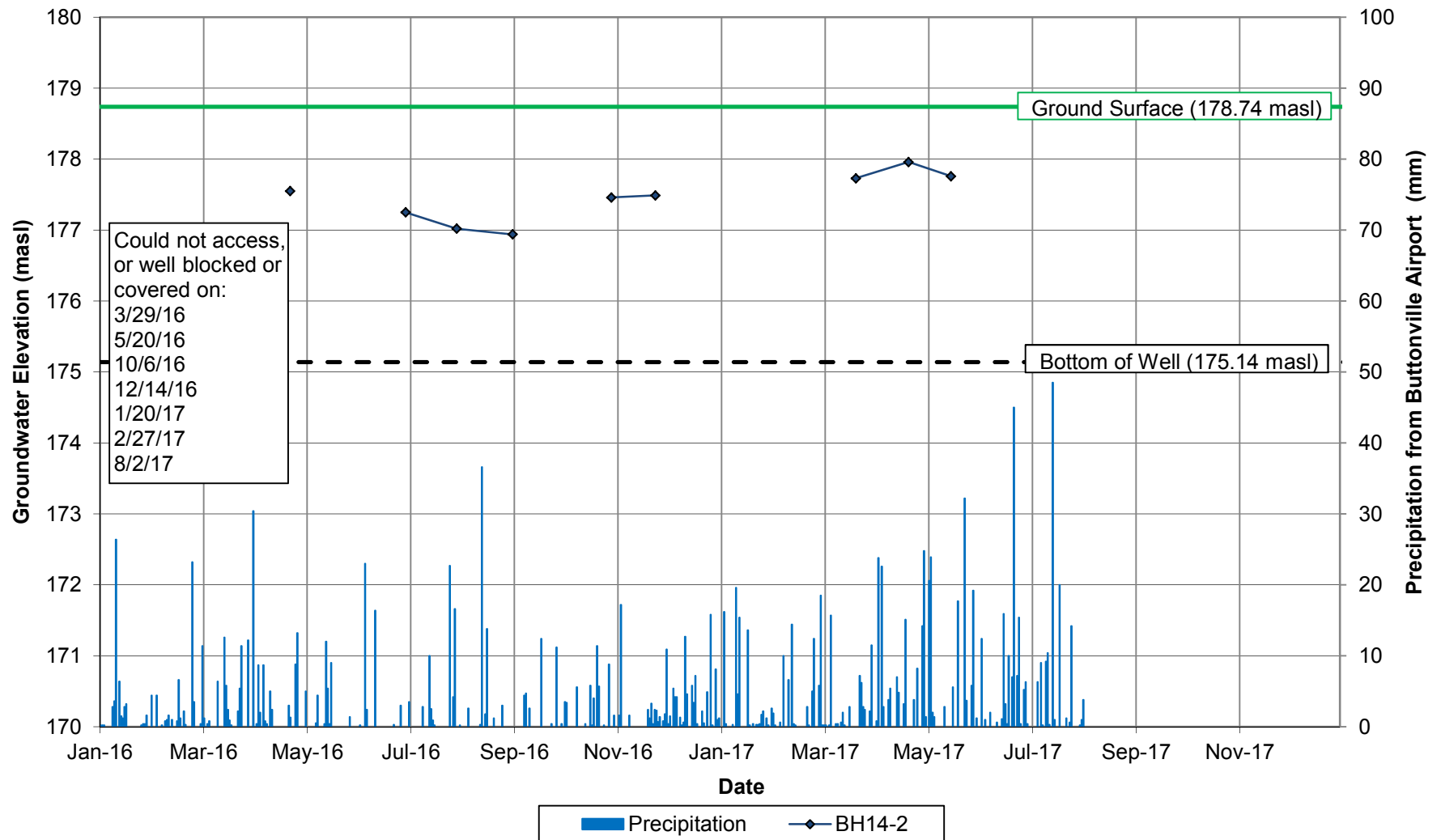


# Groundwater Elevations BH14-1

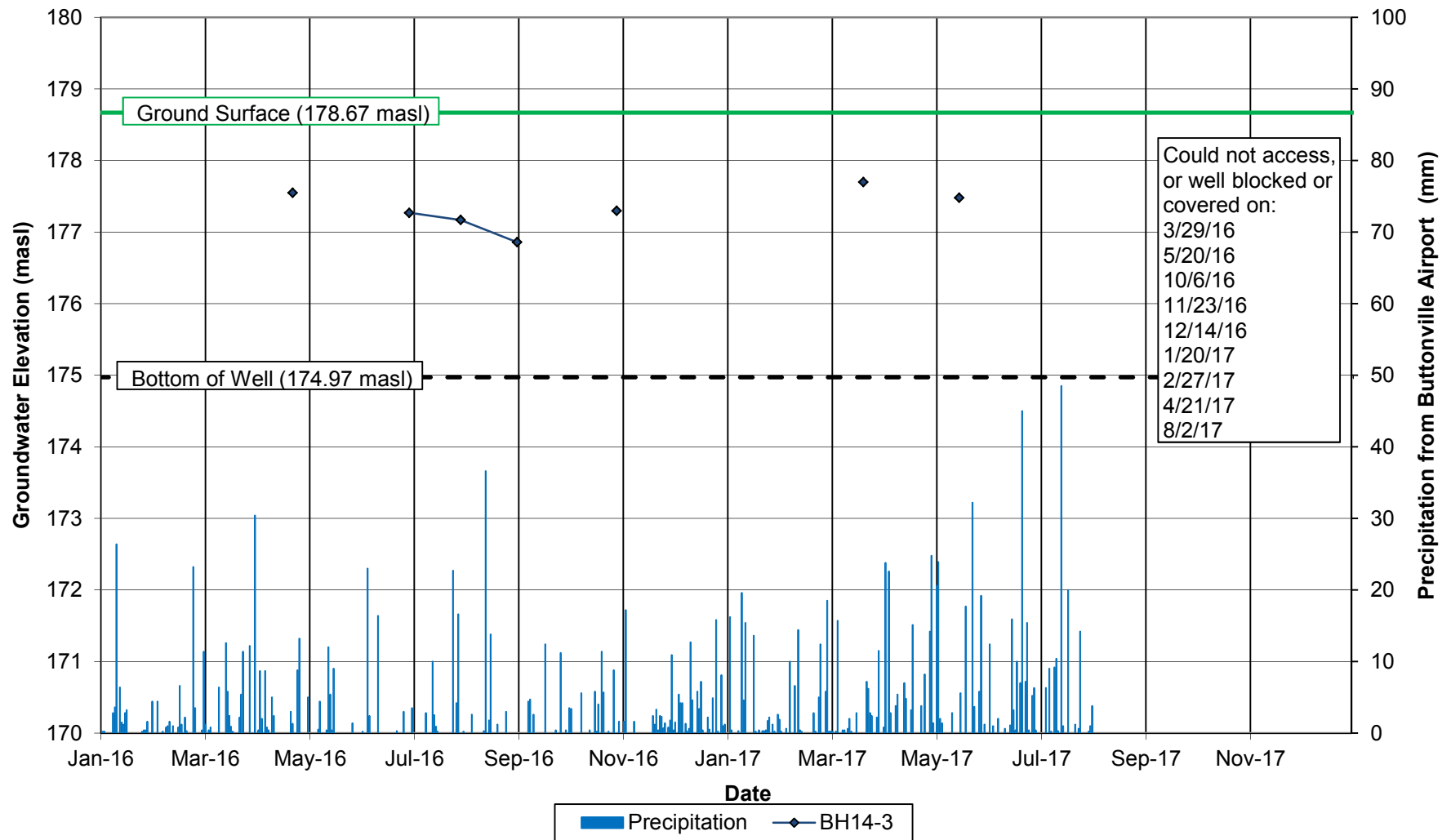




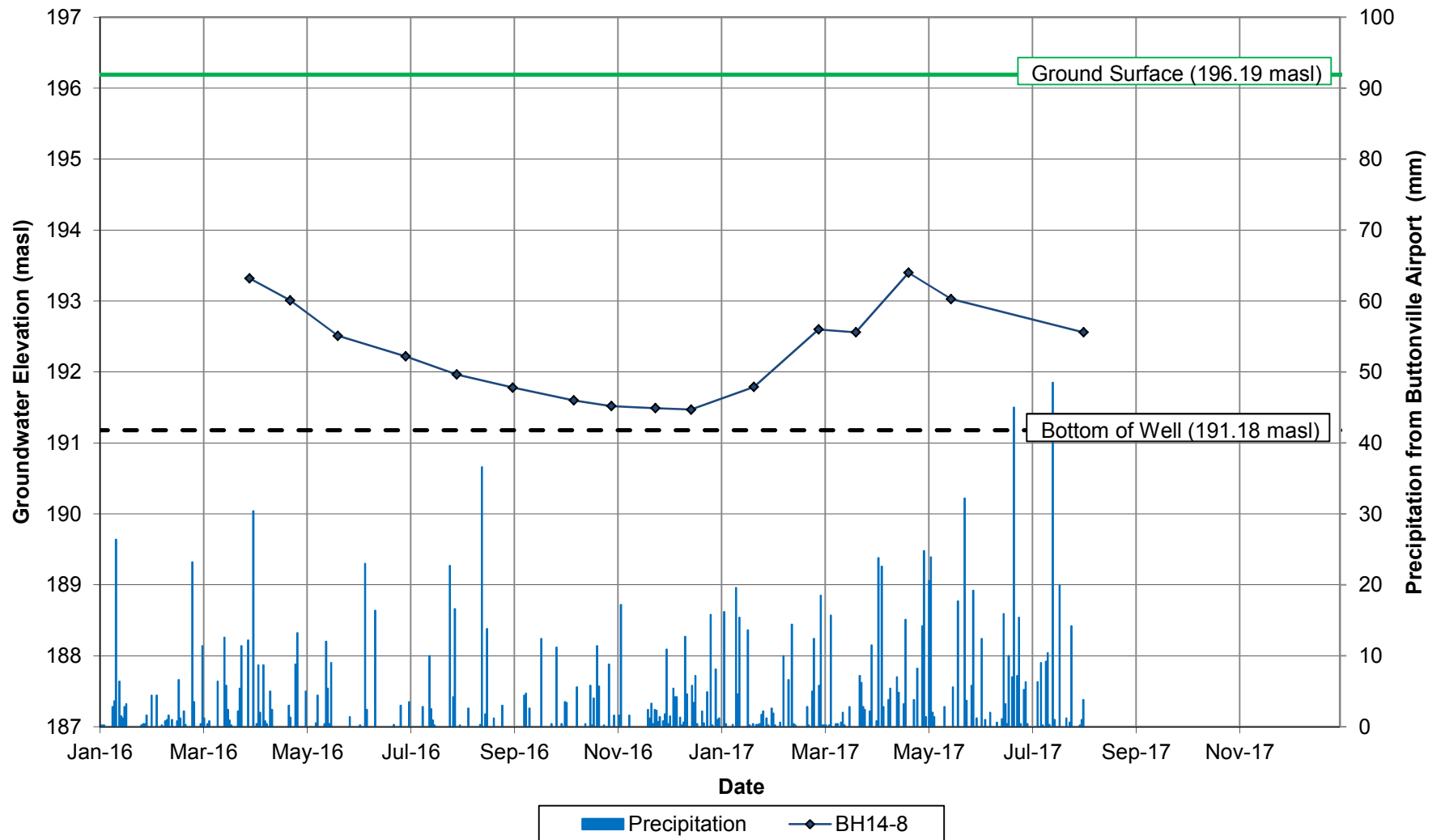
# Groundwater Elevations BH14-2



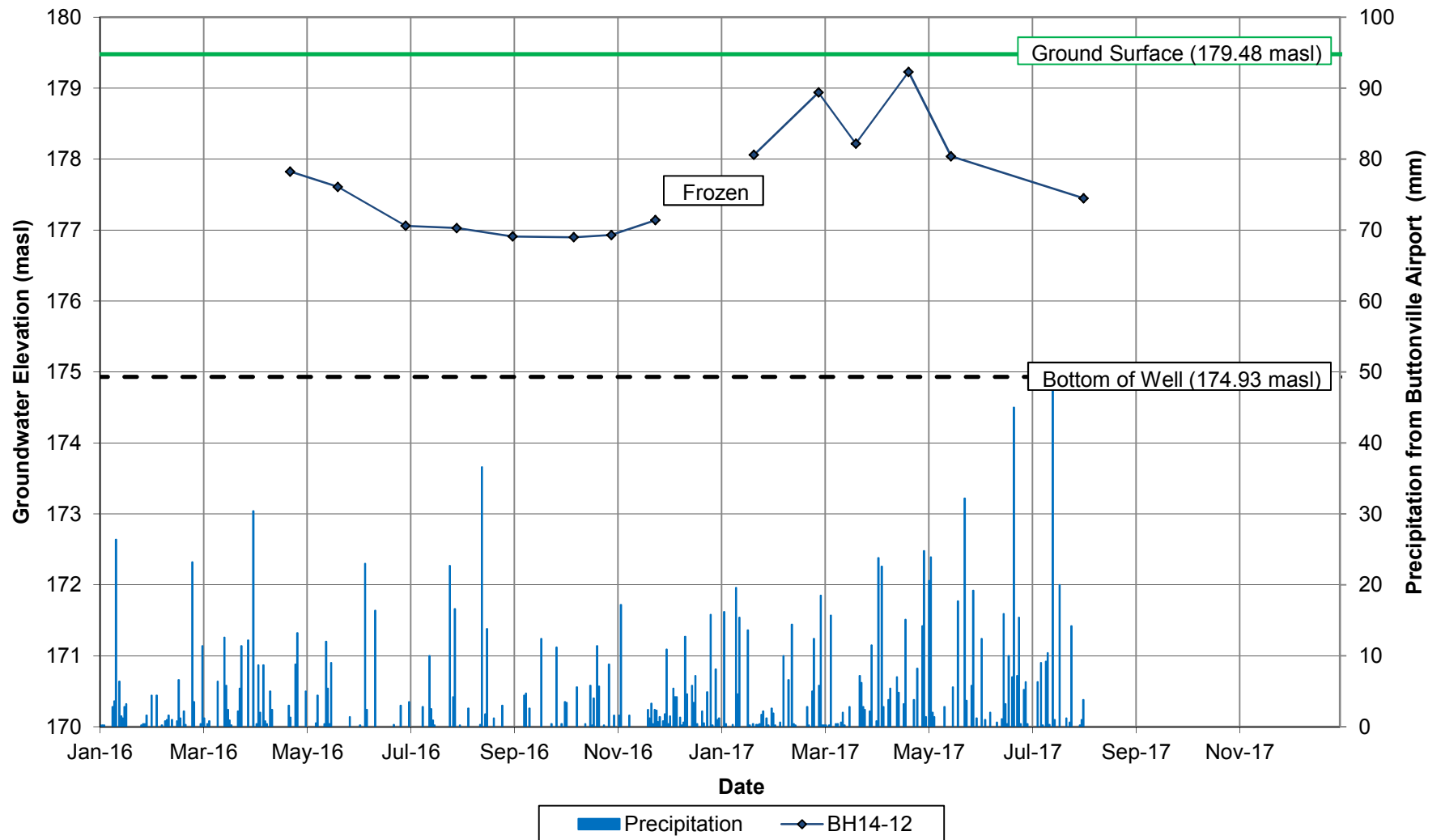
## Groundwater Elevations BH14-3



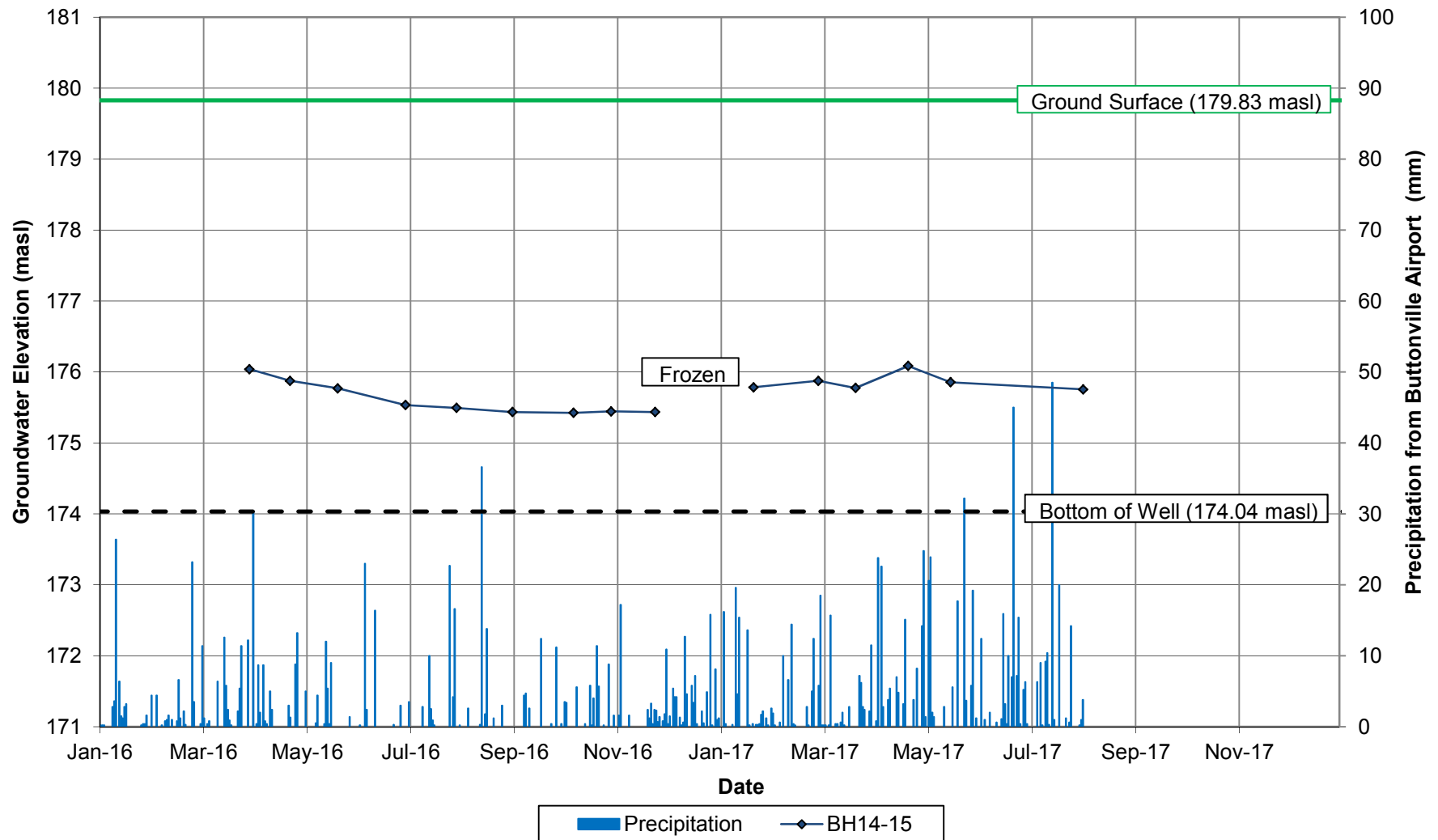
# Groundwater Elevations BH14-8



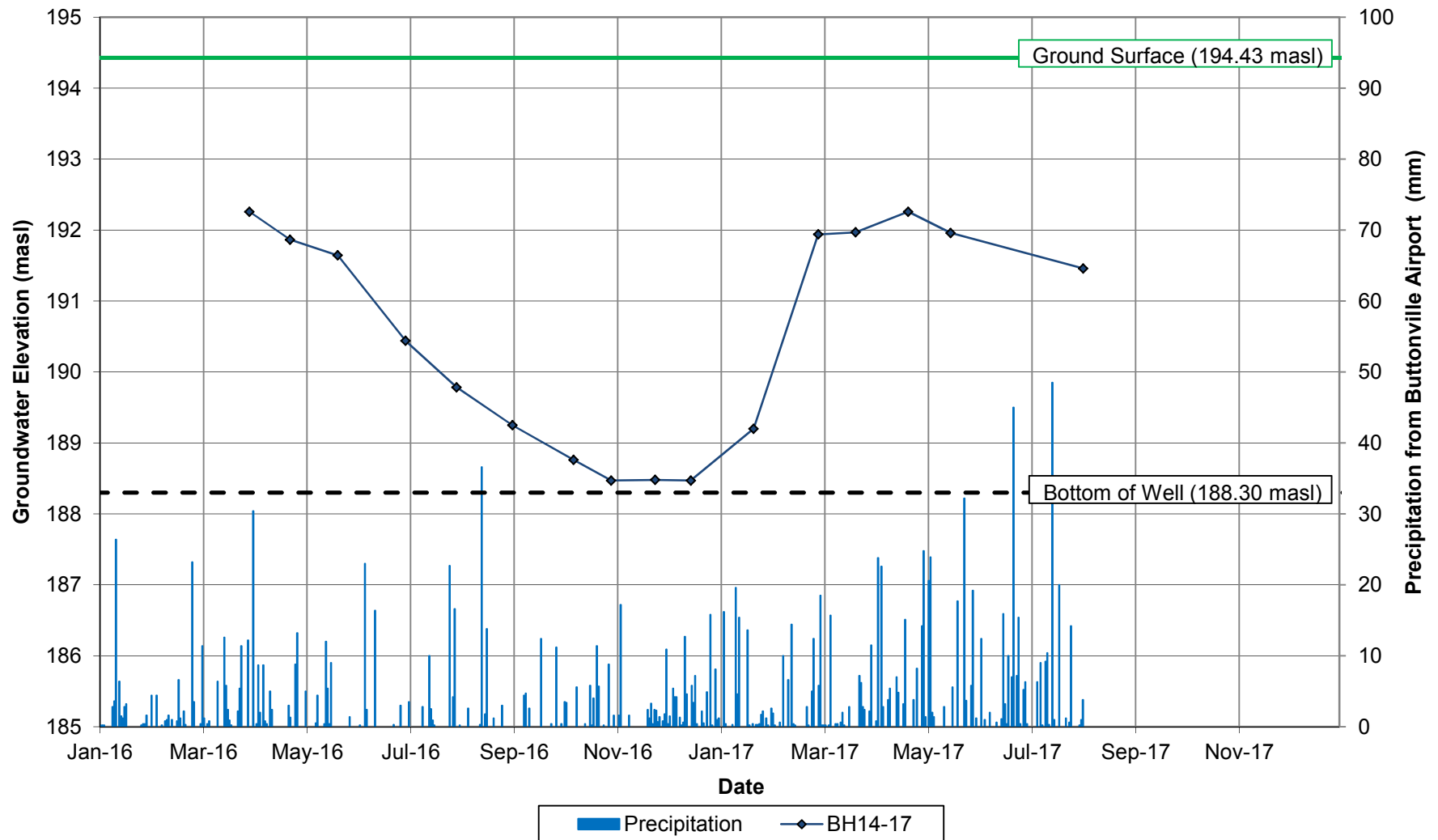
# Groundwater Elevations BH14-12



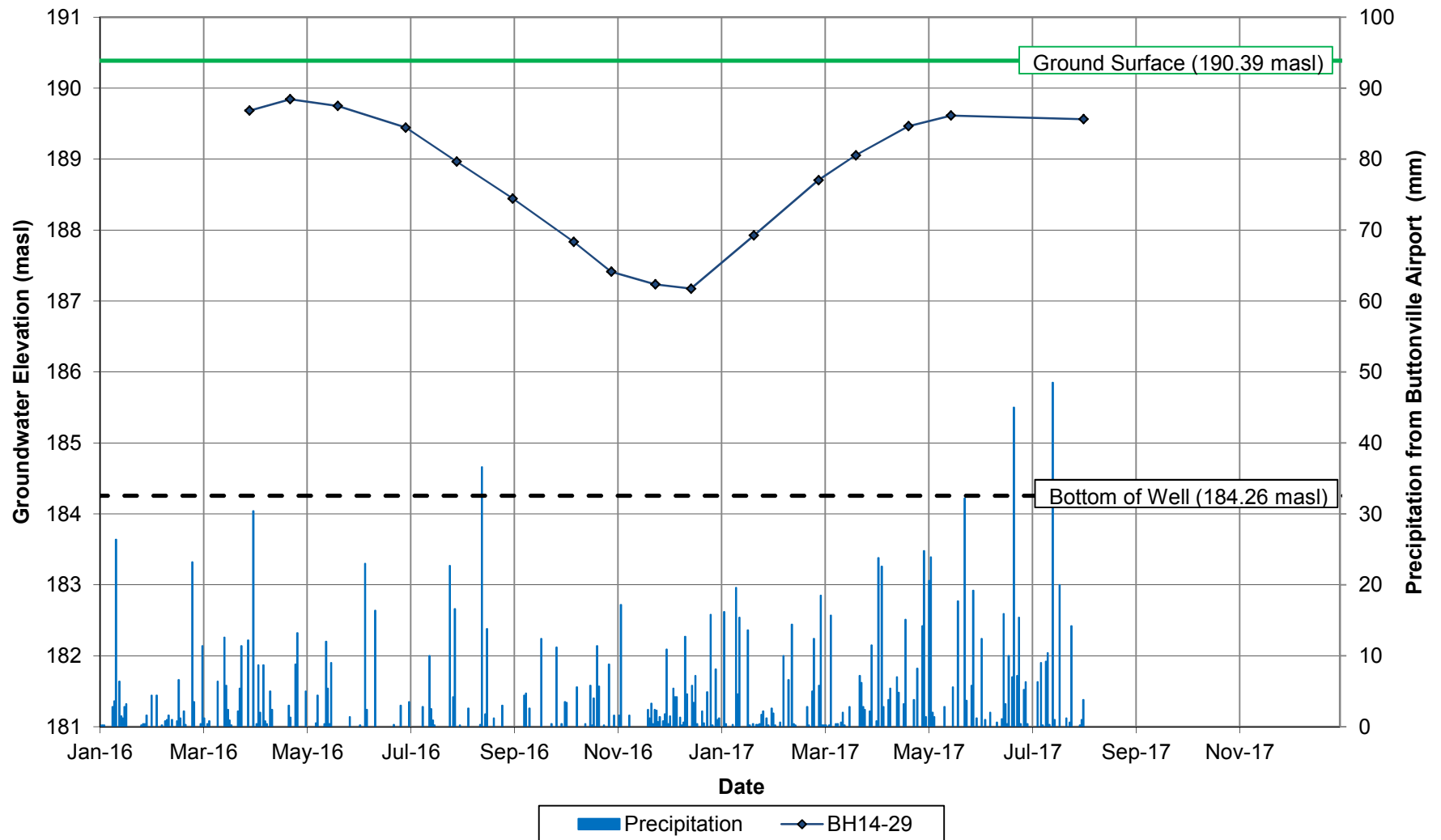
# Groundwater Elevations BH14-15



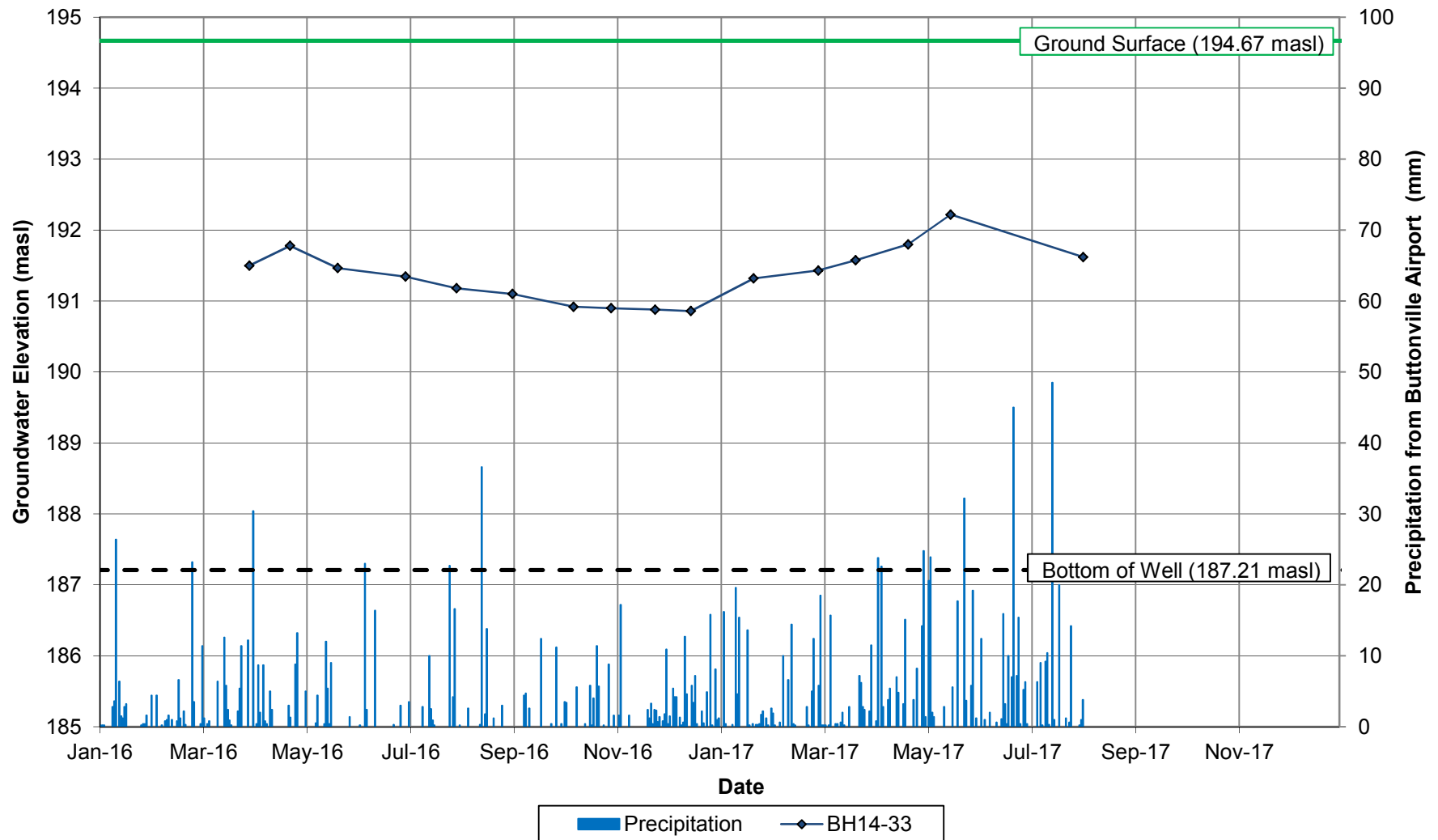
# Groundwater Elevations BH14-17



# Groundwater Elevations BH14-29

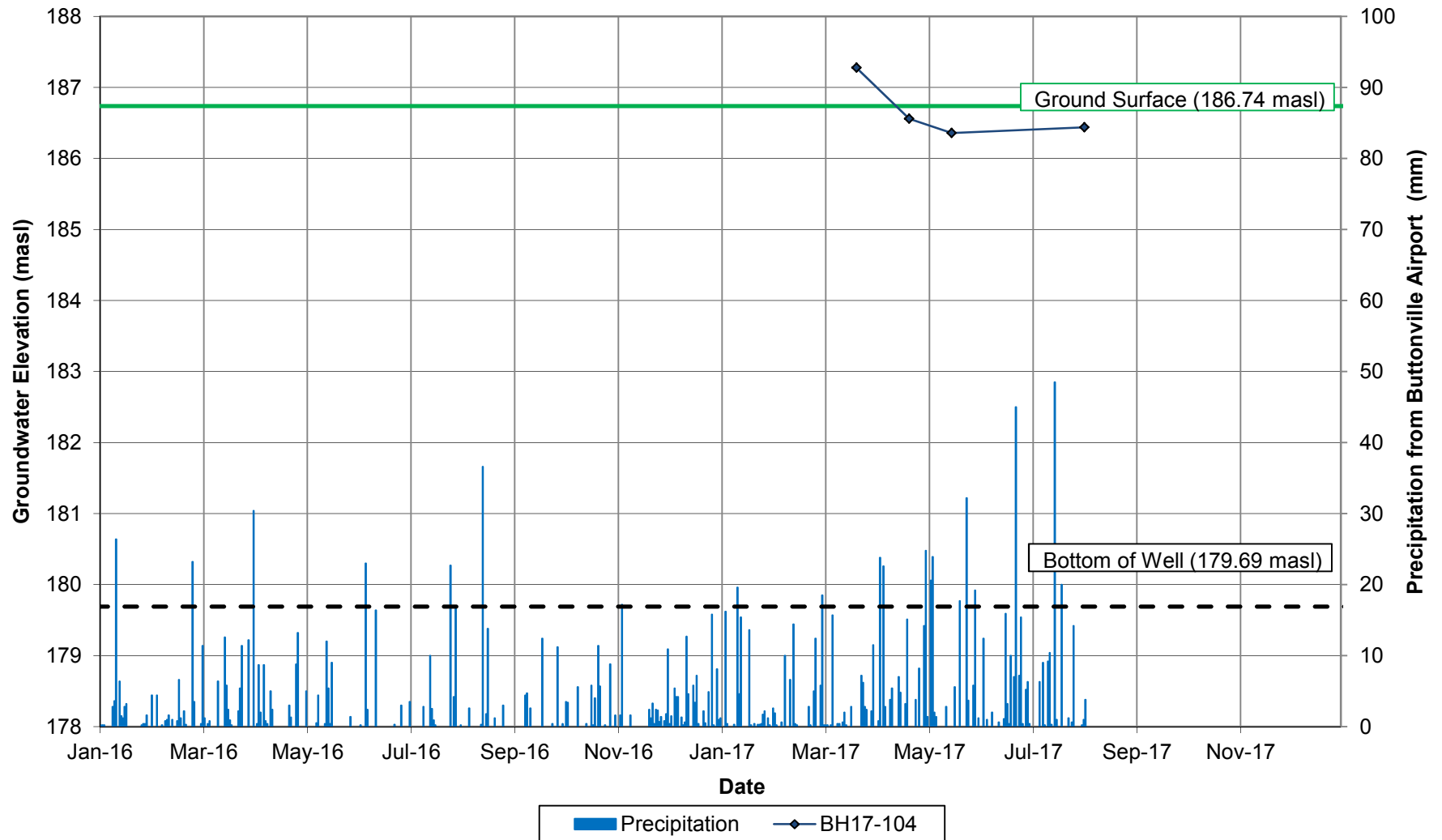


# Groundwater Elevations BH14-33

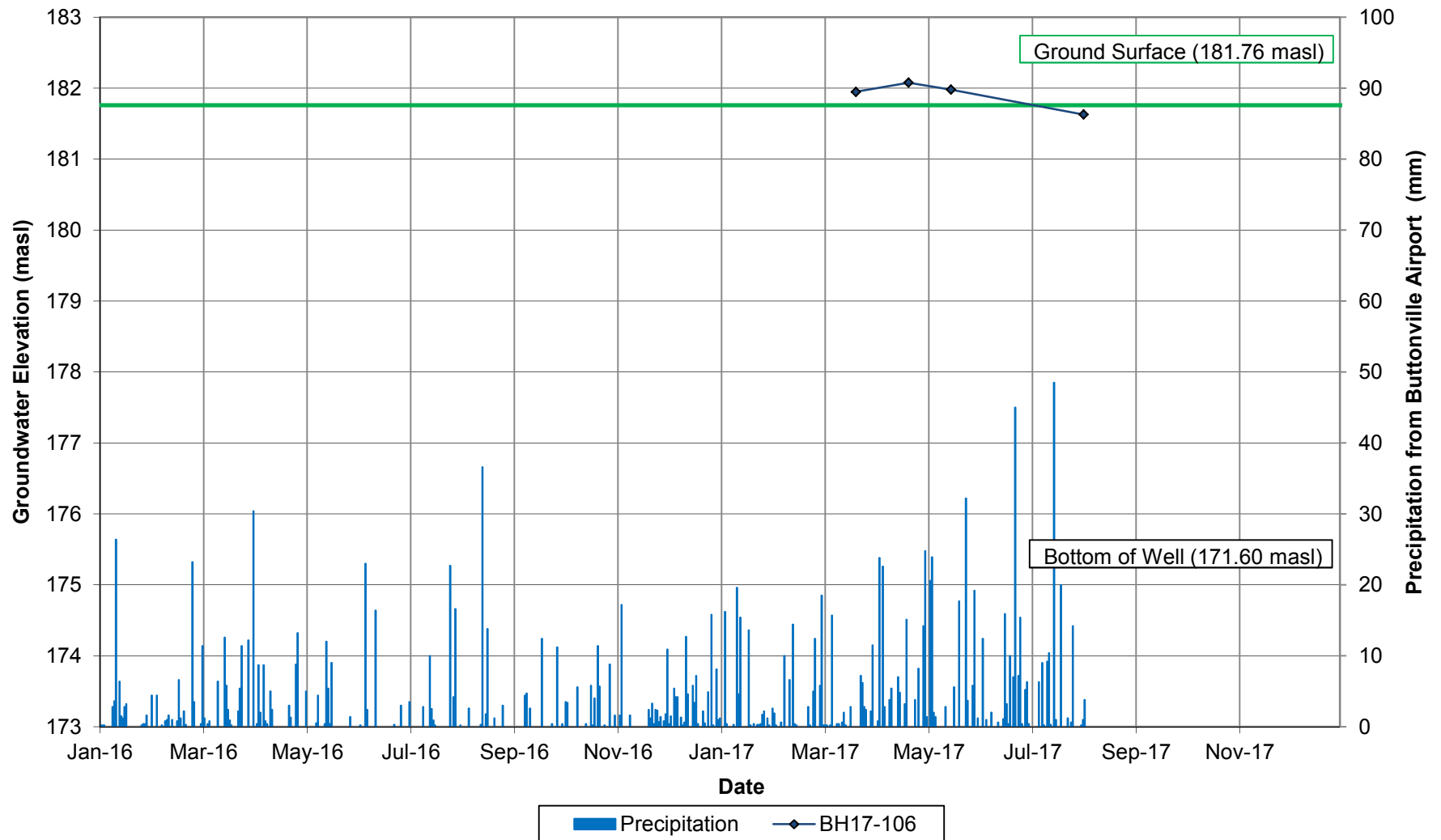




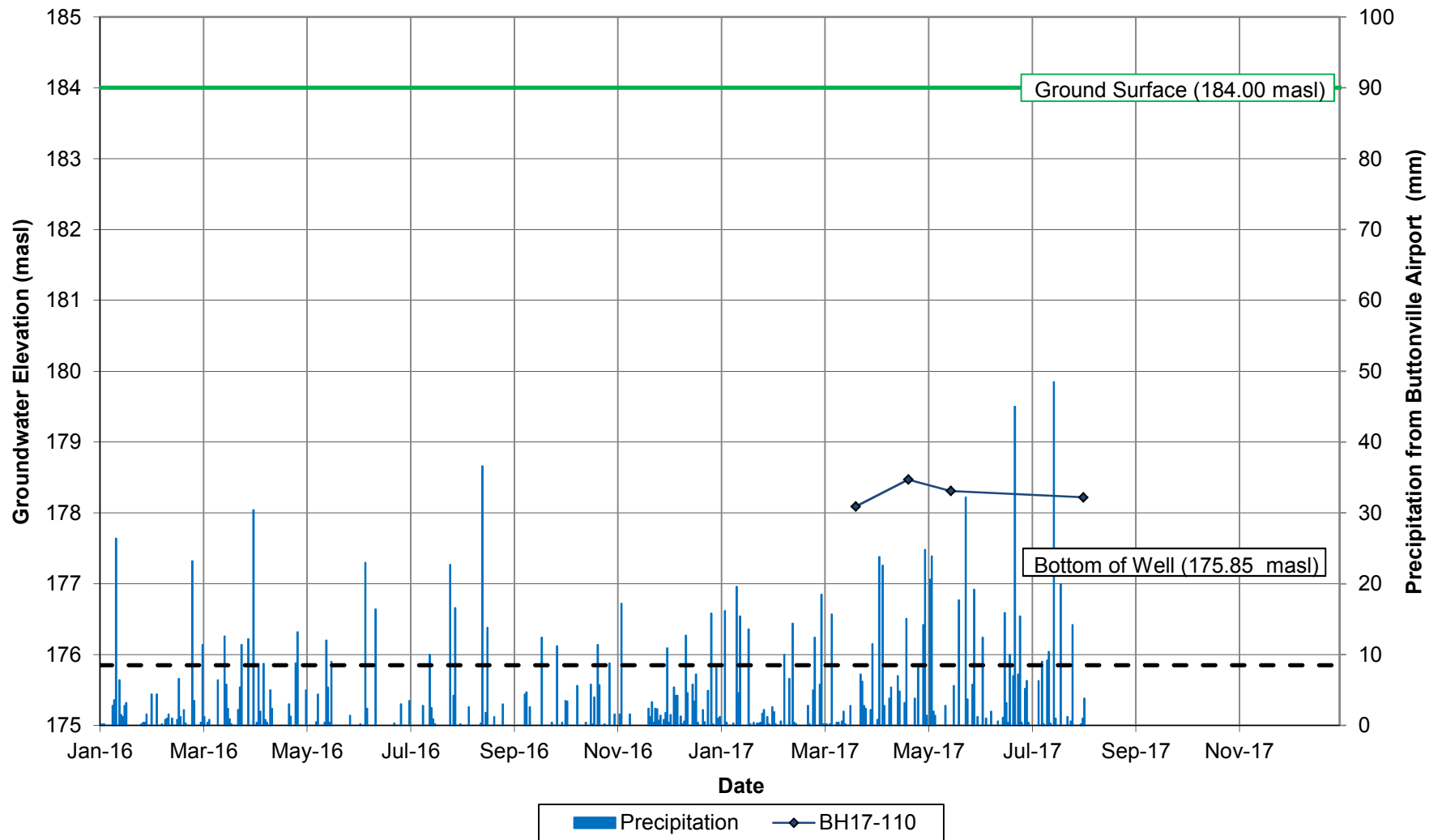
# Groundwater Elevations BH17-104



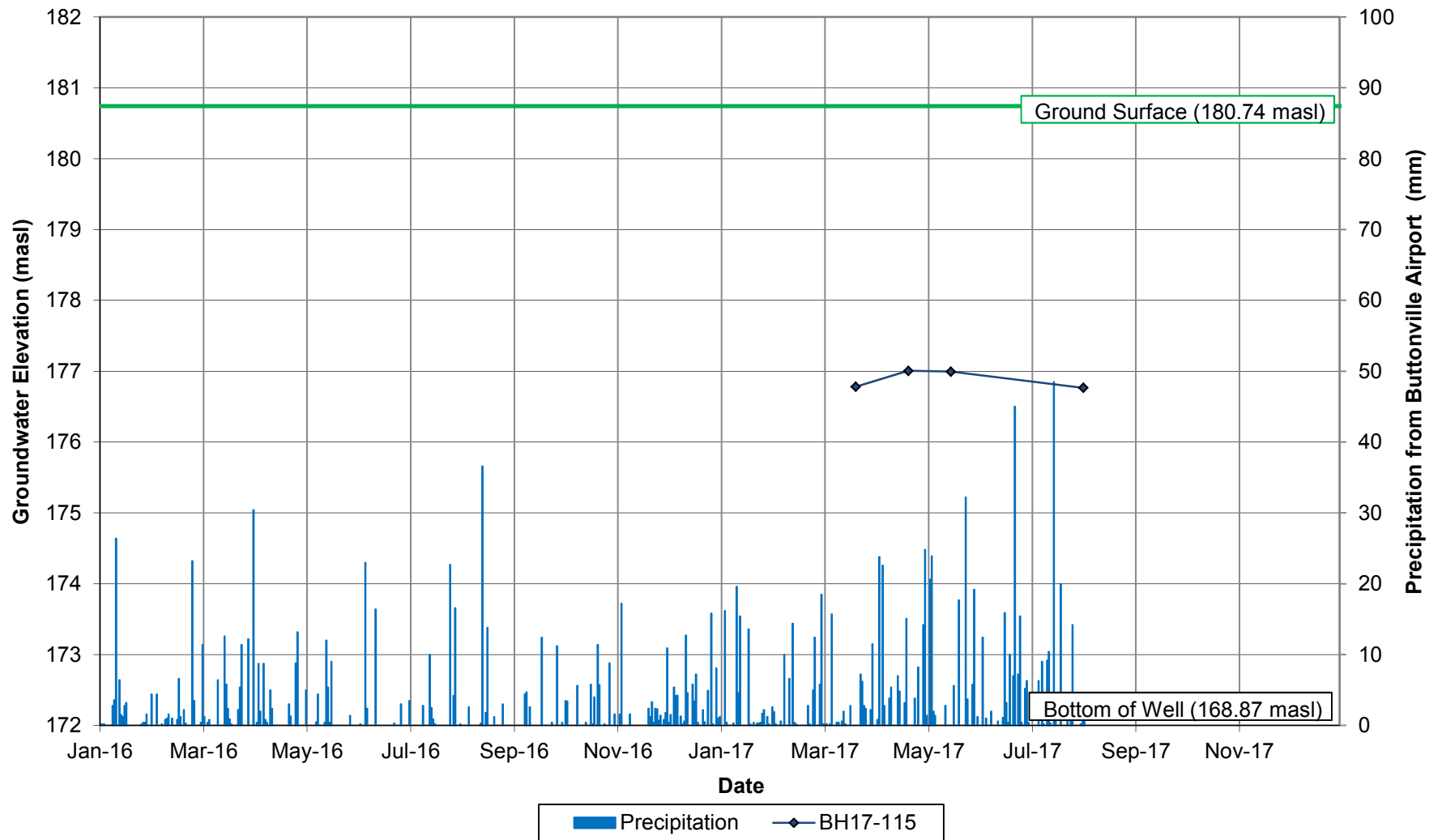
# Groundwater Elevations BH17-106



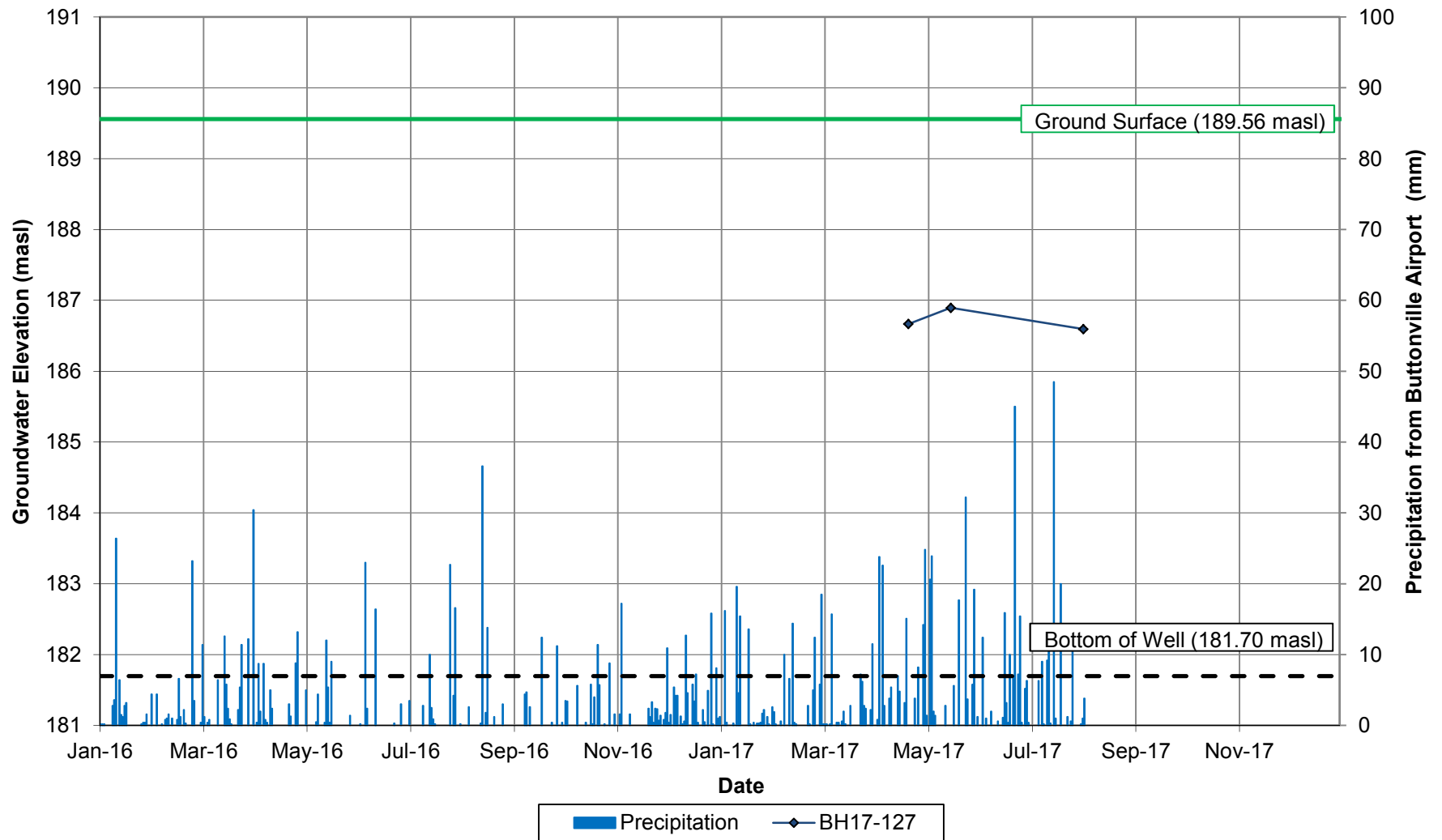
# Groundwater Elevations BH17-110



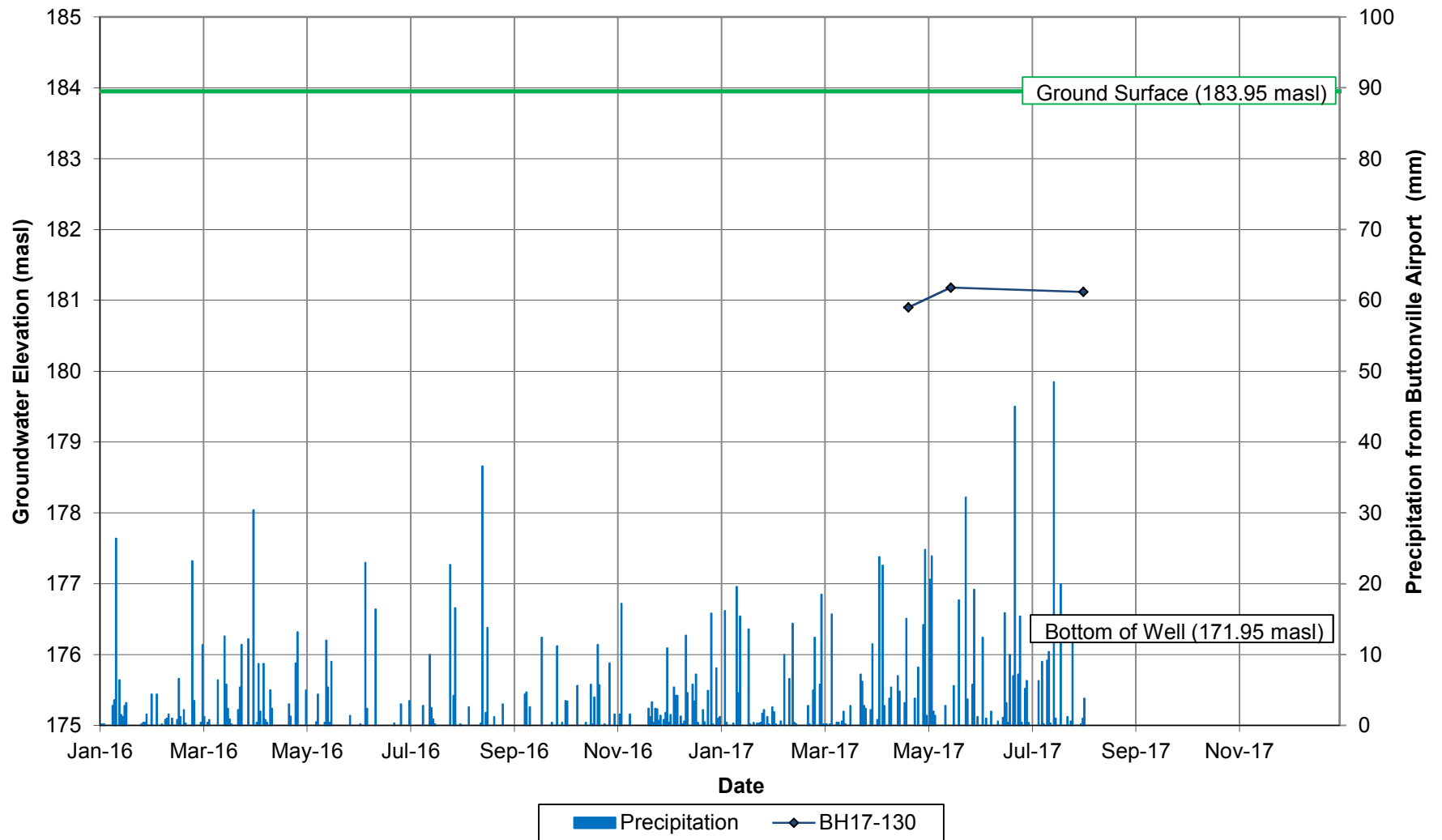
# Groundwater Elevations BH115



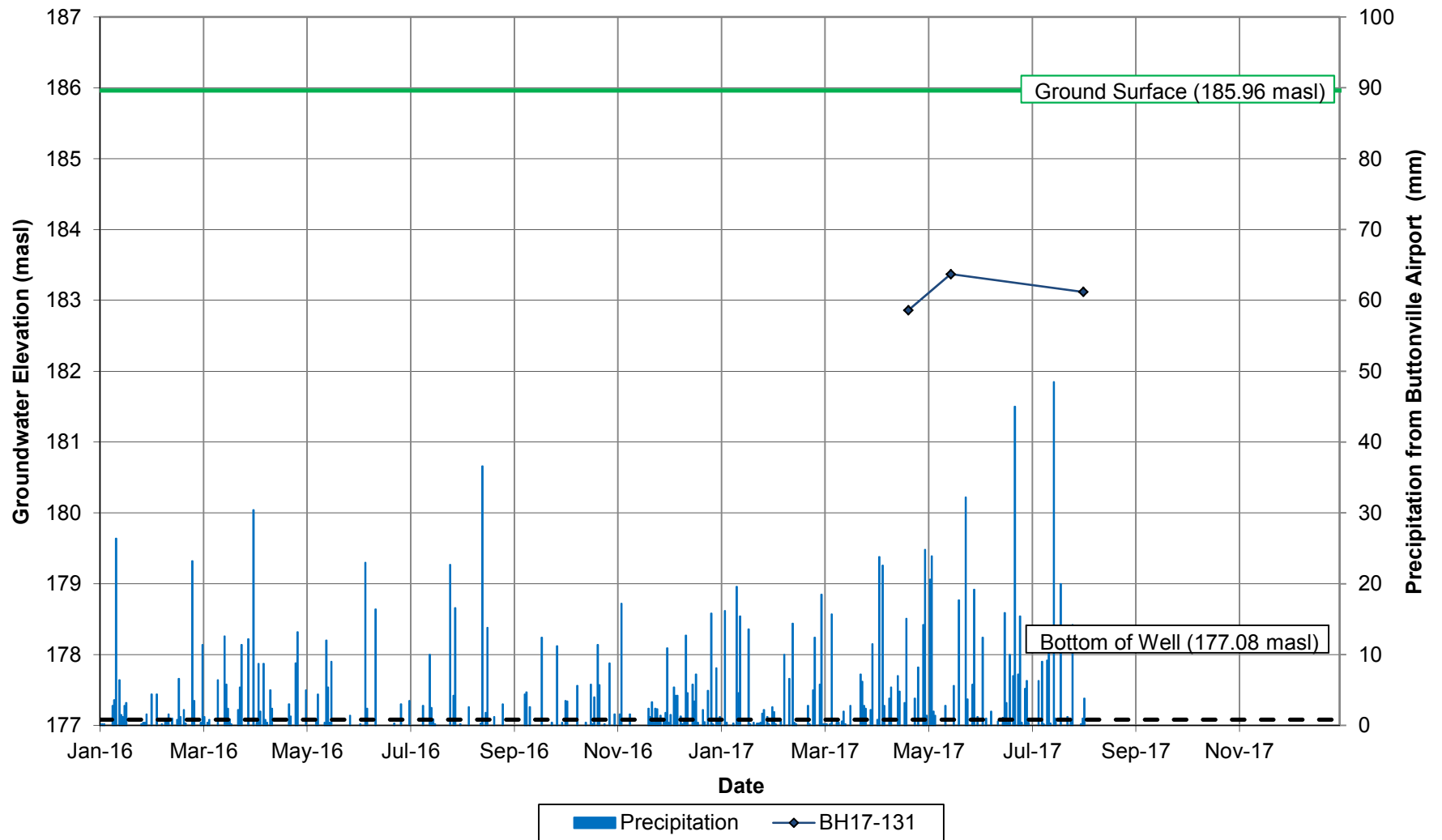
# Groundwater Elevations BH17-127



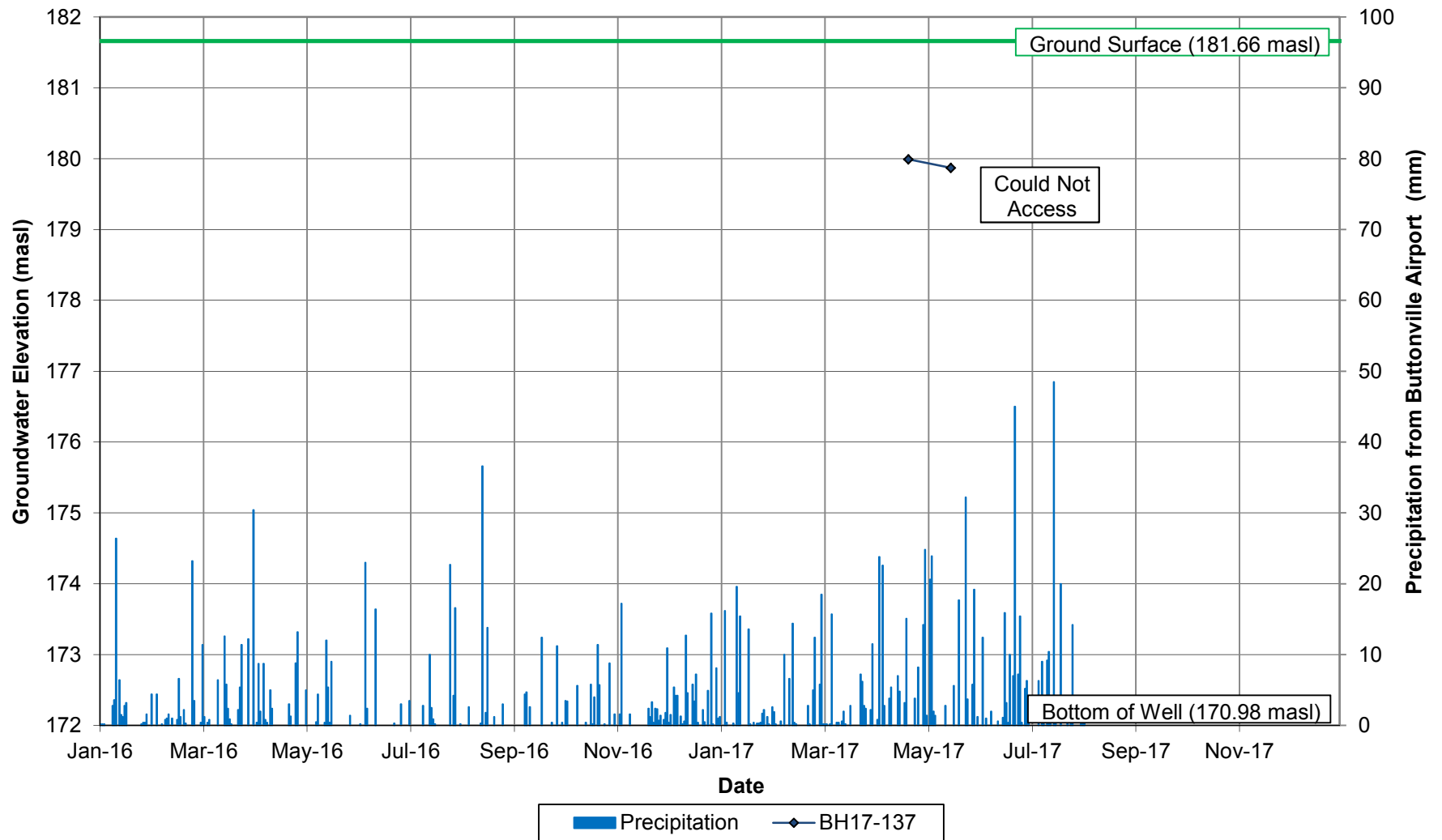
# Groundwater Elevations BH17-130



# Groundwater Elevations BH17-131

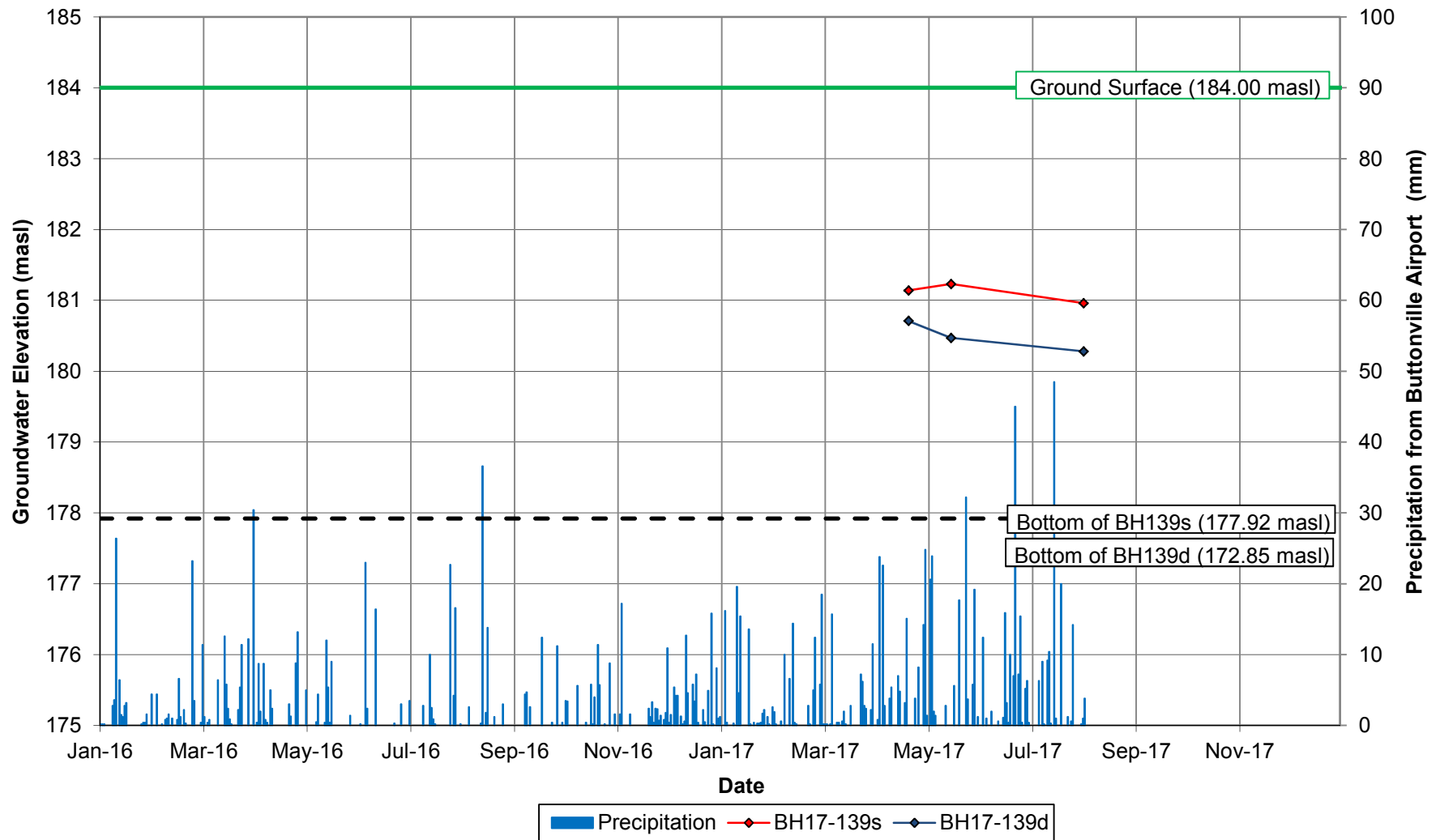


# Groundwater Elevations BH17-137

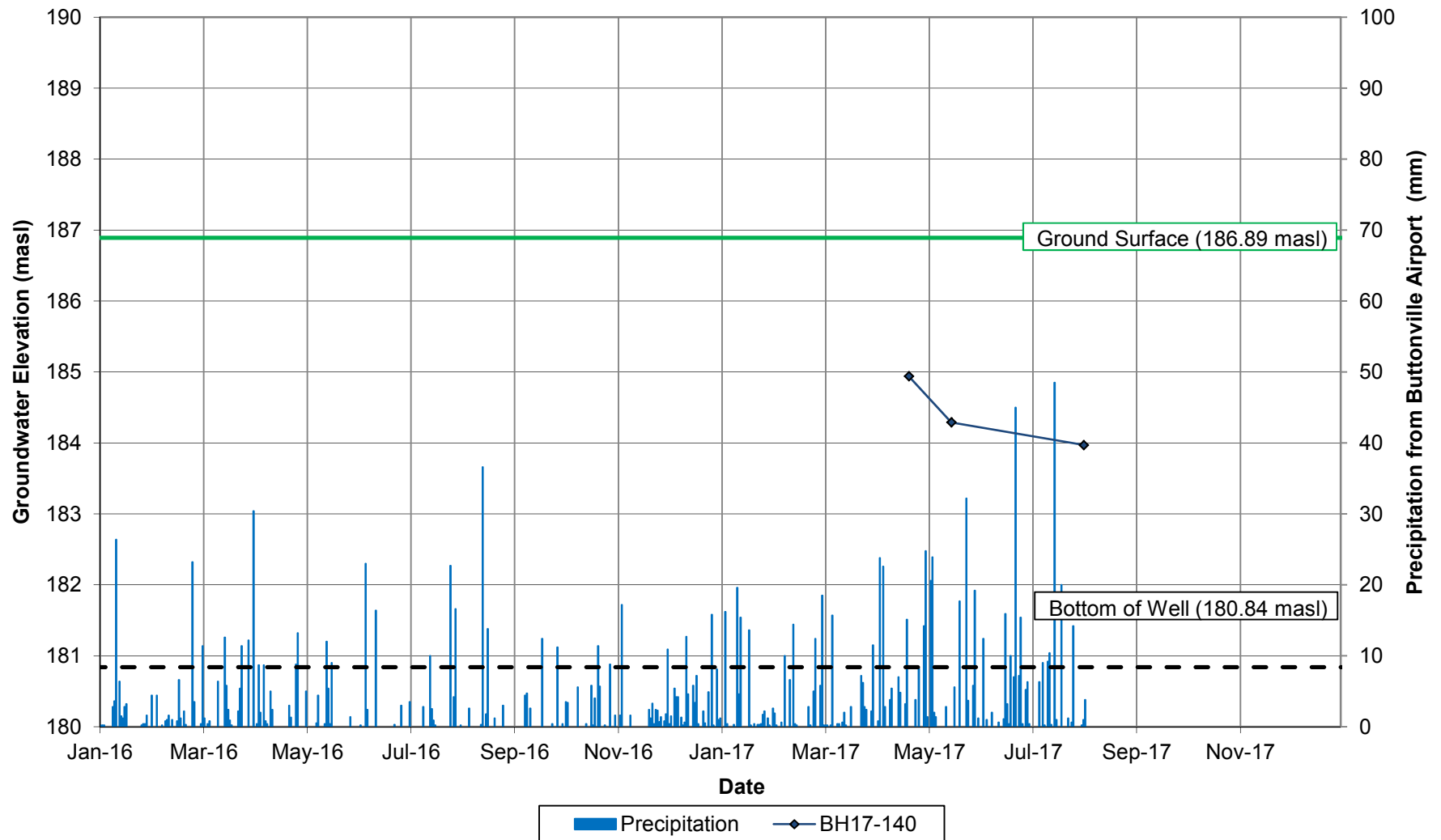




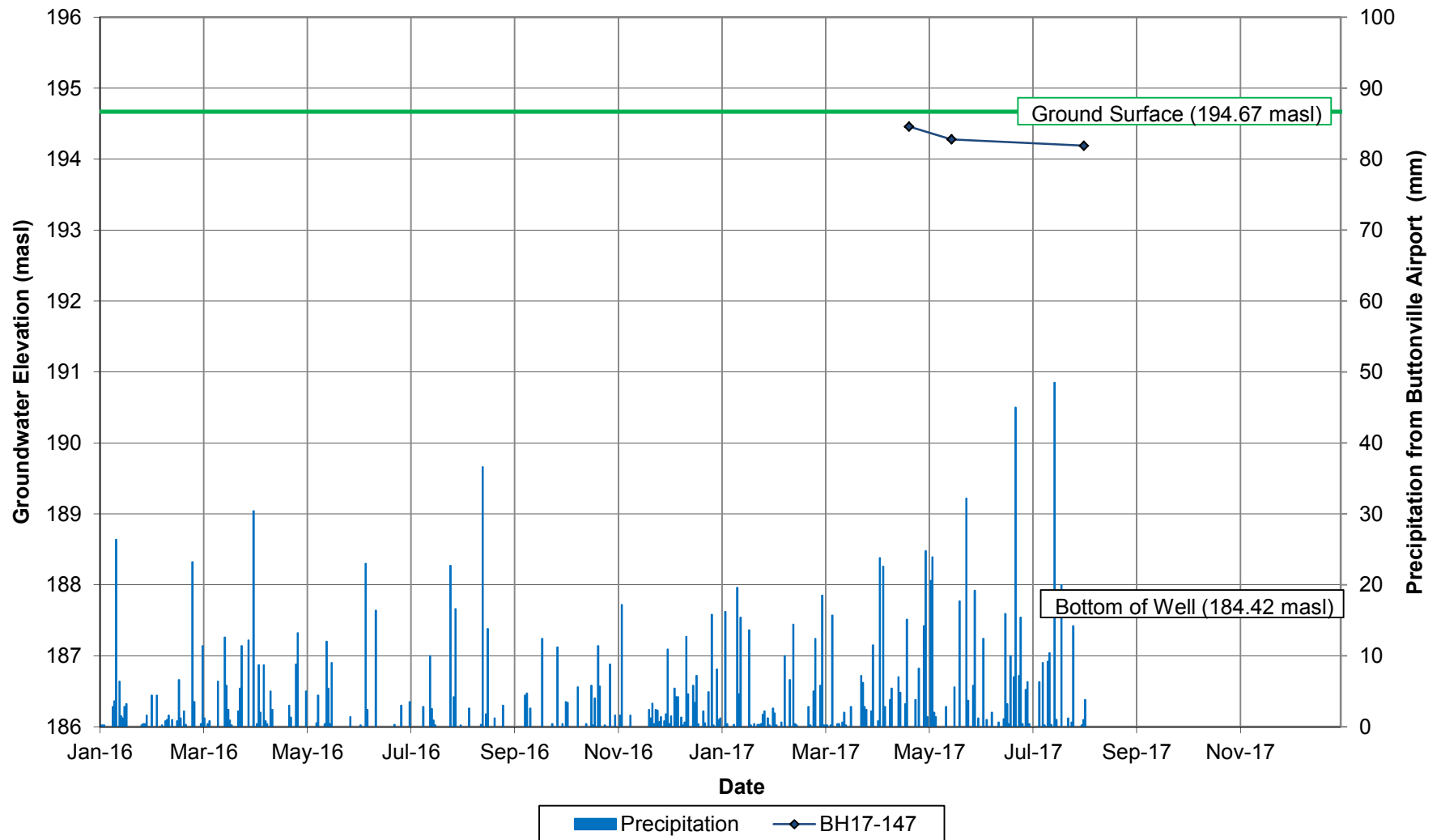
# Groundwater Elevations BH17-139s/d



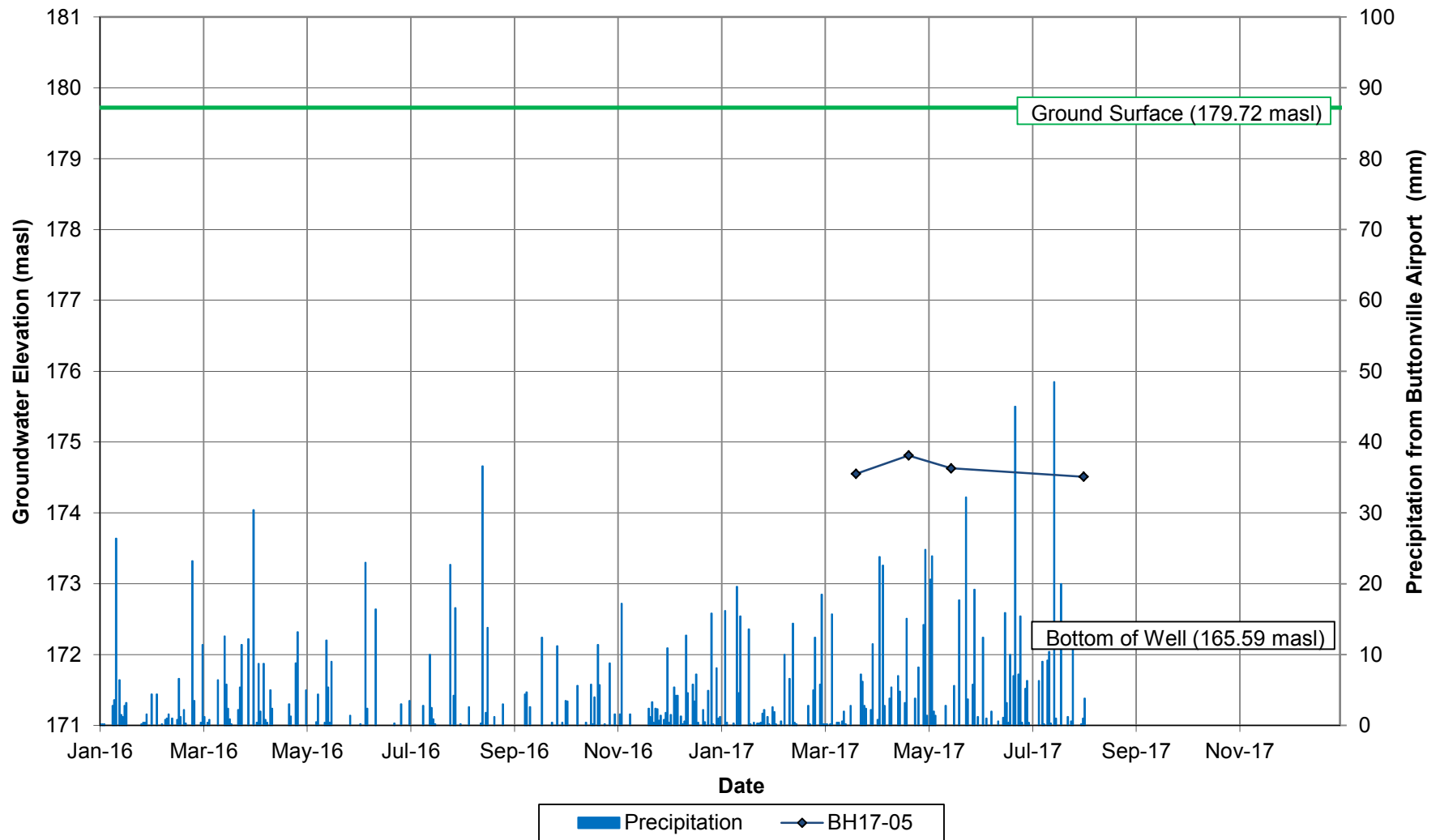
# Groundwater Elevations BH17-140



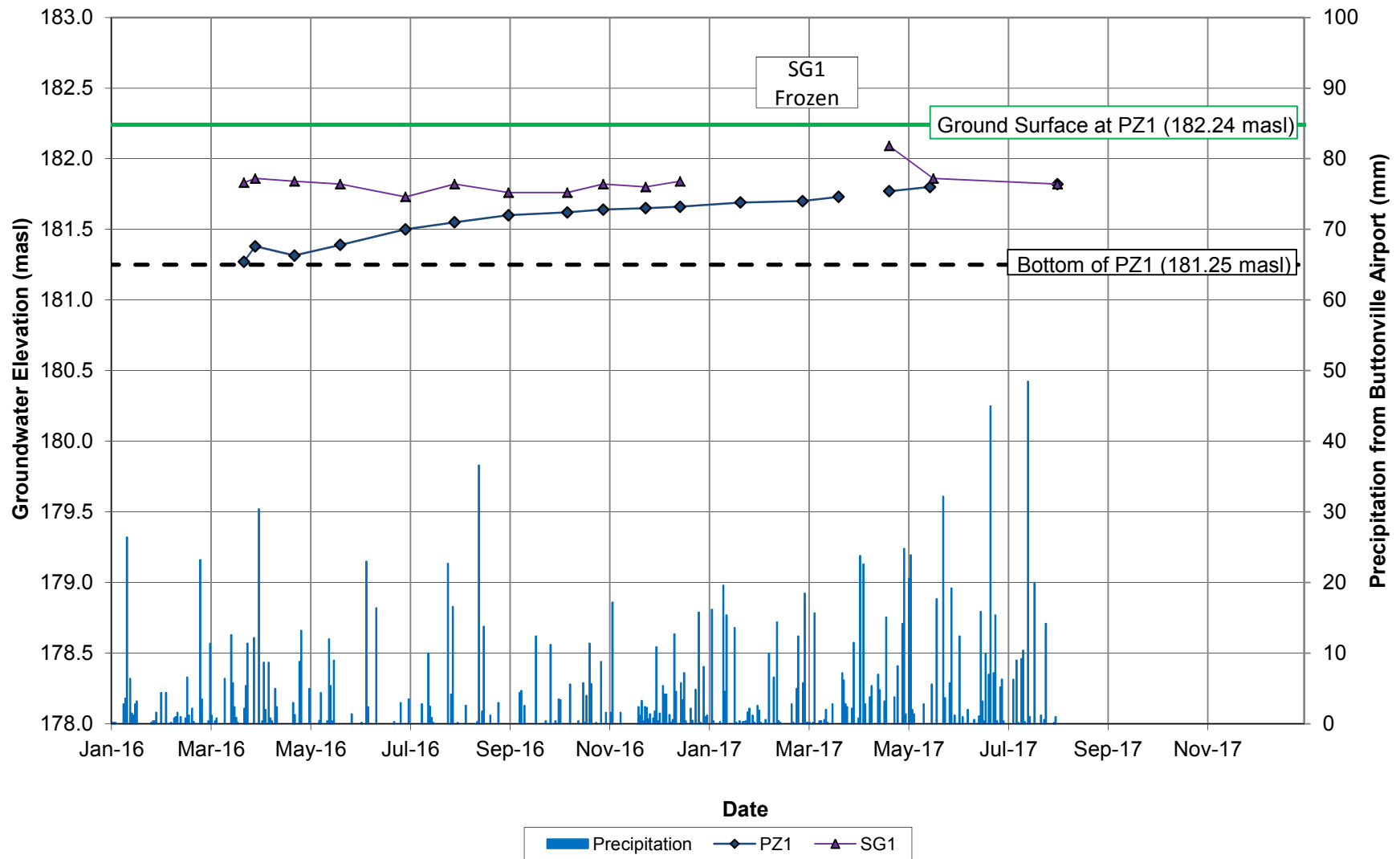
# Groundwater Elevations BH17-147



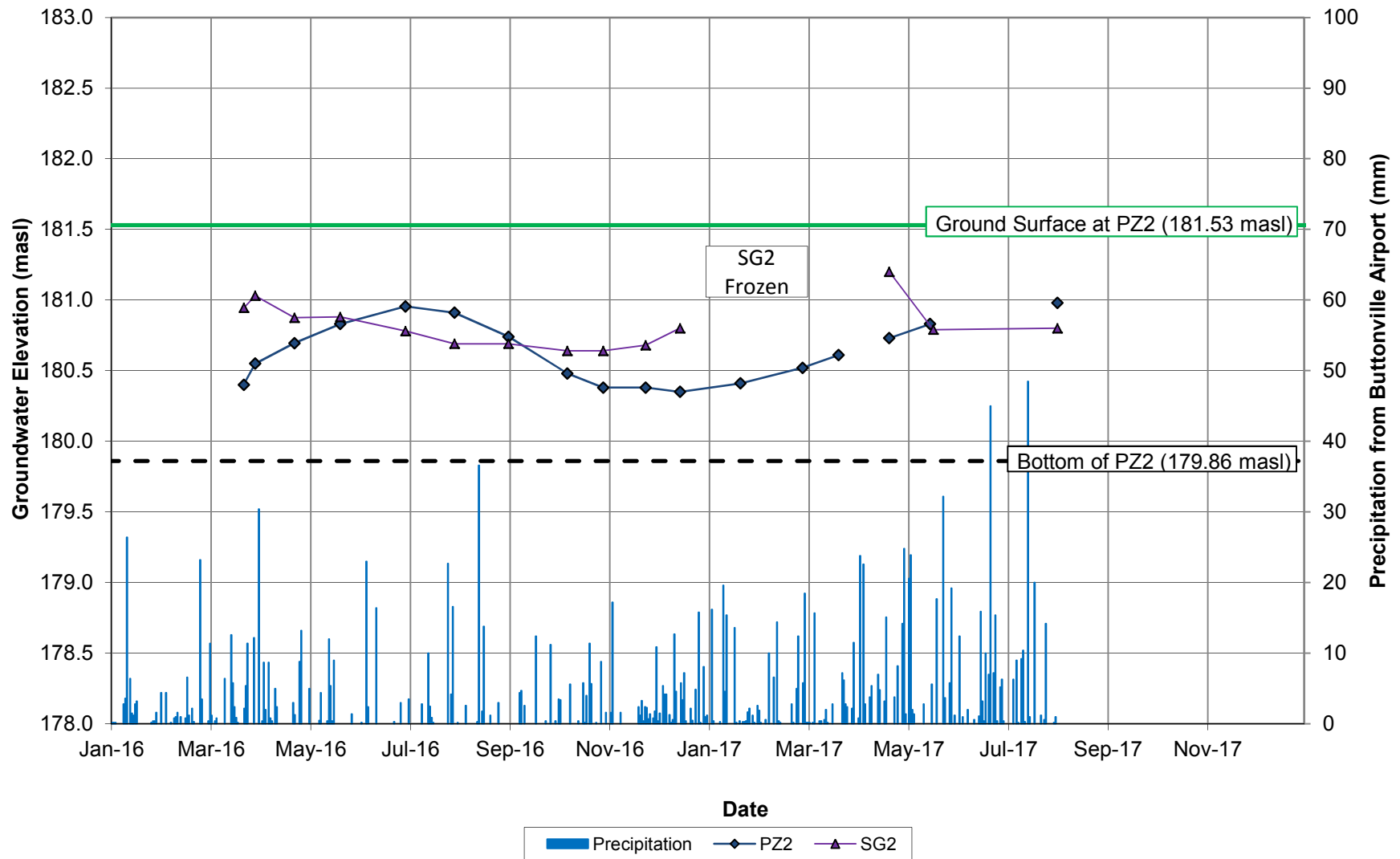
# Groundwater Elevations BH17-05



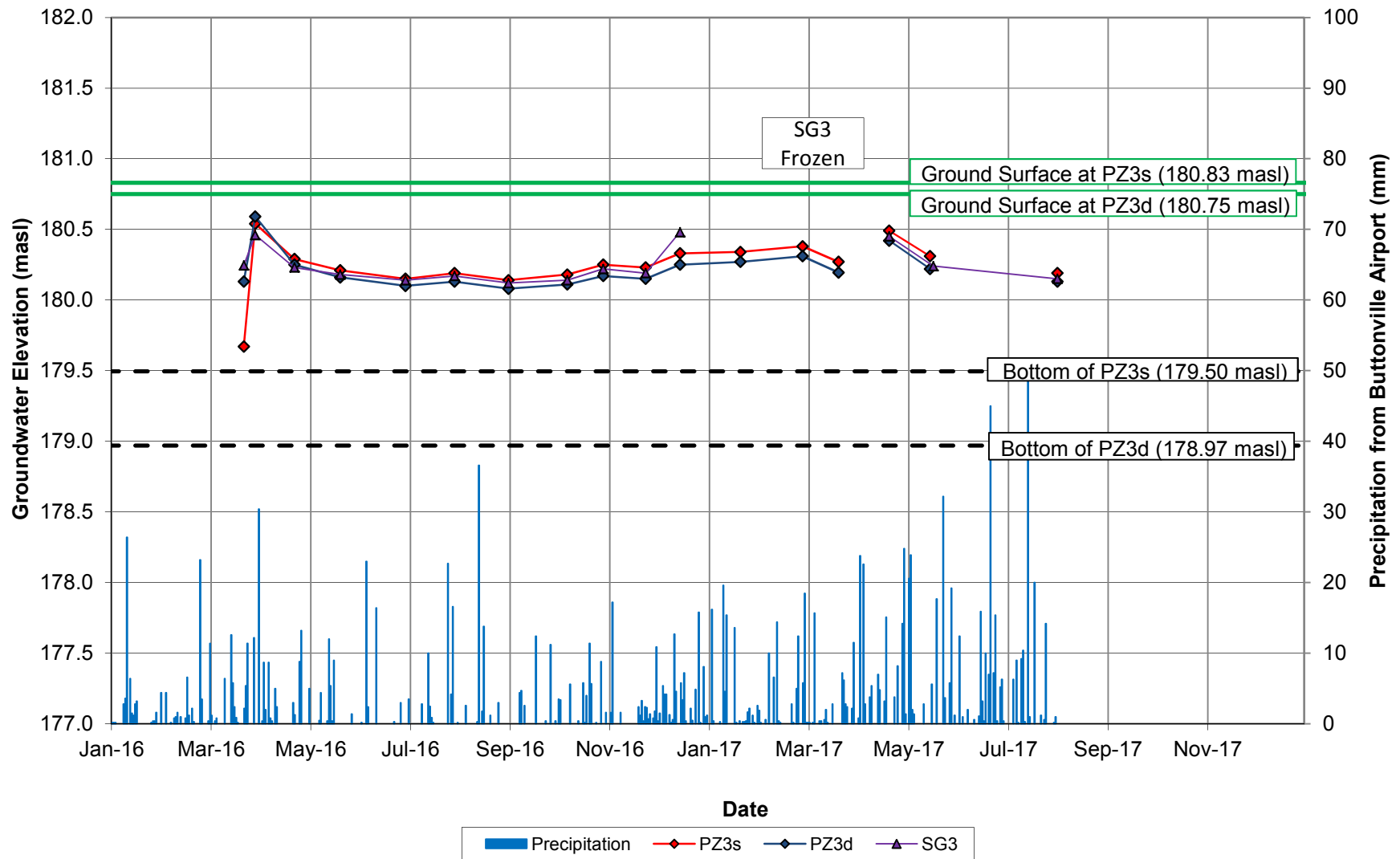
# Groundwater Elevations PZ1 + SG1



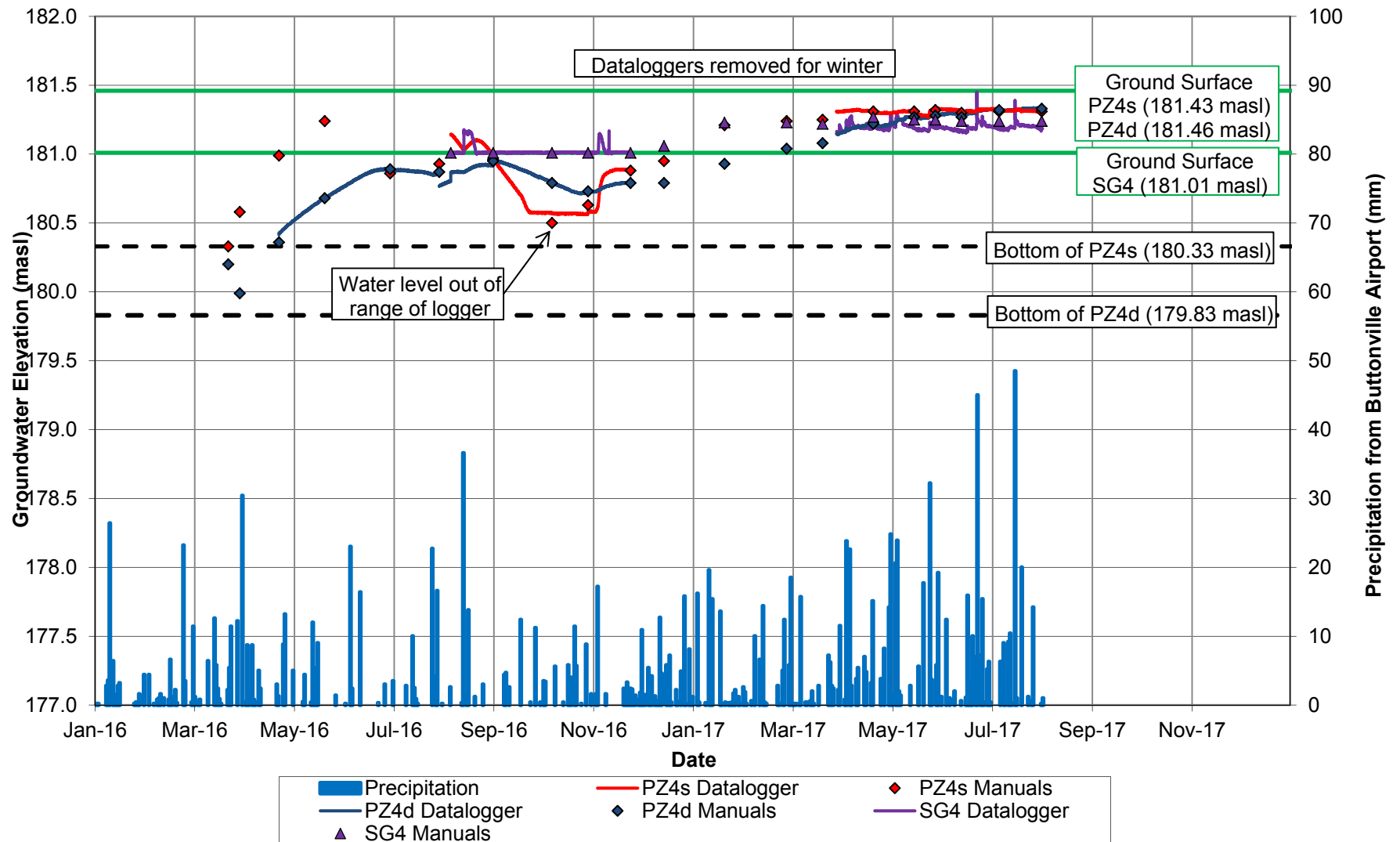
# Groundwater Elevations PZ2 + SG2



# Groundwater Elevations PZ3s/d + SG3

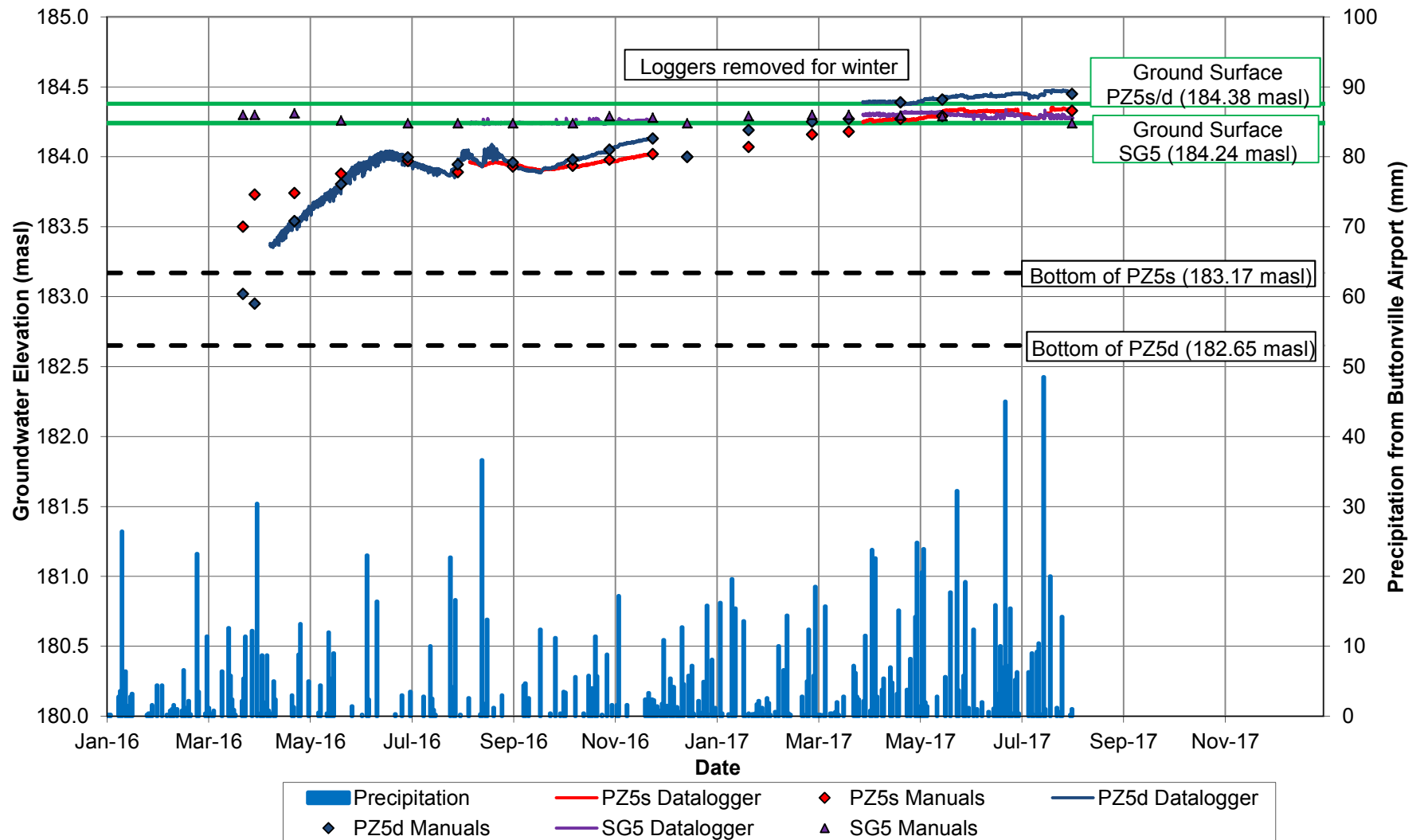


# Groundwater Elevations PZ4s/d + SG4

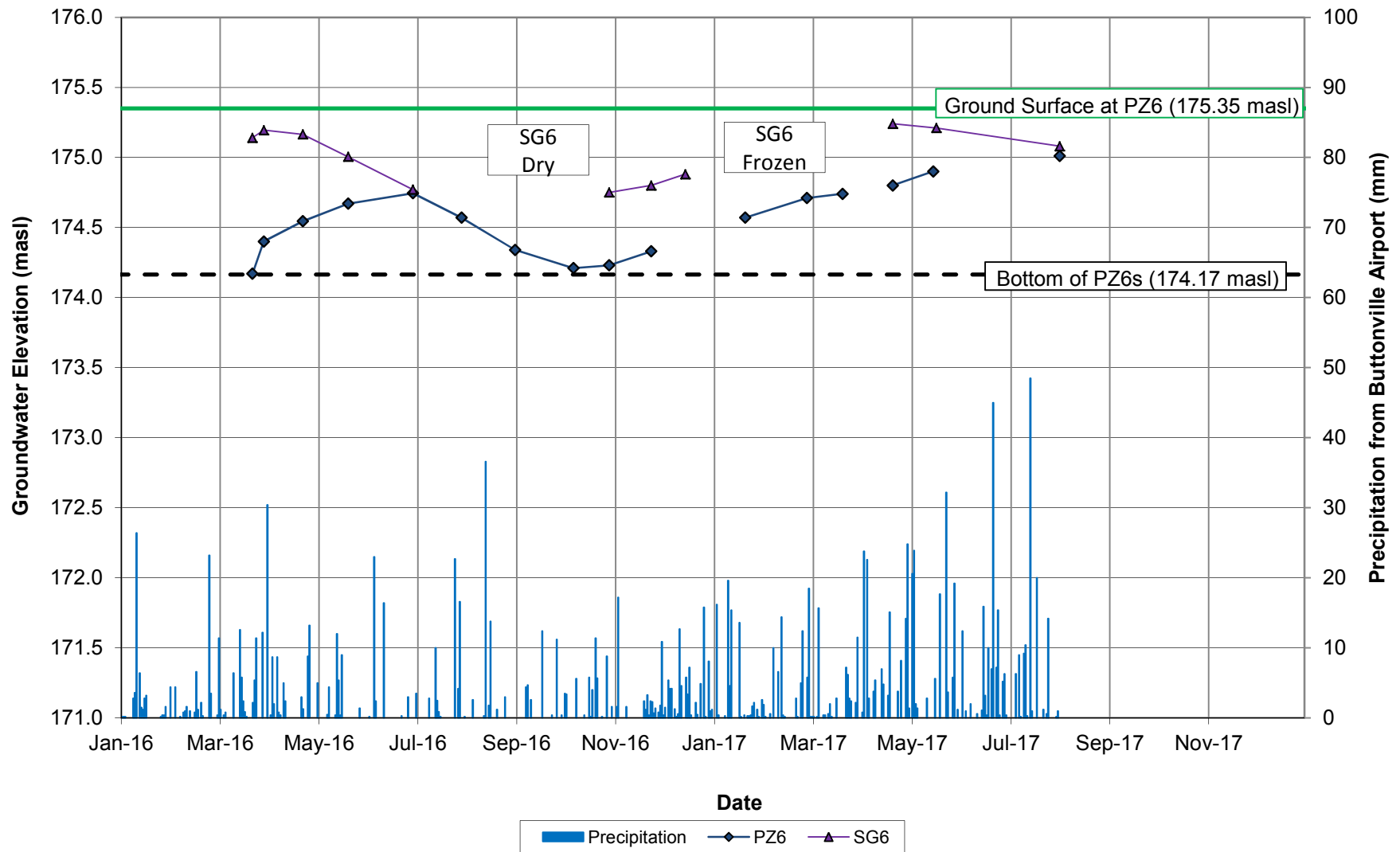




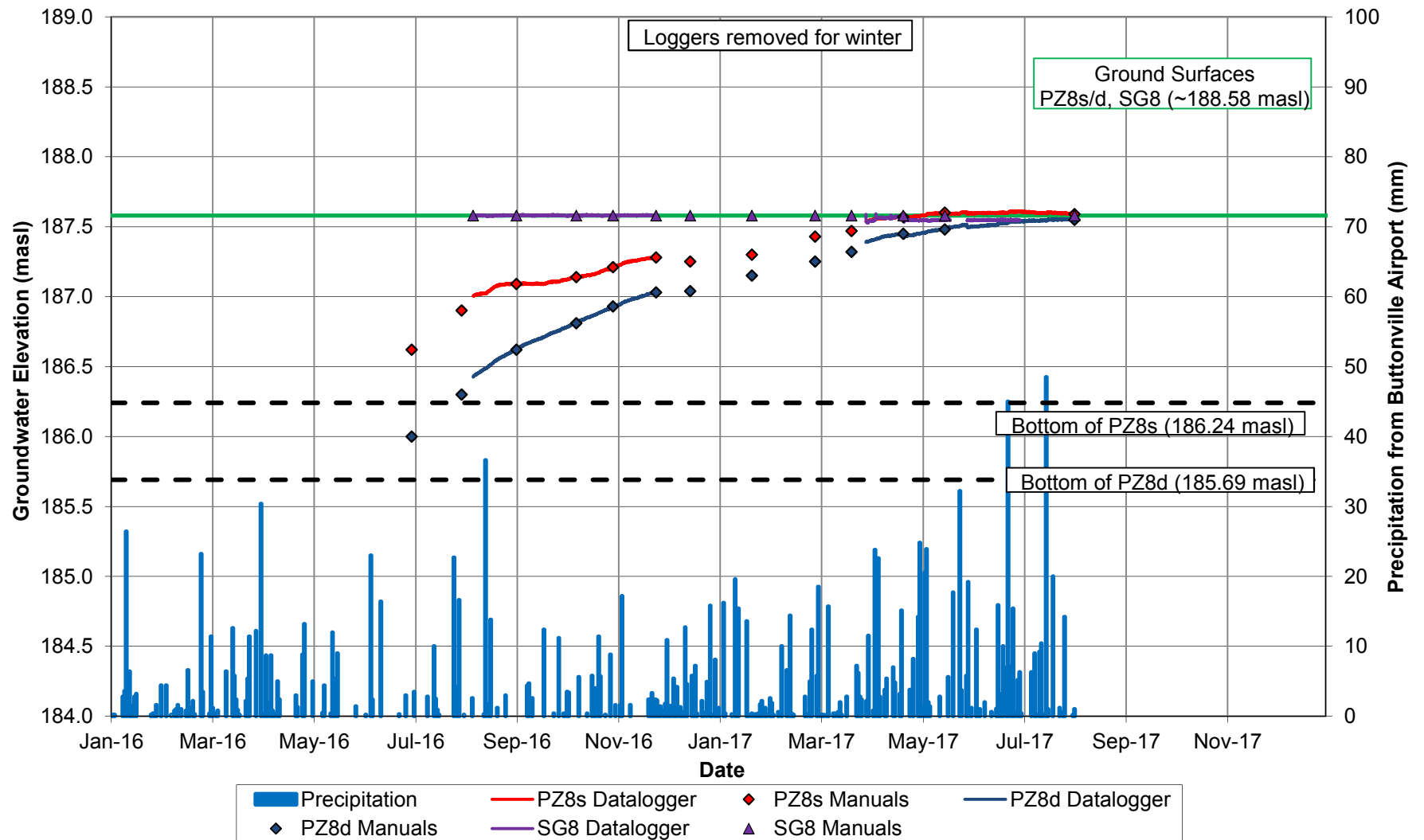
# Groundwater Elevations PZ5s/d + SG5



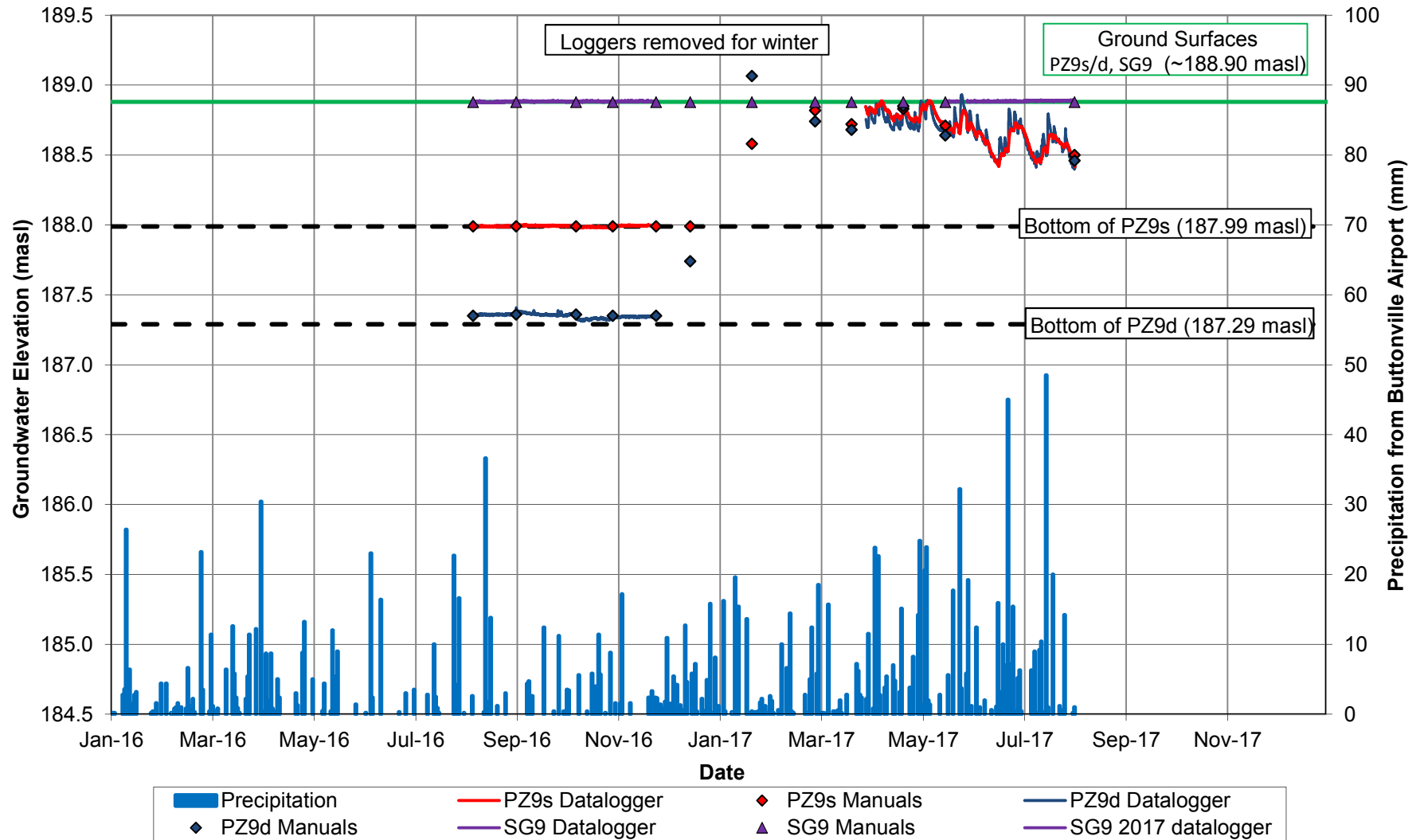
# Groundwater Elevations PZ6 + SG6



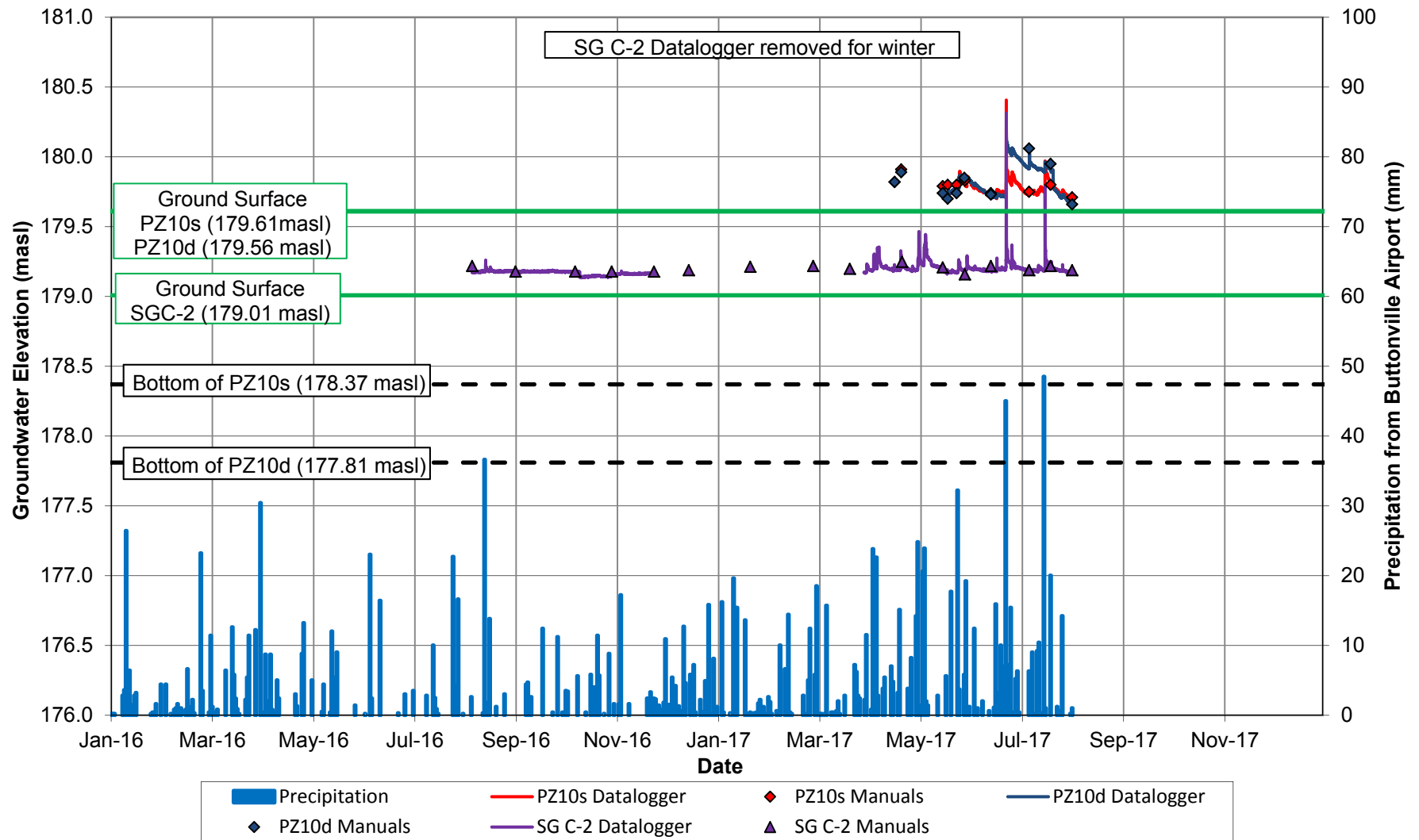
# Groundwater Elevations PZ8s/d + SG8



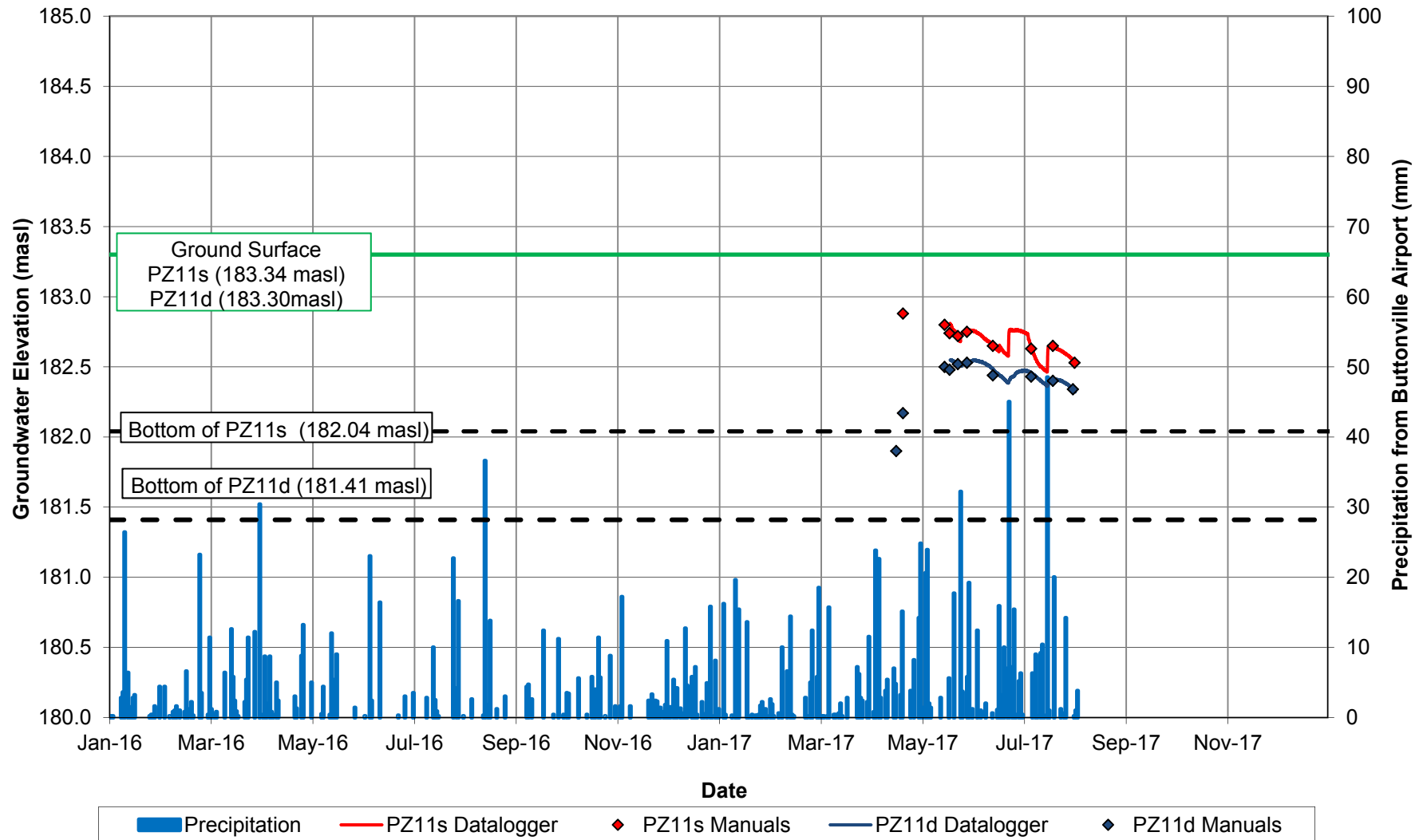
# Groundwater Elevations PZ9s/d + SG9



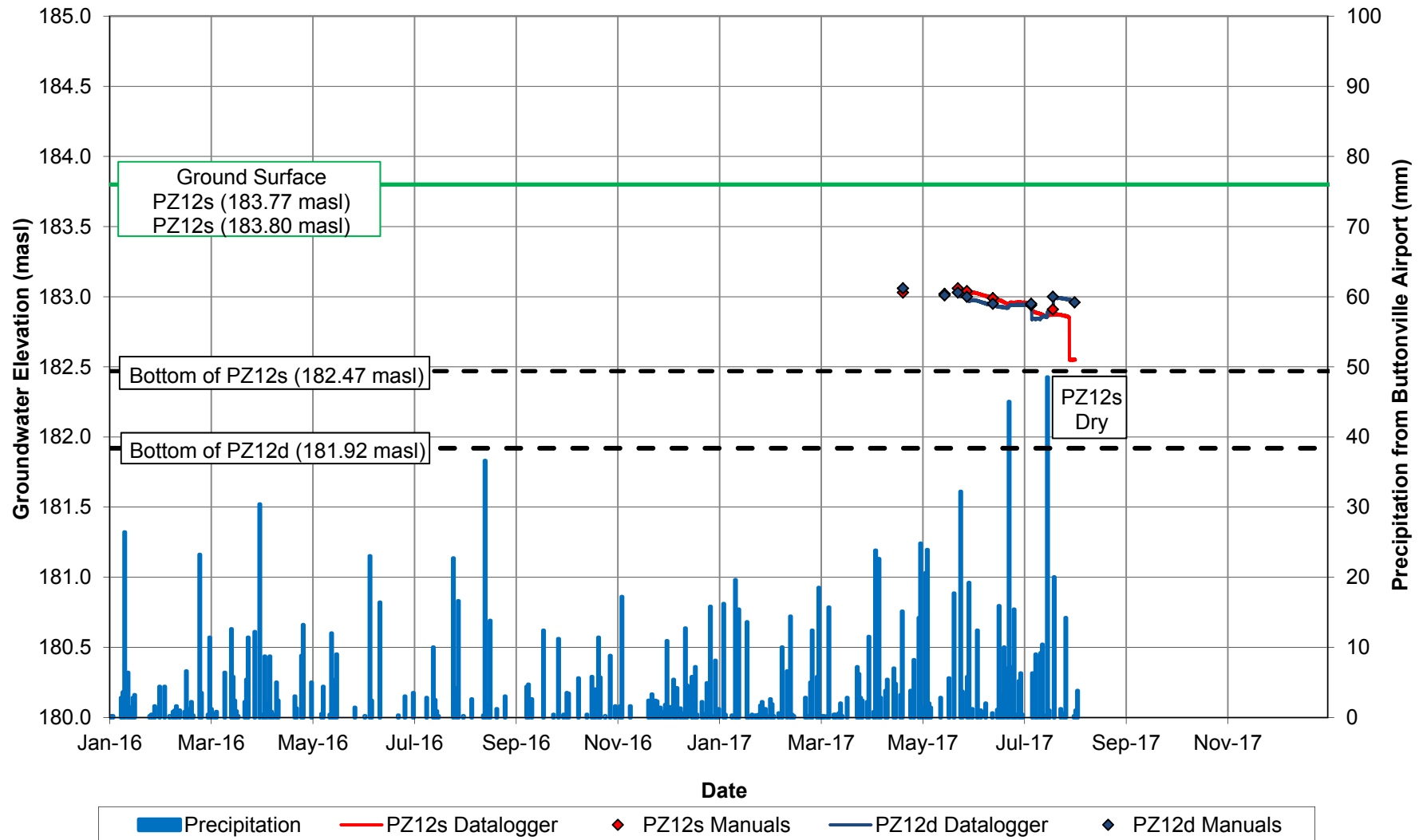
# **Surface Water Elevations PZ10s/d + SG C-2**



# Groundwater Elevations PZ11s/d



# Groundwater Elevations PZ12s/d





# BURNSIDE

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## Appendix F

### Surface Water Data



**Table F-1  
Surface Water Elevations**

| Staff Gauge Number  | SG1                      | SG2                      | SG3                      | SG4                      | SG5                      | SG6                      |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Ground Elev. (masl) | 181.42                   | 180.55                   | 180.00                   | 181.01                   | 184.24                   | 174.71                   |
| Date                | Water Level Elev. (masl) | Water Level Elev. (masl) | Water Level Elev. (masl) | Water Level Elev. (masl) | Water Level Elev. (masl) | Water Level Elev. (masl) |
| 23-Mar-16           | 181.83                   | 180.95                   | 180.25                   | -                        | 184.35                   | 175.14                   |
| 29-Mar-16           | 181.86                   | 181.03                   | 180.46                   | -                        | 184.35                   | 175.20                   |
| 22-Apr-16           | 181.84                   | 180.88                   | 180.23                   | -                        | 184.36                   | 175.17                   |
| 20-May-16           | 181.82                   | 180.88                   | 180.18                   | -                        | 184.31                   | 175.01                   |
| 29-Jun-16           | 181.73                   | 180.78                   | 180.14                   | -                        | dry                      | 174.77                   |
| 29-Jul-16           | 181.82                   | 180.69                   | 180.17                   | -                        | dry                      | dry                      |
| 5-Aug-16            | -                        | -                        | -                        | dry                      | -                        | -                        |
| 31-Aug-16           | 181.76                   | 180.69                   | 180.12                   | dry                      | dry                      | dry                      |
| 6-Oct-16            | 181.76                   | 180.64                   | 180.14                   | dry                      | dry                      | dry                      |
| 28-Oct-16           | 181.82                   | 180.64                   | 180.22                   | dry                      | 184.34                   | 174.75                   |
| 23-Nov-16           | 181.80                   | 180.68                   | 180.19                   | dry                      | 184.33                   | 174.80                   |
| 14-Dec-16           | 181.84                   | 180.80                   | 180.48                   | 181.06                   | dry                      | 174.88                   |
| 20-Jan-17           | frozen                   | frozen                   | frozen                   | 181.23                   | 184.34                   | frozen                   |
| 27-Feb-17           | frozen                   | frozen                   | frozen                   | 181.23                   | 184.35                   | frozen                   |
| 21-Mar-17           | frozen                   | frozen                   | frozen                   | 181.22                   | 184.35                   | frozen                   |
| 21-Apr-17           | 182.09                   | 181.20                   | 180.45                   | 181.27                   | 184.35                   | 175.24                   |
| 16-May-17           | 181.86                   | 180.79                   | 180.24                   | 181.25                   | 184.34                   | 175.21                   |
| 2-Aug-17            | 181.82                   | 180.80                   | 180.15                   | 181.24                   | dry                      | 175.08                   |

**Table F-1  
Surface Water Elevations**

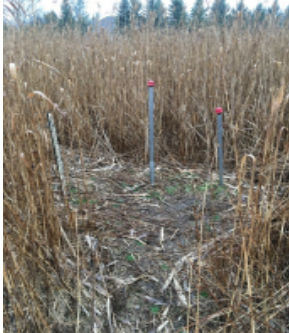
| Staff Gauge Number  | SG7                      | SG8                      | SG9                      | SG C-1                   | SG C-2                   |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Ground Elev. (masl) | 176.51                   | 187.58                   | 188.88                   | 180.39                   | 179.06                   |
| Date                | Water Level Elev. (masl) | Water Level Elev. (masl) | Water Level Elev. (masl) | Water Level Elev. (masl) | Water Level Elev. (masl) |
| 23-Mar-16           | 176.81                   | -                        | -                        | -                        | -                        |
| 29-Mar-16           | 177.05                   | -                        | -                        | -                        | -                        |
| 22-Apr-16           | 176.81                   | -                        | -                        | -                        | -                        |
| 20-May-16           | 176.76                   | -                        | -                        | -                        | -                        |
| 29-Jun-16           | 176.68                   | -                        | -                        | -                        | -                        |
| 29-Jul-16           | 176.81                   | -                        | -                        | -                        | -                        |
| 5-Aug-16            | -                        | dry                      | dry                      | 180.65                   | 179.27                   |
| 31-Aug-16           | 176.66                   | dry                      | dry                      | 180.66                   | 179.23                   |
| 6-Oct-16            | 176.68                   | dry                      | dry                      | 180.67                   | 179.23                   |
| 28-Oct-16           | 176.74                   | dry                      | dry                      | 180.68                   | 179.23                   |
| 23-Nov-16           | 176.73                   | dry                      | dry                      | 180.68                   | 179.23                   |
| 14-Dec-16           | 176.91                   | dry                      | dry                      | 180.70                   | 179.24                   |
| 20-Jan-17           | 176.93                   | dry                      | dry                      | 180.69                   | 179.27                   |
| 27-Feb-17           | 176.94                   | dry                      | dry                      | 180.69                   | 179.27                   |
| 21-Mar-17           | 176.80                   | 187.63                   | dry                      | 180.70                   | 179.25                   |
| 21-Apr-17           | 177.11                   | dry                      | dry                      | 180.69                   | 179.30                   |
| 16-May-17           | 176.87                   | 187.63                   | dry                      | 180.68                   | 179.26                   |
| 2-Aug-17            | 176.80                   | 187.59                   | dry                      | 180.69                   | 179.24                   |

**Table F-2  
Surface Water Flows**

| Date      | Days Since<br>Precipitation: | Surface Water Station |        |                  |                  |                  |         |     |     |
|-----------|------------------------------|-----------------------|--------|------------------|------------------|------------------|---------|-----|-----|
|           |                              | SS1                   | SS2    | SS3              | SS4              | SS5              | SS6     | SS7 | SS8 |
| 22-Apr-16 | 1                            | 387                   | 375    | 437              | 271              | 234              | -       | -   | -   |
| 20-May-16 | 4                            | 228                   | 238    | 216              | 131              | C.N.A            | -       | -   | -   |
| 29-Jun-16 | 3                            | 89                    | 82     | 92               | 43               | 33               | -       | -   | -   |
| 29-Jul-16 | 1                            | 168                   | 132    | 174              | 181              | 111              | -       | -   | -   |
| 31-Aug-16 | 6                            | 64                    | 42     | 64               | 30               | 18               | -       | -   | -   |
| 6-Oct-16  | 4                            | 95                    | 83     | 76               | 40               | 19               | -       | -   | -   |
| 28-Oct-16 | 1                            | 155                   | 147    | 156              | 65               | 83               | -       | -   | -   |
| 23-Nov-16 | 1                            | 106                   | 142    | 132              | 60               | 67               | -       | -   | -   |
| 14-Dec-16 | 2                            | Frozen                | Frozen | Partially Frozen | Partially Frozen | Partially Frozen | -       | -   | -   |
| 20-Jan-17 | 2                            | C.N.A                 | C.N.A  | 529              | C.N.A            | 337              | -       | -   | -   |
| 27-Feb-17 | 2                            | C.N.A                 | C.N.A  | 1005             | C.N.A            | 729              | -       | -   | -   |
| 21-Mar-17 | 3                            | 351                   | 238    | 346              | 231              | 186              | -       | -   | -   |
| 17-Apr-17 | 0                            | -                     | -      | -                | -                | -                | 3.3     |     |     |
| 21-Apr-17 | 1                            | C.N.A                 | C.N.A  | C.N.A            | C.N.A            | C.N.A            | 3.1     | 14  | 13  |
| 16-May-17 | 3                            | 366                   | 234    | 343              | 307              | 199              | No Flow | 2   | 2   |
| 2-Aug-17  | 1                            | 119                   | 93     | 166              | 81               | 23               | No Flow | 1   | 4   |

Flow measurements are in L/s  
"C.N.A." - Could Not Access

**Table F-3A**  
**W-YD1 Hydroperiod Monitoring**

| 2017  |                        |                                    | 29-Mar-17                                                                                     |                            | 4-Apr-17                                                                             |                            |
|-------|------------------------|------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                              |                            | Monitored By: MM                                                                     |                            |
|       |                        |                                    | Days since previous precipitation event: 2                                                    |                            | Days since previous precipitation event: 0                                           |                            |
|       |                        |                                    | Water Level Depth                                                                             | Estimated Elevation (masl) | Water Level Depth                                                                    | Estimated Elevation (masl) |
| W-YD1 | PZs                    | PZ9s (masl)                        | 0.14                                                                                          | 188.81                     | 0.15                                                                                 | 188.80                     |
|       |                        | PZ9d (masl)                        | 0.09                                                                                          | 188.77                     | 0.07                                                                                 | 188.79                     |
|       | SG                     | SG9 (m)                            | Dry                                                                                           |                            | Dry                                                                                  |                            |
|       | Wetland                | Approximate Length (m)             | 10                                                                                            |                            | 10                                                                                   |                            |
|       |                        | Approximate Width (m)              | 10                                                                                            |                            | 10                                                                                   |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 100                                                                                           |                            | 100                                                                                  |                            |
|       |                        | Approximate Maximum Depth (m)      | 0                                                                                             |                            | 0                                                                                    |                            |
|       | Time                   |                                    | 1:00 PM                                                                                       |                            | 8:30 AM                                                                              |                            |
|       | Comments               |                                    | Ground is slightly saturated and damp under dense vegetation, otherwise it is relatively dry. |                            | Ground saturation has increased between monitoring rounds.                           |                            |
|       | Representative Picture |                                    |            |                            |  |                            |

**Table F-3A**  
**W-YD1 Hydroperiod Monitoring**

| 2017  |                        |                                    | 13-Apr-17                                                                           |                            | 21-Apr-17                                                                            |                            |
|-------|------------------------|------------------------------------|-------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                    |                            | Monitored By: MM                                                                     |                            |
|       |                        |                                    | Days since previous precipitation event: 2                                          |                            | Days since previous precipitation event: 1                                           |                            |
|       |                        |                                    | Water Level Depth                                                                   | Estimated Elevation (masl) | Water Level Depth                                                                    | Estimated Elevation (masl) |
| W-YD1 | PZs                    | PZ9s (masl)                        | 0.16                                                                                | 188.79                     | 0.12                                                                                 | 188.83                     |
|       |                        | PZ9d (masl)                        | 0.15                                                                                | 188.71                     | 0.01                                                                                 | 188.85                     |
|       | SG                     | SG9 (m)                            | Dry                                                                                 |                            | Dry                                                                                  |                            |
|       | Wetland                | Approximate Length (m)             | 7                                                                                   |                            | 7                                                                                    |                            |
|       |                        | Approximate Width (m)              | 7                                                                                   |                            | 7                                                                                    |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 49                                                                                  |                            | 49                                                                                   |                            |
|       |                        | Approximate Maximum Depth (m)      | 0                                                                                   |                            | 0                                                                                    |                            |
|       | Time                   |                                    | 12:05 PM                                                                            |                            | 10:05 AM                                                                             |                            |
|       | Comments               |                                    | Area of saturation has decreased, ground remains damp under vegetation.             |                            | Ground saturation increased between monitoring rounds.                               |                            |
|       | Representative Picture |                                    |  |                            |  |                            |

**Table F-3A  
W-YD1 Hydroperiod Monitoring**

| 2017  |                        |                                    | 10-May-17                                                                           |                            | 16-May-17                                                                            |                            |
|-------|------------------------|------------------------------------|-------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                    |                            | Monitored By: MM                                                                     |                            |
|       |                        |                                    | Days since previous precipitation event: 3                                          |                            | Days since previous precipitation event: 3                                           |                            |
|       |                        |                                    | Water Level Depth                                                                   | Estimated Elevation (masl) | Water Level Depth                                                                    | Estimated Elevation (masl) |
| W-YD1 | PZs                    | PZ9s (masl)                        | -                                                                                   | -                          | 0.24                                                                                 | 188.71                     |
|       |                        | PZ9d (masl)                        | -                                                                                   | -                          | 0.22                                                                                 | 188.64                     |
|       | SG                     | SG9 (m)                            | Dry                                                                                 |                            | Dry                                                                                  |                            |
|       | Wetland                | Approximate Length (m)             | 1.5                                                                                 |                            | 1.5                                                                                  |                            |
|       |                        | Approximate Width (m)              | 2.0                                                                                 |                            | 2.0                                                                                  |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 3                                                                                   |                            | 3                                                                                    |                            |
|       |                        | Approximate Maximum Depth (m)      | 0                                                                                   |                            | 0                                                                                    |                            |
|       | Time                   |                                    | 11:47 AM                                                                            |                            | 8:55 AM                                                                              |                            |
|       | Comments               |                                    | Ground saturation decreased between monitoring rounds.                              |                            | No significant change since previous monitoring round.                               |                            |
|       | Representative Picture |                                    |  |                            |  |                            |

**Table F-3A**  
**W-YD1 Hydroperiod Monitoring**

| 2017  |                        |                                    | 24-May-17                                                                           |                            |
|-------|------------------------|------------------------------------|-------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                    |                            |
|       |                        |                                    | Days since previous precipitation event: 3                                          |                            |
|       |                        |                                    | Water Level Depth                                                                   | Estimated Elevation (masl) |
| W-YD1 | PZs                    | PZ9s (masl)                        | 0.26                                                                                | 188.69                     |
|       |                        | PZ9d (masl)                        | 0.24                                                                                | 188.62                     |
|       | SG                     | SG9 (m)                            | Dry                                                                                 |                            |
|       | Wetland                | Approximate Length (m)             | 1                                                                                   |                            |
|       |                        | Approximate Width (m)              | 1.0                                                                                 |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 1                                                                                   |                            |
|       |                        | Approximate Maximum Depth (m)      | 0                                                                                   |                            |
|       | Time                   |                                    | 10:35 AM                                                                            |                            |
|       | Comments               |                                    | Saturation decreased and the ground has dried. No further monitoring required.      |                            |
|       | Representative Picture |                                    |  |                            |

**Table F-3B**  
**W-YD2 Hydroperiod Monitoring**

| 2017  |                        |                                    | 29-Mar-17                                                                                                                                                                                                                                                                                          |                            | 4-Apr-17                                                                                                                                |                            |
|-------|------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                                                                                                                                                                                                   |                            | Monitored By: MM                                                                                                                        |                            |
|       |                        |                                    | Days since previous precipitation event: 2                                                                                                                                                                                                                                                         |                            | Days since previous precipitation event: 0                                                                                              |                            |
|       |                        |                                    | Water Level Depth                                                                                                                                                                                                                                                                                  | Estimated Elevation (masl) | Water Level Depth                                                                                                                       | Estimated Elevation (masl) |
| W-YD2 | PZs                    | PZ4s (masl)                        | 0.18                                                                                                                                                                                                                                                                                               | 181.25                     | 0.12                                                                                                                                    | 181.31                     |
|       |                        | PZ4d (masl)                        | 0.37                                                                                                                                                                                                                                                                                               | 181.09                     | 0.29                                                                                                                                    | 181.17                     |
|       | SG                     | SG4 (m)                            | 0.20                                                                                                                                                                                                                                                                                               | 181.21                     | 0.28                                                                                                                                    | 181.29                     |
|       | Wetland                | Approximate Length (m)             | 25                                                                                                                                                                                                                                                                                                 |                            | 25                                                                                                                                      |                            |
|       |                        | Approximate Width (m)              | 25                                                                                                                                                                                                                                                                                                 |                            | 25                                                                                                                                      |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 625                                                                                                                                                                                                                                                                                                |                            | 625                                                                                                                                     |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.25                                                                                                                                                                                                                                                                                               |                            | 0.28                                                                                                                                    |                            |
|       | Flow                   | Observed Flow                      | Standing Water                                                                                                                                                                                                                                                                                     |                            | Flowing                                                                                                                                 |                            |
|       |                        | Creek Width (m)                    | 1.8                                                                                                                                                                                                                                                                                                |                            | 1.15                                                                                                                                    |                            |
|       |                        | Creek Depth (m)                    | 0.25                                                                                                                                                                                                                                                                                               |                            | 0.28                                                                                                                                    |                            |
|       |                        | Estimated Velocity (m/s)           | 0                                                                                                                                                                                                                                                                                                  |                            | -                                                                                                                                       |                            |
|       |                        | Estimated Flow (L/s)               | 0                                                                                                                                                                                                                                                                                                  |                            | -                                                                                                                                       |                            |
|       |                        | Measured Flow (L/s)                | -                                                                                                                                                                                                                                                                                                  |                            | 17                                                                                                                                      |                            |
|       | Water Quality          | Salinity (g/L or ppt)              | -                                                                                                                                                                                                                                                                                                  |                            | 420                                                                                                                                     |                            |
|       |                        | Dissolved Oxygen                   | -                                                                                                                                                                                                                                                                                                  |                            | N/A                                                                                                                                     |                            |
|       |                        | Temperature (°C)                   | -                                                                                                                                                                                                                                                                                                  |                            | 6.2                                                                                                                                     |                            |
|       |                        | pH                                 | -                                                                                                                                                                                                                                                                                                  |                            | 8.2                                                                                                                                     |                            |
|       |                        | Conductivity (µs/cm)               | -                                                                                                                                                                                                                                                                                                  |                            | 906                                                                                                                                     |                            |
|       |                        | Total Dissolved Solids (mg/L)      | -                                                                                                                                                                                                                                                                                                  |                            | 694                                                                                                                                     |                            |
|       |                        | Total Suspended Solids (mg/L)      | -                                                                                                                                                                                                                                                                                                  |                            | N/A                                                                                                                                     |                            |
|       | Time                   |                                    | 1:45 PM                                                                                                                                                                                                                                                                                            |                            | 9:45 AM                                                                                                                                 |                            |
|       | Comments               |                                    | Standing water pooled in defined channel that crosses the wetland, connecting drainage input from the north east and west, and outflowing at the south west. The standing water has algae growth, as well as an oily sheet located at the staff gage. Ground surrounding the channel is saturated. |                            | Ground saturation, and volume of water increased between monitoring rounds. Standing water pools are scattered across vegetation layer. |                            |
|       | Representative Picture |                                    |                                                                                                                                                                                                                |                            |                                                    |                            |



**Table F-3B  
W-YD2 Hydroperiod Monitoring**

| 2017  |                        |                                    | 13-Apr-17                                                                                                                                                                                                                                                           |                            | 21-Apr-17                                                                             |                            |
|-------|------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                                                                                                                                                                    |                            | Monitored By: MM                                                                      |                            |
|       |                        |                                    | Days since previous precipitation event: 2                                                                                                                                                                                                                          |                            | Days since previous precipitation event: 1                                            |                            |
|       |                        |                                    | Water Level Depth                                                                                                                                                                                                                                                   | Estimated Elevation (masl) | Water Level Depth                                                                     | Estimated Elevation (masl) |
| W-YD2 | PZs                    | PZ4s (masl)                        | 0.12                                                                                                                                                                                                                                                                | 181.31                     | 0.12                                                                                  | 181.31                     |
|       |                        | PZ4d (masl)                        | 0.25                                                                                                                                                                                                                                                                | 181.21                     | 0.24                                                                                  | 181.22                     |
|       | SG                     | SG4 (m)                            | 0.24                                                                                                                                                                                                                                                                | 181.25                     | 0.26                                                                                  | 181.27                     |
|       | Wetland                | Approximate Length (m)             | 20                                                                                                                                                                                                                                                                  |                            | 20                                                                                    |                            |
|       |                        | Approximate Width (m)              | 15                                                                                                                                                                                                                                                                  |                            | 15                                                                                    |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 300                                                                                                                                                                                                                                                                 |                            | 300                                                                                   |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.33                                                                                                                                                                                                                                                                |                            | 0.27                                                                                  |                            |
|       | Flow                   | Observed Flow                      | Minimal Flow                                                                                                                                                                                                                                                        |                            | Minimal Flow                                                                          |                            |
|       |                        | Creek Width (m)                    | 2.2                                                                                                                                                                                                                                                                 |                            | 2.5                                                                                   |                            |
|       |                        | Creek Depth (m)                    | 0.33                                                                                                                                                                                                                                                                |                            | 0.27                                                                                  |                            |
|       |                        | Estimated Velocity (m/s)           | 0.05                                                                                                                                                                                                                                                                |                            | 0.05                                                                                  |                            |
|       |                        | Estimated Flow (L/s)               | 0.04                                                                                                                                                                                                                                                                |                            | 0.03                                                                                  |                            |
|       |                        | Measured Flow (L/s)                | -                                                                                                                                                                                                                                                                   |                            | -                                                                                     |                            |
|       | Water Quality          | Salinity (g/L or ppt)              | -                                                                                                                                                                                                                                                                   |                            | -                                                                                     |                            |
|       |                        | Dissolved Oxygen                   | -                                                                                                                                                                                                                                                                   |                            | -                                                                                     |                            |
|       |                        | Temperature (°C)                   | -                                                                                                                                                                                                                                                                   |                            | -                                                                                     |                            |
|       |                        | pH                                 | -                                                                                                                                                                                                                                                                   |                            | -                                                                                     |                            |
|       |                        | Conductivity (µs/cm)               | -                                                                                                                                                                                                                                                                   |                            | -                                                                                     |                            |
|       |                        | Total Dissolved Solids (mg/L)      | -                                                                                                                                                                                                                                                                   |                            | -                                                                                     |                            |
|       |                        | Total Suspended Solids (mg/L)      | -                                                                                                                                                                                                                                                                   |                            | -                                                                                     |                            |
|       | Time                   |                                    | 12:20 PM                                                                                                                                                                                                                                                            |                            | 12:20 PM                                                                              |                            |
|       | Comments               |                                    | Wetland saturation has decreased between monitoring rounds. Pools of standing water on top of vegetation has dried. The banks on either side of the creek remain saturated up to 2m. The creek is minimal flow to standing water, with algae growth on the surface. |                            | No significant change since previous monitoring round.                                |                            |
|       | Representative Picture |                                    |                                                                                                                                                                                 |                            |  |                            |

**Table F-3B  
W-YD2 Hydroperiod Monitoring**

| 2017  |                        |                                    | 10-May-17                                                                                                                  |                            | 16-May-17                                                                                                           |                            |
|-------|------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                           |                            | Monitored By: MM                                                                                                    |                            |
|       |                        |                                    | Days since previous precipitation event: 3                                                                                 |                            | Days since previous precipitation event: 3                                                                          |                            |
|       |                        |                                    | Water Level Depth                                                                                                          | Estimated Elevation (masl) | Water Level Depth                                                                                                   | Estimated Elevation (masl) |
| W-YD2 | PZs                    | PZ4s (masl)                        | 0.11                                                                                                                       | 181.32                     | 0.12                                                                                                                | 181.31                     |
|       |                        | PZ4d (masl)                        | 0.19                                                                                                                       | 181.27                     | 0.19                                                                                                                | 181.27                     |
|       | SG                     | SG4 (m)                            | 0.28                                                                                                                       | 181.29                     | 0.24                                                                                                                | 181.25                     |
|       | Wetland                | Approximate Length (m)             | 20                                                                                                                         |                            | 20                                                                                                                  |                            |
|       |                        | Approximate Width (m)              | 15                                                                                                                         |                            | 15                                                                                                                  |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 300                                                                                                                        |                            | 300                                                                                                                 |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.27                                                                                                                       |                            | 0.26                                                                                                                |                            |
|       | Flow                   | Observed Flow                      | Minimal Flow                                                                                                               |                            | Minimal Flow                                                                                                        |                            |
|       |                        | Creek Width (m)                    | 2.38                                                                                                                       |                            | 0.87                                                                                                                |                            |
|       |                        | Creek Depth (m)                    | 0.31                                                                                                                       |                            | 0.26                                                                                                                |                            |
|       |                        | Estimated Velocity (m/s)           | 0.05                                                                                                                       |                            | 0.05                                                                                                                |                            |
|       |                        | Estimated Flow (L/s)               | 0.04                                                                                                                       |                            | 0.01                                                                                                                |                            |
|       |                        | Measured Flow (L/s)                | -                                                                                                                          |                            | -                                                                                                                   |                            |
|       | Water Quality          | Salinity (g/L or ppt)              | -                                                                                                                          |                            | -                                                                                                                   |                            |
|       |                        | Dissolved Oxygen                   | -                                                                                                                          |                            | -                                                                                                                   |                            |
|       |                        | Temperature (°C)                   | -                                                                                                                          |                            | -                                                                                                                   |                            |
|       |                        | pH                                 | -                                                                                                                          |                            | -                                                                                                                   |                            |
|       |                        | Conductivity (µs/cm)               | -                                                                                                                          |                            | -                                                                                                                   |                            |
|       |                        | Total Dissolved Solids (mg/L)      | -                                                                                                                          |                            | -                                                                                                                   |                            |
|       |                        | Total Suspended Solids (mg/L)      | -                                                                                                                          |                            | -                                                                                                                   |                            |
|       | Time                   |                                    | 12:10 PM                                                                                                                   |                            | 11:25 AM                                                                                                            |                            |
|       | Comments               |                                    | Volume of water increased between monitoring rounds. Banks remain saturated and algae growth is developing in the channel. |                            | Channel width and volume decreased between monitoring rounds. Ground saturation under vegetation is slightly drier. |                            |
|       | Representative Picture |                                    |                                        |                            |                                |                            |

**Table F-3B  
W-YD2 Hydroperiod Monitoring**

| 2017  |                        |                                    | 24-May-17                                                                                                                        |                            | 31-May-17                                                                             |                            |
|-------|------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                                 |                            | Monitored By: MM                                                                      |                            |
|       |                        |                                    | Days since previous precipitation event: 3                                                                                       |                            | Days since previous precipitation event: 1                                            |                            |
|       |                        |                                    | Water Level Depth                                                                                                                | Estimated Elevation (masl) | Water Level Depth                                                                     | Estimated Elevation (masl) |
| W-YD2 | PZs                    | PZ4s (masl)                        | 0.13                                                                                                                             | 181.30                     | 0.11                                                                                  | 181.32                     |
|       |                        | PZ4d (masl)                        | 0.19                                                                                                                             | 181.27                     | 0.18                                                                                  | 181.28                     |
|       | SG                     | SG4 (m)                            | 0.21                                                                                                                             | 181.22                     | 0.24                                                                                  | 181.25                     |
|       | Wetland                | Approximate Length (m)             | 15                                                                                                                               |                            | 15                                                                                    |                            |
|       |                        | Approximate Width (m)              | 15                                                                                                                               |                            | 15                                                                                    |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 225                                                                                                                              |                            | 225                                                                                   |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.21                                                                                                                             |                            | 0.28                                                                                  |                            |
|       | Flow                   | Observed Flow                      | Standing Water                                                                                                                   |                            | Standing Water                                                                        |                            |
|       |                        | Creek Width (m)                    | 1.32                                                                                                                             |                            | 1.14                                                                                  |                            |
|       |                        | Creek Depth (m)                    | 0.21                                                                                                                             |                            | 0.28                                                                                  |                            |
|       |                        | Estimated Velocity (m/s)           | -                                                                                                                                |                            | -                                                                                     |                            |
|       |                        | Estimated Flow (L/s)               | -                                                                                                                                |                            | -                                                                                     |                            |
|       |                        | Measured Flow (L/s)                | -                                                                                                                                |                            | -                                                                                     |                            |
|       | Water Quality          | Salinity (g/L or ppt)              | -                                                                                                                                |                            | -                                                                                     |                            |
|       |                        | Dissolved Oxygen                   | -                                                                                                                                |                            | -                                                                                     |                            |
|       |                        | Temperature (°C)                   | -                                                                                                                                |                            | -                                                                                     |                            |
|       |                        | pH                                 | -                                                                                                                                |                            | -                                                                                     |                            |
|       |                        | Conductivity (µs/cm)               | -                                                                                                                                |                            | -                                                                                     |                            |
|       |                        | Total Dissolved Solids (mg/L)      | -                                                                                                                                |                            | -                                                                                     |                            |
|       |                        | Total Suspended Solids (mg/L)      | -                                                                                                                                |                            | -                                                                                     |                            |
|       | Time                   |                                    | 9:55 AM                                                                                                                          |                            | 9:50 AM                                                                               |                            |
|       | Comments               |                                    | Volume of water decreased between monitoring rounds. Ground saturation along the banks, and center of the feature has decreased. |                            | Ground saturation and volume of water in channel increased between monitoring rounds. |                            |
|       | Representative Picture |                                    |                                              |                            |  |                            |

**Table F-3B  
W-YD2 Hydroperiod Monitoring**

| 2017  |                        |                                    | 14-Jun-17                                                                                                                                                         |                            | 7-Jul-17                                                                              |                            |
|-------|------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                                                                  |                            | Monitored By: MM                                                                      |                            |
|       |                        |                                    | Days since previous precipitation event: 1                                                                                                                        |                            | Days since previous precipitation event: 6                                            |                            |
|       |                        |                                    | Water Level Depth                                                                                                                                                 | Estimated Elevation (masl) | Water Level Depth                                                                     | Estimated Elevation (masl) |
| W-YD2 | PZs                    | PZ4s (masl)                        | 0.13                                                                                                                                                              | 181.30                     | 0.12                                                                                  | 181.31                     |
|       |                        | PZ4d (masl)                        | 0.19                                                                                                                                                              | 181.27                     | 0.14                                                                                  | 181.32                     |
|       | SG                     | SG4 (m)                            | 0.23                                                                                                                                                              | 181.24                     | 0.23                                                                                  | 181.24                     |
|       | Wetland                | Approximate Length (m)             | 15                                                                                                                                                                |                            | 15                                                                                    |                            |
|       |                        | Approximate Width (m)              | 15                                                                                                                                                                |                            | 10                                                                                    |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 225                                                                                                                                                               |                            | 150                                                                                   |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.26                                                                                                                                                              |                            | 0.25                                                                                  |                            |
|       | Flow                   | Observed Flow                      | Standing Water                                                                                                                                                    |                            | Standing Water                                                                        |                            |
|       |                        | Creek Width (m)                    | 0.98                                                                                                                                                              |                            | 0.62                                                                                  |                            |
|       |                        | Creek Depth (m)                    | 0.26                                                                                                                                                              |                            | 0.25                                                                                  |                            |
|       |                        | Estimated Velocity (m/s)           | -                                                                                                                                                                 |                            | -                                                                                     |                            |
|       |                        | Estimated Flow (L/s)               | -                                                                                                                                                                 |                            | -                                                                                     |                            |
|       |                        | Measured Flow (L/s)                | -                                                                                                                                                                 |                            | -                                                                                     |                            |
|       | Water Quality          | Salinity (g/L or ppt)              | -                                                                                                                                                                 |                            | -                                                                                     |                            |
|       |                        | Dissolved Oxygen                   | -                                                                                                                                                                 |                            | -                                                                                     |                            |
|       |                        | Temperature (°C)                   | -                                                                                                                                                                 |                            | -                                                                                     |                            |
|       |                        | pH                                 | -                                                                                                                                                                 |                            | -                                                                                     |                            |
|       |                        | Conductivity (µs/cm)               | -                                                                                                                                                                 |                            | -                                                                                     |                            |
|       |                        | Total Dissolved Solids (mg/L)      | -                                                                                                                                                                 |                            | -                                                                                     |                            |
|       |                        | Total Suspended Solids (mg/L)      | -                                                                                                                                                                 |                            | -                                                                                     |                            |
|       | Time                   |                                    | 8:15 AM                                                                                                                                                           |                            | 8:00 AM                                                                               |                            |
|       | Comments               |                                    | Volume of water decreased between monitoring rounds. Ground saturation along the banks, and center of the feature has decreased. Oil sheen along the streambanks. |                            | Volume of water decreased between monitoring rounds.                                  |                            |
|       | Representative Picture |                                    |                                                                               |                            |  |                            |

**Table F-3B  
W-YD2 Hydroperiod Monitoring**

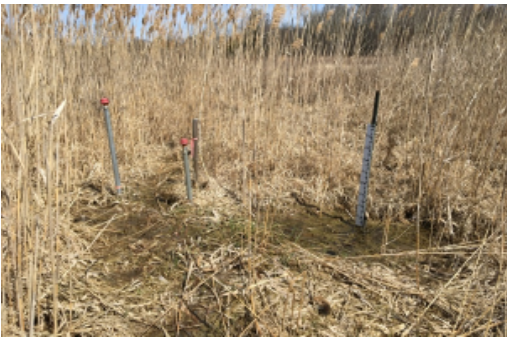
| 2017  |                        |                                    | 20-Jul-17                                                                            |                            |
|-------|------------------------|------------------------------------|--------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                     |                            |
|       |                        |                                    | Days since previous precipitation event: 3                                           |                            |
|       |                        |                                    | Water Level Depth                                                                    | Estimated Elevation (masl) |
| W-YD2 | PZs                    | PZ4s (masl)                        | 0.12                                                                                 | 181.31                     |
|       |                        | PZ4d (masl)                        | 0.14                                                                                 | 181.32                     |
|       | SG                     | SG4 (m)                            | 0.24                                                                                 | 181.25                     |
|       | Wetland                | Approximate Length (m)             | 10                                                                                   |                            |
|       |                        | Approximate Width (m)              | 10                                                                                   |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 100                                                                                  |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.37                                                                                 |                            |
|       | Flow                   | Observed Flow                      | Minimal Flow                                                                         |                            |
|       |                        | Creek Width (m)                    | 1.27                                                                                 |                            |
|       |                        | Creek Depth (m)                    | 0.37                                                                                 |                            |
|       |                        | Estimated Velocity (m/s)           | -                                                                                    |                            |
|       |                        | Estimated Flow (L/s)               | -                                                                                    |                            |
|       |                        | Measured Flow (L/s)                | -                                                                                    |                            |
|       | Water Quality          | Salinity (g/L or ppt)              | -                                                                                    |                            |
|       |                        | Dissolved Oxygen                   | -                                                                                    |                            |
|       |                        | Temperature (°C)                   | -                                                                                    |                            |
|       |                        | pH                                 | -                                                                                    |                            |
|       |                        | Conductivity (µs/cm)               | -                                                                                    |                            |
|       |                        | Total Dissolved Solids (mg/L)      | -                                                                                    |                            |
|       |                        | Total Suspended Solids (mg/L)      | -                                                                                    |                            |
|       | Time                   |                                    | 7:30 AM                                                                              |                            |
|       | Comments               |                                    | Channel width and volume increased. Surrounding ground and banks are less saturated. |                            |
|       | Representative Picture |                                    |  |                            |

**Table F-3C**  
**W-YD3 Hydroperiod Monitoring**

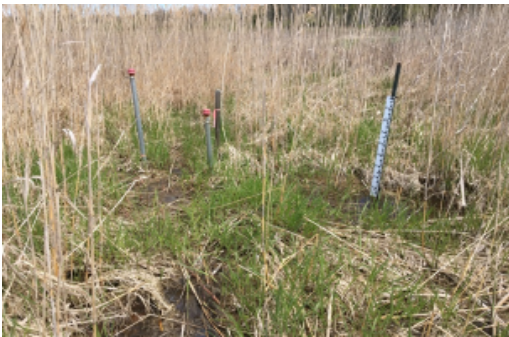
| 2017  |                        |                                    | 29-Mar-17                                                                                                                                                                          |                            | 4-Apr-17                                                                                                                                                                                                                                    |                            |
|-------|------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                                                                                   |                            | Monitored By: MM                                                                                                                                                                                                                            |                            |
|       |                        |                                    | Days since previous precipitation event: 2                                                                                                                                         |                            | Days since previous precipitation event: 0                                                                                                                                                                                                  |                            |
|       |                        |                                    | Water Level Depth                                                                                                                                                                  | Estimated Elevation (masl) | Water Level Depth                                                                                                                                                                                                                           | Estimated Elevation (masl) |
| W-YD3 | PZs                    | PZ5s (masl)                        | 0.22                                                                                                                                                                               | 184.17                     | 0.14                                                                                                                                                                                                                                        | 184.25                     |
|       |                        | PZ5d (masl)                        | 0.82                                                                                                                                                                               | 183.56                     | 0.01                                                                                                                                                                                                                                        | 184.37                     |
|       | SG                     | SG5 (m)                            | 0.10                                                                                                                                                                               | 184.34                     | 0.11                                                                                                                                                                                                                                        | 184.35                     |
|       | Wetland                | Approximate Length (m)             | 30                                                                                                                                                                                 |                            | 30                                                                                                                                                                                                                                          |                            |
|       |                        | Approximate Width (m)              | 30                                                                                                                                                                                 |                            | 30                                                                                                                                                                                                                                          |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 900                                                                                                                                                                                |                            | 900                                                                                                                                                                                                                                         |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.08                                                                                                                                                                               |                            | 0.12                                                                                                                                                                                                                                        |                            |
|       | Time                   |                                    | 1:30 PM                                                                                                                                                                            |                            | 11:35 AM                                                                                                                                                                                                                                    |                            |
|       | Comments               |                                    | The ground surrounding the PZ and SG is heavily saturated, with small pools of standing water throughout (1m <sup>2</sup> and 0.04m deep). Water is clear, with some algae growth. |                            | Ground saturation, quantity and volume of standing water pools increased between monitoring rounds. The pooled area encompasses PZ's and SG. Difficult to estimate the approximate length of the entire wetland as the vegetation is dense. |                            |
|       | Representative Picture |                                    |                                                                                                 |                            |                                                                                                                                                         |                            |



**Table F-3C**  
**W-YD3 Hydroperiod Monitoring**

| 2017  |                        |                                    | 13-Apr-17                                                                                                                                                                                      |                            | 21-Apr-17                                                                                                                                                                               |                            |
|-------|------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                                                                                               |                            | Monitored By: MM                                                                                                                                                                        |                            |
|       |                        |                                    | Days since previous precipitation event: 2                                                                                                                                                     |                            | Days since previous precipitation event: 1                                                                                                                                              |                            |
|       |                        |                                    | Water Level Depth                                                                                                                                                                              | Estimated Elevation (masl) | Water Level Depth                                                                                                                                                                       | Estimated Elevation (masl) |
| W-YD3 | PZs                    | PZ5s (masl)                        | 0.18                                                                                                                                                                                           | 184.21                     | 0.12                                                                                                                                                                                    | 184.27                     |
|       |                        | PZ5d (masl)                        | -0.04                                                                                                                                                                                          | 184.42                     | -0.01                                                                                                                                                                                   | 184.39                     |
|       | SG                     | SG5 (m)                            | 0.10                                                                                                                                                                                           | 184.34                     | 0.11                                                                                                                                                                                    | 184.35                     |
|       | Wetland                | Approximate Length (m)             | 20                                                                                                                                                                                             |                            | 20                                                                                                                                                                                      |                            |
|       |                        | Approximate Width (m)              | 30                                                                                                                                                                                             |                            | 30                                                                                                                                                                                      |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 600                                                                                                                                                                                            |                            | 600                                                                                                                                                                                     |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.1                                                                                                                                                                                            |                            | 0.11                                                                                                                                                                                    |                            |
|       | Time                   |                                    | 12:25 PM                                                                                                                                                                                       |                            | 12:35 PM                                                                                                                                                                                |                            |
|       | Comments               |                                    | Standing water pools decreased monitoring rounds. Clear standing water is pooled in the walking path/ ground that has been depressed. Average size of pools are 1m <sup>2</sup> and 0.1m deep. |                            | Saturation and volume of standing water has increased between monitoring rounds. One large pool encompasses the PZ's, SG and path, and is approximately 6m <sup>2</sup> and 0.11m deep. |                            |
|       | Representative Picture |                                    |                                                                                                             |                            |                                                                                                     |                            |

**Table F-3C**  
**W-YD3 Hydroperiod Monitoring**

| 2017  |                        |                                    | 10-May-17                                                                                            |                            | 16-May-17                                                                                                                                        |                            |
|-------|------------------------|------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                     |                            | Monitored By: MM                                                                                                                                 |                            |
|       |                        |                                    | Days since previous precipitation event: 3                                                           |                            | Days since previous precipitation event: 3                                                                                                       |                            |
|       |                        |                                    | Water Level Depth                                                                                    | Estimated Elevation (masl) | Water Level Depth                                                                                                                                | Estimated Elevation (masl) |
| W-YD3 | PZs                    | PZ5s (masl)                        | 0.09                                                                                                 | 184.30                     | 0.10                                                                                                                                             | 184.29                     |
|       |                        | PZ5d (masl)                        | -0.07                                                                                                | 184.45                     | -0.03                                                                                                                                            | 184.41                     |
|       | SG                     | SG5 (m)                            | 0.10                                                                                                 | 184.34                     | 0.10                                                                                                                                             | 184.34                     |
|       | Wetland                | Approximate Length (m)             | 20                                                                                                   |                            | 20                                                                                                                                               |                            |
|       |                        | Approximate Width (m)              | 30                                                                                                   |                            | 30                                                                                                                                               |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 600                                                                                                  |                            | 600                                                                                                                                              |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.11                                                                                                 |                            | 0.11                                                                                                                                             |                            |
|       | Time                   |                                    | 12:20 PM                                                                                             |                            | 11:45 AM                                                                                                                                         |                            |
|       | Comments               |                                    | No significant change between monitoring rounds. Standing water pools are clear, with an oily sheen. |                            | No significant change between monitoring rounds. One large standing water pool surround the SG is approximately 1.5m <sup>2</sup> and 0.1m deep. |                            |
|       | Representative Picture |                                    |                   |                            |                                                              |                            |



**Table F-3C**  
**W-YD3 Hydroperiod Monitoring**

| 2017  |                        |                                    | 24-May-17                                                                                            |                            | 31-May-17                                                                                              |                            |
|-------|------------------------|------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                     |                            | Monitored By: MM                                                                                       |                            |
|       |                        |                                    | Days since previous precipitation event: 3                                                           |                            | Days since previous precipitation event: 1                                                             |                            |
|       |                        |                                    | Water Level Depth                                                                                    | Estimated Elevation (masl) | Water Level Depth                                                                                      | Estimated Elevation (masl) |
| W-YD3 | PZs                    | PZ5s (masl)                        | 0.10                                                                                                 | 184.29                     | 0.09                                                                                                   | 184.30                     |
|       |                        | PZ5d (masl)                        | -0.03                                                                                                | 184.41                     | -0.08                                                                                                  | 184.46                     |
|       | SG                     | SG5 (m)                            | 0.10                                                                                                 | 184.34                     | 0.11                                                                                                   | 184.35                     |
|       | Wetland                | Approximate Length (m)             | 20                                                                                                   |                            | 20                                                                                                     |                            |
|       |                        | Approximate Width (m)              | 30                                                                                                   |                            | 30                                                                                                     |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 600                                                                                                  |                            | 600                                                                                                    |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.1                                                                                                  |                            | 0.11                                                                                                   |                            |
|       | Time                   |                                    | 10:05 AM                                                                                             |                            | 12:20 PM                                                                                               |                            |
|       | Comments               |                                    | No significant change between monitoring rounds. Standing water pools are clear, with an oily sheen. |                            | Ground saturation and quantity and volume of standing water pools increased between monitoring rounds. |                            |
|       | Representative Picture |                                    |                   |                            |                    |                            |

**Table F-3C**  
**W-YD3 Hydroperiod Monitoring**

| 2017  |                        |                                    | 14-Jun-17                                                                           |                            | 7-Jul-17                                                                             |                            |
|-------|------------------------|------------------------------------|-------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                    |                            | Monitored By: MM                                                                     |                            |
|       |                        |                                    | Days since previous precipitation event: 1                                          |                            | Days since previous precipitation event: 6                                           |                            |
|       |                        |                                    | Water Level Depth                                                                   | Estimated Elevation (masl) | Water Level Depth                                                                    | Estimated Elevation (masl) |
| W-YD3 | PZs                    | PZ5s (masl)                        | 0.09                                                                                | 184.30                     | 0.10                                                                                 | 184.29                     |
|       |                        | PZ5d (masl)                        | -0.05                                                                               | 184.43                     | 0.31                                                                                 | 184.07                     |
|       | SG                     | SG5 (m)                            | Dry                                                                                 |                            | Dry                                                                                  |                            |
|       | Wetland                | Approximate Length (m)             | 10                                                                                  |                            | 10                                                                                   |                            |
|       |                        | Approximate Width (m)              | 10                                                                                  |                            | 5                                                                                    |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 100                                                                                 |                            | 50                                                                                   |                            |
|       |                        | Approximate Maximum Depth (m)      | 0                                                                                   |                            | 0                                                                                    |                            |
|       | Time                   |                                    | 8:25 AM                                                                             |                            | 8:15 AM                                                                              |                            |
|       | Comments               |                                    | Standing water pools have dried, ground remains heavily saturated.                  |                            | Ground is dry to slightly saturated. No further monitoring is required.              |                            |
|       | Representative Picture |                                    |  |                            |  |                            |

**Table F-3D  
W-YD4 Hydroperiod Monitoring**

| 2017  |                        |                                    | 29-Mar-17                                                                                                                                                                                                                                                                      | 4-Apr-17                                                                                                                                                                                                                                              |
|-------|------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                                                                                                                                                                               | Monitored By: MM                                                                                                                                                                                                                                      |
|       |                        |                                    | Days since previous precipitation event: 2                                                                                                                                                                                                                                     | Days since previous precipitation event: 0                                                                                                                                                                                                            |
|       |                        |                                    | Water Level Depth                                                                                                                                                                                                                                                              | Estimated Elevation (masl)                                                                                                                                                                                                                            |
| W-YD4 | Flow                   | Observed Flow                      | Flowing                                                                                                                                                                                                                                                                        | Flowing                                                                                                                                                                                                                                               |
|       |                        | Creek Width (m)                    | 0.29                                                                                                                                                                                                                                                                           | 0.34                                                                                                                                                                                                                                                  |
|       |                        | Creek Depth (m)                    | 0.06                                                                                                                                                                                                                                                                           | 0.06                                                                                                                                                                                                                                                  |
|       |                        | Estimated Velocity (m/s)           | -                                                                                                                                                                                                                                                                              | -                                                                                                                                                                                                                                                     |
|       |                        | Estimated Flow (L/s)               | -                                                                                                                                                                                                                                                                              | -                                                                                                                                                                                                                                                     |
|       |                        | Measured Flow (L/s)                | 2                                                                                                                                                                                                                                                                              | 3                                                                                                                                                                                                                                                     |
|       | Water Quality          | Salinity (g/L or ppt)              | 500                                                                                                                                                                                                                                                                            | 486                                                                                                                                                                                                                                                   |
|       |                        | Dissolved Oxygen                   | -                                                                                                                                                                                                                                                                              | -                                                                                                                                                                                                                                                     |
|       |                        | Temperature (°C)                   | 9.78                                                                                                                                                                                                                                                                           | 7.3                                                                                                                                                                                                                                                   |
|       |                        | pH                                 | 8.46                                                                                                                                                                                                                                                                           | 8.35                                                                                                                                                                                                                                                  |
|       |                        | Conductivity (µs/cm)               | 1045                                                                                                                                                                                                                                                                           | 1053                                                                                                                                                                                                                                                  |
|       |                        | Total Dissolved Solids (mg/L)      | 744                                                                                                                                                                                                                                                                            | 727                                                                                                                                                                                                                                                   |
|       |                        | Total Suspended Solids (mg/L)      | 8                                                                                                                                                                                                                                                                              | -                                                                                                                                                                                                                                                     |
|       | Wetland                | Approximate Length (m)             | 20                                                                                                                                                                                                                                                                             | 20                                                                                                                                                                                                                                                    |
|       |                        | Approximate Width (m)              | 20                                                                                                                                                                                                                                                                             | 20                                                                                                                                                                                                                                                    |
|       |                        | Approximate Area (m <sup>2</sup> ) | 400                                                                                                                                                                                                                                                                            | 400                                                                                                                                                                                                                                                   |
|       |                        | Approximate Maximum Depth (m)      | 0.06                                                                                                                                                                                                                                                                           | 0.06                                                                                                                                                                                                                                                  |
|       | Time                   |                                    | 2:05 PM                                                                                                                                                                                                                                                                        | 11:40 AM                                                                                                                                                                                                                                              |
|       | Comments               |                                    | Ground is significantly saturated, with small pools of standing water throughout. Water in pools and channel have a oil sheen and iron staining. The water flows minimally from wooded area from the north, into a defined channel, flowing south into a larger marsh wetland. | Ground saturation, flow velocity, and quantity and volume of standing water pools increased between monitoring rounds. Water remains oily and iron stained. Approximate size of wetland remains the same, however pools are deeper and more frequent. |
|       | Representative Picture |                                    |                                                                                                                                                                                            |                                                                                                                                                                  |

**Table F-3D  
W-YD4 Hydroperiod Monitoring**

| 2017  |                        |                                    | 13-Apr-17                                                                                                                                                                                                                                      |                            | 21-Apr-17                                                                             |                            |
|-------|------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                                                                                                                                               |                            | Monitored By: MM                                                                      |                            |
|       |                        |                                    | Days since previous precipitation event: 2                                                                                                                                                                                                     |                            | Days since previous precipitation event: 1                                            |                            |
|       |                        |                                    | Water Level Depth                                                                                                                                                                                                                              | Estimated Elevation (masl) | Water Level Depth                                                                     | Estimated Elevation (masl) |
| W-YD4 | Flow                   | Observed Flow                      | Flowing                                                                                                                                                                                                                                        |                            | Flowing                                                                               |                            |
|       |                        | Creek Width (m)                    | 0.22                                                                                                                                                                                                                                           |                            | 0.27                                                                                  |                            |
|       |                        | Creek Depth (m)                    | 0.04                                                                                                                                                                                                                                           |                            | 0.06                                                                                  |                            |
|       |                        | Estimated Velocity (m/s)           | -                                                                                                                                                                                                                                              |                            | -                                                                                     |                            |
|       |                        | Estimated Flow (L/s)               | -                                                                                                                                                                                                                                              |                            | -                                                                                     |                            |
|       |                        | Measured Flow (L/s)                | 1                                                                                                                                                                                                                                              |                            | 2                                                                                     |                            |
|       | Water Quality          | Salinity (g/L or ppt)              | 476                                                                                                                                                                                                                                            |                            | 0.502                                                                                 |                            |
|       |                        | Dissolved Oxygen                   | -                                                                                                                                                                                                                                              |                            | -                                                                                     |                            |
|       |                        | Temperature (°C)                   | 11.7                                                                                                                                                                                                                                           |                            | 9.7                                                                                   |                            |
|       |                        | pH                                 | 8.48                                                                                                                                                                                                                                           |                            | 8.52                                                                                  |                            |
|       |                        | Conductivity (µs/cm)               | 990                                                                                                                                                                                                                                            |                            | 1046                                                                                  |                            |
|       |                        | Total Dissolved Solids (mg/L)      | 691                                                                                                                                                                                                                                            |                            | 0.739                                                                                 |                            |
|       | Wetland                | Total Suspended Solids (mg/L)      | -                                                                                                                                                                                                                                              |                            | -                                                                                     |                            |
|       |                        | Approximate Length (m)             | 20                                                                                                                                                                                                                                             |                            | 20                                                                                    |                            |
|       |                        | Approximate Width (m)              | 20                                                                                                                                                                                                                                             |                            | 20                                                                                    |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 400                                                                                                                                                                                                                                            |                            | 400                                                                                   |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.04                                                                                                                                                                                                                                           |                            | 0.04                                                                                  |                            |
|       | Time                   |                                    | 12:30 PM                                                                                                                                                                                                                                       |                            | 12:45 PM                                                                              |                            |
|       | Comments               |                                    | Ground saturation, number of pools, water depth, and flow have all decreased from previous monitoring round. Water remains oily and iron stained. Approximate size of wetland remains the same, however pools are shallower and less frequent. |                            | Increase in ground saturation, volume of standing water pools, and stream flow.       |                            |
|       | Representative Picture |                                    |                                                                                                                                                            |                            |  |                            |

**Table F-3D  
W-YD4 Hydroperiod Monitoring**

| 2017  |                        |                                    | 10-May-17                                                                                                             |                            | 16-May-17                                                                             |                            |
|-------|------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                      |                            | Monitored By: MM                                                                      |                            |
|       |                        |                                    | Days since previous precipitation event: 3                                                                            |                            | Days since previous precipitation event: 3                                            |                            |
|       |                        |                                    | Water Level Depth                                                                                                     | Estimated Elevation (masl) | Water Level Depth                                                                     | Estimated Elevation (masl) |
| W-YD4 | Flow                   | Observed Flow                      | Flowing                                                                                                               |                            | Flowing                                                                               |                            |
|       |                        | Creek Width (m)                    | 0.24                                                                                                                  |                            | 0.22                                                                                  |                            |
|       |                        | Creek Depth (m)                    | 0.04                                                                                                                  |                            | 0.08                                                                                  |                            |
|       |                        | Estimated Velocity (m/s)           | -                                                                                                                     |                            | -                                                                                     |                            |
|       |                        | Estimated Flow (L/s)               | -                                                                                                                     |                            | -                                                                                     |                            |
|       |                        | Measured Flow (L/s)                | 1                                                                                                                     |                            | 1                                                                                     |                            |
|       | Water Quality          | Salinity (g/L or ppt)              | 0.514                                                                                                                 |                            | 0.519                                                                                 |                            |
|       |                        | Dissolved Oxygen                   | 0.23                                                                                                                  |                            | 0.45                                                                                  |                            |
|       |                        | Temperature (°C)                   | 10.6                                                                                                                  |                            | 11                                                                                    |                            |
|       |                        | pH                                 | 8.32                                                                                                                  |                            | 8.17                                                                                  |                            |
|       |                        | Conductivity (µs/cm)               | 931                                                                                                                   |                            | 932                                                                                   |                            |
|       |                        | Total Dissolved Solids (mg/L)      | 0.655                                                                                                                 |                            | 0.663                                                                                 |                            |
|       |                        | Total Suspended Solids (mg/L)      | 23                                                                                                                    |                            | 62                                                                                    |                            |
|       | Wetland                | Approximate Length (m)             | 20                                                                                                                    |                            | 20                                                                                    |                            |
|       |                        | Approximate Width (m)              | 20                                                                                                                    |                            | 20                                                                                    |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 400                                                                                                                   |                            | 400                                                                                   |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.04                                                                                                                  |                            | 0.04                                                                                  |                            |
|       | Time                   |                                    | 12:25 PM                                                                                                              |                            | 11:55 AM                                                                              |                            |
|       | Comments               |                                    | Standing water pools have dried, but site remains highly saturated, with iron stains and oil sheen on top of surface. |                            | No significant change since between monitoring rounds.                                |                            |
|       | Representative Picture |                                    |                                   |                            |  |                            |

**Table F-3D  
W-YD4 Hydroperiod Monitoring**

| 2017  |                        |                                    | 24-May-17                                                                                |                            | 31-May-17                                                                             |                            |
|-------|------------------------|------------------------------------|------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                         |                            | Monitored By: MM                                                                      |                            |
|       |                        |                                    | Days since previous precipitation event: 3                                               |                            | Days since previous precipitation event: 1                                            |                            |
|       |                        |                                    | Water Level Depth                                                                        | Estimated Elevation (masl) | Water Level Depth                                                                     | Estimated Elevation (masl) |
| W-YD4 | Flow                   | Observed Flow                      | Minimal Flow                                                                             |                            | Minimal Flow                                                                          |                            |
|       |                        | Creek Width (m)                    | 0.21                                                                                     |                            | 0.39                                                                                  |                            |
|       |                        | Creek Depth (m)                    | 0.05                                                                                     |                            | 0.06                                                                                  |                            |
|       |                        | Estimated Velocity (m/s)           | 0.05                                                                                     |                            | 0.05                                                                                  |                            |
|       |                        | Estimated Flow (L/s)               | 0.001                                                                                    |                            | 0.001                                                                                 |                            |
|       |                        | Measured Flow (L/s)                | -                                                                                        |                            | -                                                                                     |                            |
|       | Water Quality          | Salinity (g/L or ppt)              | -                                                                                        |                            | -                                                                                     |                            |
|       |                        | Dissolved Oxygen                   | -                                                                                        |                            | -                                                                                     |                            |
|       |                        | Temperature (°C)                   | -                                                                                        |                            | -                                                                                     |                            |
|       |                        | pH                                 | -                                                                                        |                            | -                                                                                     |                            |
|       |                        | Conductivity (µs/cm)               | -                                                                                        |                            | -                                                                                     |                            |
|       |                        | Total Dissolved Solids (mg/L)      | -                                                                                        |                            | -                                                                                     |                            |
|       |                        | Total Suspended Solids (mg/L)      | -                                                                                        |                            | -                                                                                     |                            |
|       | Wetland                | Approximate Length (m)             | 20                                                                                       |                            | 20                                                                                    |                            |
|       |                        | Approximate Width (m)              | 20                                                                                       |                            | 20                                                                                    |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 400                                                                                      |                            | 400                                                                                   |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.04                                                                                     |                            | 0.04                                                                                  |                            |
|       | Time                   |                                    | 11:10 AM                                                                                 |                            | 11:10 AM                                                                              |                            |
|       | Comments               |                                    | No significant change between monitoring rounds. Observed flow has decreased to minimal. |                            | Ground saturation and volume of water in channel increased between monitoring rounds. |                            |
|       | Representative Picture |                                    |      |                            |  |                            |



**Table F-3D  
W-YD4 Hydroperiod Monitoring**

| 2017  |                        |                                    | 14-Jun-17                                                                            |                            | 7-Jul-17                                                                                                                                       |                            |
|-------|------------------------|------------------------------------|--------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                     |                            | Monitored By: MM                                                                                                                               |                            |
|       |                        |                                    | Days since previous precipitation event: 1                                           |                            | Days since previous precipitation event: 6                                                                                                     |                            |
|       |                        |                                    | Water Level Depth                                                                    | Estimated Elevation (masl) | Water Level Depth                                                                                                                              | Estimated Elevation (masl) |
| W-YD4 | Flow                   | Observed Flow                      | Minimal Flow                                                                         |                            | Minimal Flow                                                                                                                                   |                            |
|       |                        | Creek Width (m)                    | 0.37                                                                                 |                            | 0.23                                                                                                                                           |                            |
|       |                        | Creek Depth (m)                    | 0.05                                                                                 |                            | 0.06                                                                                                                                           |                            |
|       |                        | Estimated Velocity (m/s)           | 0.05                                                                                 |                            | 0.05                                                                                                                                           |                            |
|       |                        | Estimated Flow (L/s)               | 0.001                                                                                |                            | 0.001                                                                                                                                          |                            |
|       |                        | Measured Flow (L/s)                | -                                                                                    |                            | -                                                                                                                                              |                            |
|       | Water Quality          | Salinity (g/L or ppt)              | -                                                                                    |                            | -                                                                                                                                              |                            |
|       |                        | Dissolved Oxygen                   | -                                                                                    |                            | -                                                                                                                                              |                            |
|       |                        | Temperature (°C)                   | -                                                                                    |                            | -                                                                                                                                              |                            |
|       |                        | pH                                 | -                                                                                    |                            | -                                                                                                                                              |                            |
|       |                        | Conductivity (µs/cm)               | -                                                                                    |                            | -                                                                                                                                              |                            |
|       |                        | Total Dissolved Solids (mg/L)      | -                                                                                    |                            | -                                                                                                                                              |                            |
|       |                        | Total Suspended Solids (mg/L)      | -                                                                                    |                            | -                                                                                                                                              |                            |
|       | Wetland                | Approximate Length (m)             | 20                                                                                   |                            | 20                                                                                                                                             |                            |
|       |                        | Approximate Width (m)              | 20                                                                                   |                            | 20                                                                                                                                             |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 400                                                                                  |                            | 400                                                                                                                                            |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.04                                                                                 |                            | 0.06                                                                                                                                           |                            |
|       | Time                   |                                    | 8:30 AM                                                                              |                            | 8:20 AM                                                                                                                                        |                            |
|       | Comments               |                                    | No significant change between monitoring rounds.                                     |                            | Ground saturation increased between monitoring rounds. Small pools of standing water formed in footprints (>0.5m <sup>2</sup> and 0.03m deep). |                            |
|       | Representative Picture |                                    |  |                            |                                                           |                            |

**Table F-3D  
W-YD4 Hydroperiod Monitoring**

| 2017  |                        | 20-Jul-17                                  |                                                                                                                                                |
|-------|------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                        | Monitored By: MM                           |                                                                                                                                                |
|       |                        | Days since previous precipitation event: 3 |                                                                                                                                                |
|       |                        | Water Level Depth                          | Estimated Elevation (masl)                                                                                                                     |
| W-YD4 | Flow                   | Observed Flow                              | Flowing                                                                                                                                        |
|       |                        | Creek Width (m)                            | 0.35                                                                                                                                           |
|       |                        | Creek Depth (m)                            | 0.06                                                                                                                                           |
|       |                        | Estimated Velocity (m/s)                   | -                                                                                                                                              |
|       |                        | Estimated Flow (L/s)                       | -                                                                                                                                              |
|       |                        | Measured Flow (L/s)                        | 1                                                                                                                                              |
|       | Water Quality          | Salinity (g/L or ppt)                      | 0.433                                                                                                                                          |
|       |                        | Dissolved Oxygen                           | 5.81                                                                                                                                           |
|       |                        | Temperature (°C)                           | 12.8                                                                                                                                           |
|       |                        | pH                                         | 8.26                                                                                                                                           |
|       |                        | Conductivity (µs/cm)                       | 898                                                                                                                                            |
|       |                        | Total Dissolved Solids (mg/L)              | 0.679                                                                                                                                          |
|       |                        | Total Suspended Solids (mg/L)              | 7                                                                                                                                              |
|       | Wetland                | Approximate Length (m)                     | 20                                                                                                                                             |
|       |                        | Approximate Width (m)                      | 20                                                                                                                                             |
|       |                        | Approximate Area (m <sup>2</sup> )         | 400                                                                                                                                            |
|       |                        | Approximate Maximum Depth (m)              | 0.05                                                                                                                                           |
|       | Time                   |                                            | 7:50 AM                                                                                                                                        |
|       | Comments               |                                            | Ground saturation increased between monitoring rounds. Small pools of standing water formed in footprints (>0.7m <sup>2</sup> and 0.05m deep). |
|       | Representative Picture |                                            |                                                            |



**Table F-3E**  
**W-YD5 Hydroperiod Monitoring**

| 2017  |                        | 4-Apr-17                                                                            |                                                                                                                                                                         | 13-Apr-17                                                                            |                            |
|-------|------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------|
|       |                        | Monitored By: MM                                                                    |                                                                                                                                                                         | Monitored By: MM                                                                     |                            |
|       |                        | Days since previous precipitation event: 0                                          |                                                                                                                                                                         | Days since previous precipitation event: 2                                           |                            |
|       |                        | Water Level Depth                                                                   | Estimated Elevation (masl)                                                                                                                                              | Water Level Depth                                                                    | Estimated Elevation (masl) |
| W-YD5 | Wetland                | Approximate Length (m)                                                              | 30                                                                                                                                                                      | 10                                                                                   |                            |
|       |                        | Approximate Width (m)                                                               | 30                                                                                                                                                                      | 10                                                                                   |                            |
|       |                        | Approximate Area (m <sup>2</sup> )                                                  | 900                                                                                                                                                                     | 100                                                                                  |                            |
|       |                        | Approximate Maximum Depth (m)                                                       | 0.16                                                                                                                                                                    | 0                                                                                    |                            |
|       |                        | Time                                                                                | 12:05 PM                                                                                                                                                                | 12:50 PM                                                                             |                            |
|       |                        | Comments                                                                            | Standing water pooled throughout the open field area. One large pool in the center of the site (45m <sup>2</sup> and 0.16m deep). Water has also pooled in cart tracks. | Standing water pools have dried, however ground remains very saturated.              |                            |
|       | Representative Picture |  |                                                                                                                                                                         |  |                            |

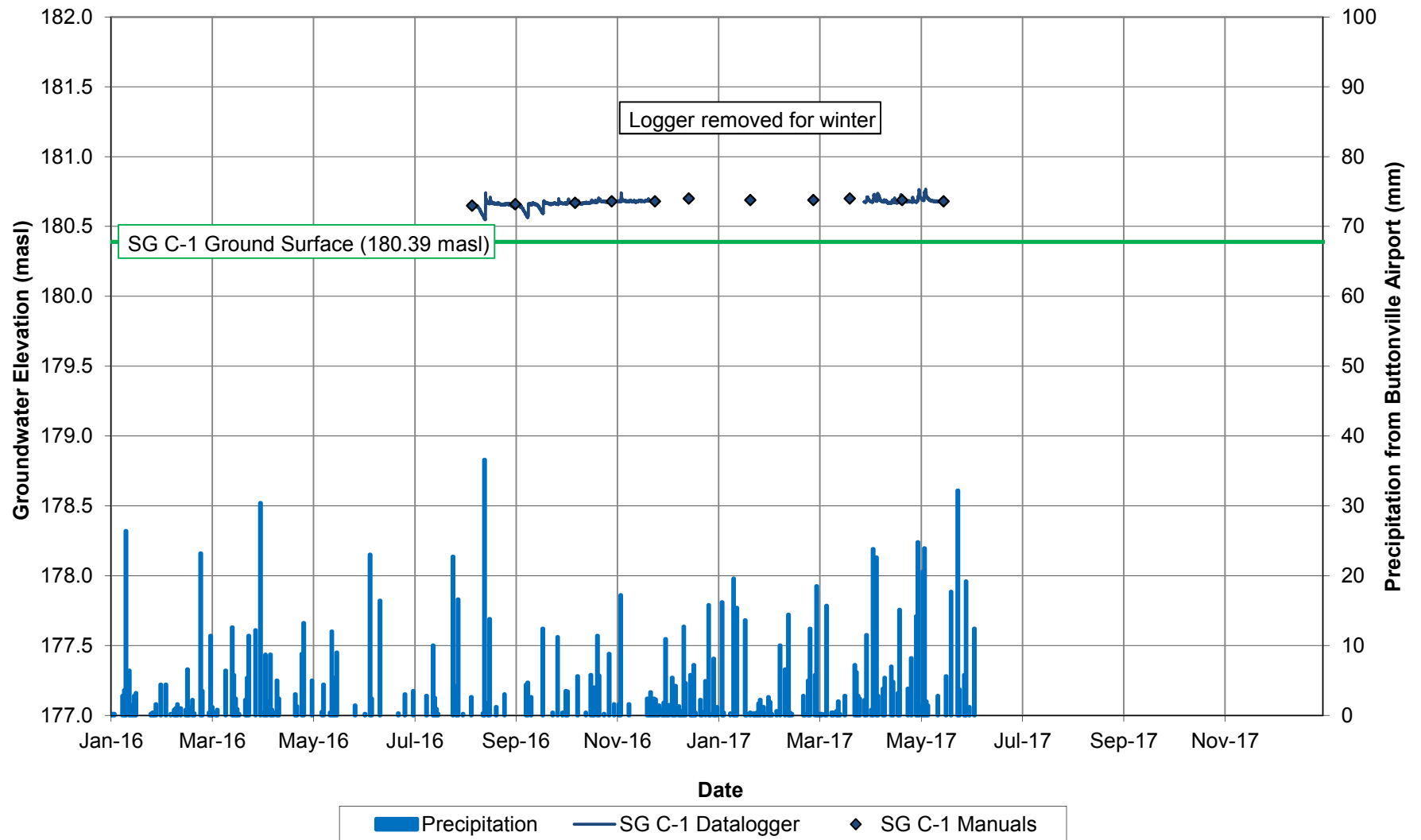
**Table F-3E**  
**W-YD5 Hydroperiod Monitoring**

| 2017  |                        |                                    | 21-Apr-17                                                                                                                              |                            | 10-May-17                                                                            |                            |
|-------|------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------|----------------------------|
|       |                        |                                    | Monitored By: MM                                                                                                                       |                            | Monitored By: MM                                                                     |                            |
|       |                        |                                    | Days since previous precipitation event: 1                                                                                             |                            | Days since previous precipitation event: 3                                           |                            |
|       |                        |                                    | Water Level Depth                                                                                                                      | Estimated Elevation (masl) | Water Level Depth                                                                    | Estimated Elevation (masl) |
| W-YD5 | Wetland                | Approximate Length (m)             | 10                                                                                                                                     |                            | 5                                                                                    |                            |
|       |                        | Approximate Width (m)              | 10.0                                                                                                                                   |                            | 5.0                                                                                  |                            |
|       |                        | Approximate Area (m <sup>2</sup> ) | 100                                                                                                                                    |                            | 25                                                                                   |                            |
|       |                        | Approximate Maximum Depth (m)      | 0.12                                                                                                                                   |                            | 0                                                                                    |                            |
|       |                        | Time                               | 10:40 AM                                                                                                                               |                            | 12:00 PM                                                                             |                            |
|       | Comments               |                                    | Increase in saturation, and quantity and volume of standing water pools. Largest pool is approximately 5m <sup>2</sup> and 0.12m deep. |                            | Standing water pools have dried, ground remains saturated.                           |                            |
|       | Representative Picture |                                    |                                                     |                            |  |                            |

**Table F-3E**  
**W-YD5 Hydroperiod Monitoring**

| 2017  |                        | 16-May-17                                  |                                                                                     |
|-------|------------------------|--------------------------------------------|-------------------------------------------------------------------------------------|
|       |                        | Monitored By: MM                           |                                                                                     |
|       |                        | Days since previous precipitation event: 3 |                                                                                     |
|       |                        | Water Level Depth                          | Estimated Elevation (masl)                                                          |
| W-YD5 | Wetland                | Approximate Length (m)                     | 0                                                                                   |
|       |                        | Approximate Width (m)                      | 0.0                                                                                 |
|       |                        | Approximate Area (m <sup>2</sup> )         | 0                                                                                   |
|       |                        | Approximate Maximum Depth (m)              | 0                                                                                   |
|       | Time                   |                                            | 9:45 AM                                                                             |
|       | Comments               |                                            | Ground is dry to slightly saturated/ muddy. No further monitoring required.         |
|       | Representative Picture |                                            |  |

# Surface Water Elevations SG C-1





# BURNSIDE

[ THE DIFFERENCE IS OUR PEOPLE ]

## Appendix G

### Water Quality Data

**Table G-1  
Groundwater Quality**

| Sample Description        |          |       |         |       | MW16-5     | MW16-15    |
|---------------------------|----------|-------|---------|-------|------------|------------|
| Date Sampled              |          |       |         |       | 06-Apr-16  | 06-Apr-16  |
| Parameter                 | Unit     | ODWS  | A/O     | RDL   |            |            |
| Electrical Conductivity   | uS/cm    |       |         | 2     | 1120       | 824        |
| pH                        | pH Units |       | 6.5-8.5 | 0.05  | 7.88       | 8.05       |
| Total Suspended Solids    | mg/L     |       |         | 2     | 355        | 2580       |
| Total Hardness (as CaCO3) | mg/L     |       | 80-100  | 2     | 512        | 491        |
| Total Dissolved Solids    | mg/L     | 500   |         | 30    | <b>760</b> | <b>697</b> |
| Alkalinity (as CaCO3)     | mg/L     |       | 30-500  | 2     | 342        | 271        |
| Chloride                  | mg/L     | 250   |         | 1     | 150        | 16         |
| Nitrate as N              | mg/L     | 10    |         | 0.06  | 0.22       | < 0.06     |
| Nitrite as N              | mg/L     | 1     |         | 0.03  | < 0.03     | < 0.03     |
| Ammonia+Ammonium (N)      | mg/L     |       |         | 0.1   | < 0.1      | 0.2        |
| Sulphate                  | mg/L     | 500   |         | 1     | 72         | 210        |
| Calcium                   | mg/L     |       |         | 0.01  | 176        | 160        |
| Magnesium                 | mg/L     |       |         | 0.001 | 17.8       | 22.0       |
| Sodium                    | mg/L     | 20    | 200     | 0.01  | 68.8       | 9.57       |
| Potassium                 | mg/L     |       |         | 0.003 | 1.66       | 1.05       |
| Aluminum                  | µg/L     |       | 100     | 1     | < 1        | < 1        |
| Antimony                  | µg/L     | 6     |         | 0.2   | < 0.2      | < 0.2      |
| Arsenic                   | µg/L     | 25    |         | 0.2   | 0.2        | 0.9        |
| Barium                    | µg/L     | 1000  |         | 0.02  | 81.3       | 69.0       |
| Beryllium                 | µg/L     | ---   |         | 0.007 | < 0.007    | < 0.007    |
| Boron                     | µg/L     | 5000  |         | 2     | 29         | 11         |
| Cadmium                   | µg/L     | 5     |         | 0.003 | 0.009      | 0.008      |
| Chromium                  | µg/L     | 50    |         | 0.03  | 0.35       | 0.22       |
| Cobalt                    | µg/L     |       |         | 0.004 | 1.70       | 0.110      |
| Copper                    | µg/L     |       | 1000    | 0.02  | 0.33       | 0.08       |
| Iron                      | µg/L     |       | 300     | 7     | 42         | 1220       |
| Lead                      | µg/L     | 10    |         | 0.01  | < 0.01     | 0.02       |
| Manganese                 | µg/L     |       | 50      | 0.01  | 486        | 70.1       |
| Mercury                   | µg/L     | 0.001 |         | 0.01  | < 0.01     | < 0.01     |
| Molybdenum                | µg/L     |       |         | 0.01  | 0.80       | 0.59       |
| Nickel                    | µg/L     |       |         | 0.1   | 4.8        | 0.4        |
| Selenium                  | µg/L     | 10    |         | 0.04  | 0.04       | < 0.04     |
| Silver                    | µg/L     |       |         | 0.002 | < 0.002    | < 0.002    |
| Strontium                 | µg/L     |       |         | 0.02  | 421        | 288        |
| Thallium                  | µg/L     |       |         | 0.005 | 0.030      | < 0.005    |
| Tin                       | µg/L     |       |         | 0.01  | 0.04       | 0.06       |
| Titanium                  | µg/L     |       |         | 0.05  | < 0.05     | < 0.05     |
| Uranium                   | µg/L     | 20    |         | 0.002 | 2.02       | 0.063      |
| Vanadium                  | µg/L     |       |         | 0.01  | 0.09       | 0.10       |
| Zinc                      | µg/L     |       | 5000    | 2     | 2          | 3          |
| Anion Sum                 | meq/L    |       |         | NA    | 12.6       | 10.2       |
| Cation Sum                | meq/L    |       |         | NA    | 13.3       | 10.2       |
| % Difference/ Ion Balance | %        |       |         | NA    | 2.80       | 0.01       |

RDL- Reported Detection Limit

ODWS- Ontario Drinking Water Standard Maximum Acceptable Concentration

Chemical/Physical Objectives [A/O]- Not Health Related

NA- Not Applicable

Bold results indicate exceedances in ODWS criteria

Shaded results indicate exceedances in aesthetic objectives (A/O)

**Table G-2**  
**Surface Water Quality**

| Sample Description       |               |         | Berczy<br>(SG7) | Bruce<br>(SS1) |
|--------------------------|---------------|---------|-----------------|----------------|
| Date Sampled             |               |         | 06-Apr-16       | 06-Apr-16      |
| Parameter                | Units         | PWQO    |                 |                |
| Temperature Upon Receipt | °C            |         | 6.0             | 6.0            |
| Total Suspended Solids   | mg/L          |         | 3               | 2              |
| Total Dissolved Solids   | mg/L          |         | 500             | 946            |
| pH                       | no unit       | 6.5-8.5 | 8.15            | 8.23           |
| Alkalinity               | mg/L as CaCO3 |         | 238             | 218            |
| Conductivity             | uS/cm         |         | 858             | 1680           |
| Colour                   | TCU           |         | 8               | 10             |
| Fluoride                 | mg/L          |         | 0.10            | 0.12           |
| Chloride                 | mg/L          |         | 120             | 380            |
| Sulphate                 | mg/L          |         | 35              | 48             |
| Nitrite (as N)           | as N mg/L     |         | < 0.03          | < 0.03         |
| Nitrate (as N)           | as N mg/L     |         | 1.70            | 1.99           |
| Ammonia+Ammonium (N)     | as N mg/L     |         | < 0.1           | < 0.1          |
| Total Kjeldahl Nitrogen  | as N mg/L     |         | < 0.5           | < 0.5          |
| Total Organic Carbon     | mg/L          |         | 4.3             | 3.4            |
| Dissolved Organic Carbon | mg/L          |         | 3.5             | 3.4            |
| Mercury (total)          | µg/L          | 0.2     | 0.00003         | < 0.00001      |
| Hardness                 | mg/L as CaCO3 |         | 324             | 346            |
| Silver (total)           | µg/L          | 0.1     | < 0.002         | 0.004          |
| Aluminum (total)         | µg/L          |         | 116             | 71             |
| Aluminum (dissolved)     | µg/L          | 75      | 1               | 2              |
| Arsenic (total)          | µg/L          | 5       | 0.3             | 0.3            |
| Barium (total)           | µg/L          |         | 64.3            | 54.8           |
| Beryllium (total)        | µg/L          | 1100    | 0.019           | < 0.007        |
| Boron (total)            | µg/L          | 200     | 18              | 23             |
| Bismuth (total)          | µg/L          |         | 0.018           | 0.027          |
| Calcium (total)          | mg/L          |         | 108             | 115            |
| Cadmium (total)          | µg/L          | 0.5     | 0.006           | 0.008          |
| Cobalt (total)           | µg/L          | 0.9     | 0.123           | 0.146          |
| Chromium (total)         | µg/L          |         | 0.54            | 0.67           |
| Copper (total)           | µg/L          | 5       | 0.80            | 1.55           |
| Iron (total)             | µg/L          | 300     | 260             | 148            |
| Potassium (total)        | mg/L          |         | 2.71            | 2.81           |
| Lithium (total)          | µg/L          |         | 2.17            | 2.31           |
| Magnesium (total)        | mg/L          |         | 13.3            | 14.1           |
| Manganese (total)        | µg/L          |         | 28.4            | 29.8           |
| Molybdenum (total)       | µg/L          | 40      | 0.50            | 0.66           |
| Sodium (total)           | mg/L          |         | 69.6            | 241            |
| Nickel (total)           | µg/L          | 25      | 0.6             | 0.8            |
| Phosphorus (total)       | µg/L          |         | 32              | 16             |
| Lead (total)             | µg/L          | 5       | 0.12            | 0.16           |
| Antimony (total)         | µg/L          | 20      | < 0.2           | 0.2            |
| Selenium (total)         | µg/L          | 100     | 0.14            | 0.14           |
| Silicon (total)          | µg/L          |         | 4510            | 3530           |
| Tin (total)              | µg/L          |         | 0.19            | 0.19           |
| Strontium (total)        | µg/L          |         | 266             | 384            |
| Titanium (total)         | µg/L          |         | 4.07            | 2.94           |
| Thallium (total)         | µg/L          | 0.3     | 0.019           | < 0.005        |
| Uranium (total)          | µg/L          | 5       | 0.793           | 0.824          |
| Vanadium (total)         | µg/L          | 6       | 0.49            | 0.46           |
| Zinc (total)             | µg/L          | 20      | < 2             | 4              |
| Anion Sum                | meq/L         |         | 8.87            | 16.1           |
| Cation sum               | meq/L         |         | 9.58            | 17.4           |
| Anion-Cation Balance     | % difference  |         | 3.84            | 4.10           |

PWQO- Provincial Water Quality Objective

Bold results indicate exceedances in criteria

**Table G-3**  
**Surface Water Field Chemistry**

| Surface Water Station | Time     | Salinity (ppm) | Dissolved Oxygen (mg/L) | Temperature (°C) | pH  | Conductivity (µS/cm) | TDS (g/L) | TSS (mg/L) |
|-----------------------|----------|----------------|-------------------------|------------------|-----|----------------------|-----------|------------|
| <b>SS1</b>            |          |                |                         |                  |     |                      |           |            |
| 22-Apr-16             | 10:15 AM | 426            | N/A                     | 12.9             | 9.1 | 927                  | 0.655     | 8          |
| 20-May-16             | 8:45 AM  | 401            | N/A                     | 12.3             | 8.9 | 872                  | 0.62      | 11         |
| 29-Jun-16             | 9:00 AM  | 339            | N/A                     | 18               | 8.8 | 730                  | 0.52      | 20         |
| 29-Jul-16             | 10:30 AM | 330            | N/A                     | 22.6             | 8.6 | 701                  | 0.50      | 28         |
| 8/31/2016             | 8:45 AM  | 356            | N/A                     | 20.5             | 8.5 | 763                  | 0.54      | 22         |
| 6-Oct-16              | 9:20 AM  | 347            | N/A                     | 15               | 8.5 | 751                  | 0.53      | 20         |
| 28-Oct-16             | 9:25 AM  | 379            | N/A                     | 5.1              | 8.9 | 858                  | 0.61      | N/A        |
| 23-Nov-16             | 9:00 AM  | 378            | N/A                     | 0.3              | 9.0 | 852                  | 0.61      | N/A        |
| 21-Mar-17             | 9:50 AM  | 422            | 14.8*                   | 4                | 8.9 | 919                  | 0.66      | 15         |
| 16-May-17             | 8:10 AM  | 438            | 0.3                     | 10.8             | 8.9 | 805                  | 0.56      | N/A        |
| 2-Aug-17              | 7:30 AM  | 377            | 3.9                     | 18.5             | 8.8 | 788                  | 0.55      | 11         |
| <b>SS2</b>            |          |                |                         |                  |     |                      |           |            |
| 22-Apr-16             | 1:15 PM  | 397            | N/A                     | 16.4             | 9.1 | 849                  | 0.61      | 10         |
| 20-May-16             | 8:30 AM  | 397            | N/A                     | 11.3             | 9.0 | 863                  | 0.62      | 11         |
| 29-Jun-16             | 8:45 AM  | 338            | N/A                     | 17.9             | 8.9 | 731                  | 0.52      | 18         |
| 29-Jul-16             | 8:45 AM  | 329            | N/A                     | 21.1             | 8.6 | 705                  | 0.50      | 19         |
| 31-Aug-16             | 8:30 AM  | 355            | N/A                     | 20.5             | 8.8 | 760                  | 0.54      | 21         |
| 6-Oct-16              | 9:05 AM  | 344            | N/A                     | 14.9             | 8.9 | 747                  | 0.53      | 18         |
| 28-Oct-16             | 11:15 AM | 388            | N/A                     | 4.6              | 8.8 | 884                  | 0.63      | N/A        |
| 23-Nov-16             | 8:40 AM  | 382            | N/A                     | 0.3              | 8.9 | 871                  | 0.61      | N/A        |
| 21-Mar-17             | 9:25 AM  | 430            | 17.3*                   | 2.9              | 9.2 | 934                  | 0.66      | 4          |
| 16-May-17             | 1:05 PM  | 434            | N/A                     | 13               | 8.9 | 771                  | 0.54      | 43         |
| 2-Aug-17              | 1:00 PM  | 369            | 7.9                     | 23.7             | 9.1 | 750                  | 0.54      | 19         |
| <b>SS3</b>            |          |                |                         |                  |     |                      |           |            |
| 22-Apr-16             | 2:30 PM  | 420            | N/A                     | 17.9             | 9.2 | 900                  | 0.64      | 11         |
| 20-May-16             | 10:45 AM | 424            | N/A                     | 14.5             | 8.9 | 917                  | 0.65      | 11         |
| 29-Jun-16             | 11:30 AM | 340            | N/A                     | 20.3             | 8.8 | 727                  | 0.52      | 18         |
| 29-Jul-16             | 11:45 AM | 327            | N/A                     | 23.9             | 8.7 | 700                  | 0.50      | 16         |
| 31-Aug-16             | 11:00 AM | 374            | N/A                     | 22.5             | 8.5 | 796                  | 0.57      | 13         |
| 6-Oct-16              | 10:45 AM | 367            | N/A                     | 17.8             | 8.4 | 787                  | 0.56      | 17         |
| 28-Oct-16             | 11:40 AM | 398            | N/A                     | 5.9              | 8.8 | 896                  | 0.64      | N/A        |
| 23-Nov-16             | 11:33 AM | 379            | N/A                     | 1.2              | 8.8 | 898                  | 0.64      | N/A        |
| 20-Jan-17             | 10:15 AM | 532            | 13.9                    | 2.4              | 9.0 | 1212                 | 0.86      | 8          |
| 27-Feb-17             | 10:30 AM | 481            | 13.8                    | 3.1              | 9.1 | 1039                 | 0.75      | N/A        |
| 21-Mar-17             | 11:45 AM | 468            | 16.5                    | 6.6              | 9.1 | 1000                 | 0.71      | 11         |
| 16-May-17             | 10:05 AM | 447            | 0.3                     | 11.6             | 8.8 | 814                  | 0.57      | 43         |
| 2-Aug-17              | 9:45 AM  | 390            | 5.2                     | 20.1             | 8.8 | 781                  | 0.57      | 10         |
| <b>SS4</b>            |          |                |                         |                  |     |                      |           |            |
| 22-Apr-16             | 3:00 PM  | 668            | N/A                     | 17.1             | 9.0 | 1409                 | 1.00      | 10         |
| 20-May-16             | 9:30 AM  | 684            | N/A                     | 14.1             | 8.7 | 1445                 | 1.00      | 10         |
| 29-Jun-16             | 10:30 AM | 602            | N/A                     | 18.7             | 8.6 | 1278                 | 0.90      | 14         |
| 29-Jul-16             | 11:00 AM | 389            | N/A                     | 22.8             | 8.7 | 827                  | 0.59      | 18         |
| 31-Aug-16             | 10:00 AM | 570            | N/A                     | 20.9             | 8.4 | 1198                 | 0.85      | 12         |
| 6-Oct-16              | 10:20 AM | 533            | N/A                     | 16               | 8.5 | 1125                 | 0.80      | 17         |
| 28-Oct-16             | 10:40 AM | 542            | N/A                     | 4.8              | 8.7 | 1218                 | 0.87      | N/A        |
| 23-Nov-16             | 10:30 AM | 663            | N/A                     | 0.7              | 8.7 | 1476                 | 1.04      | N/A        |
| 21-Mar-17             | 11:52 AM | 936            | 16.0                    | 4.4              | 9.0 | 1988                 | 1.41      | 17         |
| 16-May-17             | 9:15 AM  | 610            | 0.3                     | 11.5             | 8.7 | 1087                 | 0.74      | 36         |
| 2-Aug-17              | 9:00 AM  | 561            | 6.4                     | 19.4             | 8.7 | 1125                 | 0.80      | 18         |



**Table G-3**  
**Surface Water Field Chemistry**

| Surface Water Station | Time     | Salinity (ppm) | Dissolved Oxygen (mg/L) | Temperature (°C) | pH  | Conductivity (µS/cm) | TDS (g/L) | TSS (mg/L) |
|-----------------------|----------|----------------|-------------------------|------------------|-----|----------------------|-----------|------------|
| <b>SS5</b>            |          |                |                         |                  |     |                      |           |            |
| 22-Apr-16             | 3:30 PM  | 595            | N/A                     | 11.1             | 8.9 | 1261                 | 0.86      | 7          |
| 20-May-16             | -        | -              | -                       | -                | -   | -                    | -         | -          |
| 29-Jun-16             | 1:00 PM  | 577            | N/A                     | 23.1             | 8.5 | 1101                 | 0.79      | 13         |
| 29-Jul-16             | 1:00 PM  | 398            | N/A                     | 21.1             | 8.8 | 845                  | 0.60      | 14         |
| 8/31/2016             | 2:00 PM  | 568            | N/A                     | 24.1             | 8.3 | 1193                 | 0.85      | 24         |
| 6-Oct-16              | 3:00 PM  | 967            | N/A                     | 19.2             | 8.4 | 1184                 | 0.84      | 18         |
| 28-Oct-16             | 1:30 PM  | 590            | N/A                     | 6.5              | 8.6 | 1318                 | 0.71      | N/A        |
| 23-Nov-16             | 3:00 PM  | 676            | N/A                     | 1.7              | 8.9 | 1433                 | 0.98      | N/A        |
| 20-Jan-17             | 3:00PM   | 817            | 13.5                    | 2.1              | 8.7 | 1764                 | 1.25      | 7          |
| 27-Feb-17             | 1:00 PM  | 678            | 15.0                    | 5.9              | 8.8 | 1432                 | 1.00      | 13         |
| 21-Mar-17             | 2:05 PM  | 826            | 17.2                    | 7.7              | 8.9 | 1699                 | 1.21      | 13         |
| 16-May-17             | 11:32 AM | 570            | N/A                     | 12.3             | 8.8 | 1025                 | 0.72      | 44         |
| 2-Aug-17              | 1:30 PM  | 545            | 6.4                     | 23.0             | 8.8 | 1104                 | 0.78      | 13         |
| <b>SS6</b>            |          |                |                         |                  |     |                      |           |            |
| 17-Apr-17             | N/A      | N/A            | N/A                     | N/A              | N/A | N/A                  | N/A       | N/A        |
| 21-Apr-17             | N/A      | N/A            | N/A                     | N/A              | N/A | N/A                  | N/A       | N/A        |
| <b>SS7</b>            |          |                |                         |                  |     |                      |           |            |
| 21-Apr-17             | 12:08 PM | 446            | N/A                     | 10               | 8.6 | 930                  | 0.67      | N/A        |
| 16-May-17             | 10:50 AM | 554            | 0.3                     | 10.2             | 8.0 | 1001                 | 0.71      | 43         |
| 2-Aug-17              | 10:20 AM | 527            | 5.0                     | 17.5             | 8.3 | 1070                 | 0.75      | 50         |
| <b>SS8</b>            |          |                |                         |                  |     |                      |           |            |
| 21-Apr-17             | 12:15 PM | 426            | N/A                     | 9.5              | 8.5 | 893                  | 0.64      | N/A        |
| 16-May-17             | 11:00 AM | 509            | 0.3                     | 10.3             | 8.4 | 912                  | 0.64      | 48         |
| 2-Aug-17              | 10:35 AM | 502            | 5.8                     | 17.0             | 8.5 | 1017                 | 0.73      | 15         |

N/A- Data not available



# BURNSIDE

[ THE DIFFERENCE IS OUR PEOPLE ]

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## Appendix H

### Water Balance Calculations

**TABLE H-1**

| Pre- and Post-Development Monthly Water Balance Components                                                                  |         |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
|-----------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|---------------------------------------|
| Based on Thornthwaite's Soil Moisture Balance Approach with a Soil Moisture Retention of 125 mm (urban lawns in silt soils) |         |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| Precipitation data from Toronto Buttonville Climate Station (1981 - 2010)                                                   |         |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
|                                                                                                                             |         |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| Potential Evapotranspiration Calculation                                                                                    | JAN     | FEB                                                                             | MAR   | APR   | MAY   | JUN   | JUL    | AUG   | SEP   | OCT   | NOV   | DEC   | YEAR |                                       |
| Average Temperature (Degree C)                                                                                              | -5.80   | -5.60                                                                           | -0.40 | 6.70  | 13.00 | 18.60 | 21.20  | 20.20 | 15.70 | 8.90  | 3.10  | -2.90 | 7.7  | <--From Environment Canada            |
| Heat index: $i = (t/5)^{1.514}$                                                                                             | 0.00    | 0.00                                                                            | 0.00  | 1.56  | 4.25  | 7.31  | 8.91   | 8.28  | 5.65  | 2.39  | 0.48  | 0.00  | 38.8 |                                       |
| Unadjusted Daily Potential Evapotranspiration U (mm)                                                                        | 0.00    | 0.00                                                                            | 0.00  | 29.28 | 61.03 | 90.77 | 104.93 | 99.46 | 75.23 | 40.11 | 12.46 | 0.00  | 513  |                                       |
| Adjusting Factor for U (Latitude 43° 52' N)                                                                                 | 0.81    | 0.82                                                                            | 1.02  | 1.12  | 1.26  | 1.28  | 1.29   | 1.2   | 1.04  | 0.95  | 0.81  | 0.77  |      | <--From J. M. Lorente (1961), pp. 206 |
| Adjusted Potential Evapotranspiration PET (mm)                                                                              | 0       | 0                                                                               | 0     | 33    | 77    | 116   | 135    | 119   | 78    | 38    | 10    | 0     | 607  |                                       |
|                                                                                                                             |         |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| COMPONENTS                                                                                                                  | JAN     | FEB                                                                             | MAR   | APR   | MAY   | JUN   | JUL    | AUG   | SEP   | OCT   | NOV   | DEC   | YEAR |                                       |
| Precipitation (P)                                                                                                           | 62      | 51                                                                              | 53    | 74    | 80    | 83    | 79     | 76    | 82    | 68    | 80    | 66    | 853  | <--From Environment Canada            |
| Potential Evapotranspiration (PET)                                                                                          | 0       | 0                                                                               | 0     | 33    | 77    | 116   | 135    | 119   | 78    | 38    | 10    | 0     | 607  |                                       |
| P - PET                                                                                                                     | 62      | 51                                                                              | 53    | 41    | 3     | -33   | -56    | -43   | 4     | 30    | 70    | 66    | 246  |                                       |
| Change in Soil Moisture Storage                                                                                             | 0       | 0                                                                               | 0     | 0     | 0     | -33   | -56    | -35   | 4     | 30    | 70    | 22    | 0    |                                       |
| Soil Moisture Storage max 125 mm                                                                                            | 125     | 125                                                                             | 125   | 125   | 125   | 92    | 35     | 0     | 4     | 33    | 103   | 125   |      |                                       |
| Actual Evapotranspiration (AET)                                                                                             | 0       | 0                                                                               | 0     | 33    | 77    | 116   | 135    | 111   | 78    | 38    | 10    | 0     | 599  |                                       |
| Soil Moisture Deficit max 125 mm                                                                                            | 0       | 0                                                                               | 0     | 0     | 0     | 33    | 90     | 125   | 121   | 92    | 22    | 0     |      |                                       |
| Water Surplus - available for infiltration or runoff                                                                        | 62      | 51                                                                              | 53    | 41    | 3     | 0     | 0      | 0     | 0     | 0     | 0     | 44    | 254  |                                       |
| Potential Infiltration (based on MOECC methodology*; independent of temperature)                                            | 28      | 23                                                                              | 24    | 19    | 1     | 0     | 0      | 0     | 0     | 0     | 0     | 20    | 114  |                                       |
| Potential Direct Surface Water Runoff (independent of temperature)                                                          | 34      | 28                                                                              | 29    | 23    | 1     | 0     | 0      | 0     | 0     | 0     | 0     | 24    | 140  |                                       |
|                                                                                                                             |         |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| IMPERVIOUS AREA WATER SURPLUS                                                                                               |         |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| Precipitation (P)                                                                                                           | 853     | mm/year                                                                         |       |       |       |       |        |       |       |       |       |       |      |                                       |
| 15%)                                                                                                                        | 128     | mm/year                                                                         |       |       |       |       |        |       |       |       |       |       |      |                                       |
| P-PE (surplus available for runoff from impervious areas)                                                                   | 725     | mm/year                                                                         |       |       |       |       |        |       |       |       |       |       |      |                                       |
| Assume January storage is 100% of Soil Moisture Storage                                                                     |         |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| Soil Moisture Storage                                                                                                       | 125 mm  | <-- See "Water Holding Capacity" values in Table 3.1, MOE SWMPDM, 2003          |       |       |       |       |        |       |       |       |       |       |      |                                       |
| *MOECC SWM infiltration calculations                                                                                        |         |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| topography - hilly land                                                                                                     | 0.15    | <-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| soils - silt soils                                                                                                          | 0.2     | <-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| cover - lawns                                                                                                               | 0.1     | <-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| Infiltration factor                                                                                                         | 0.45    |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
| Latitude of site (or climate station)                                                                                       |         |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |
|                                                                                                                             | 43 ° N. |                                                                                 |       |       |       |       |        |       |       |       |       |       |      |                                       |

**TABLE H-2**

| <b>Pre- and Post-Development Monthly Water Balance Components</b><br><b>Based on Thornthwaite's Soil Moisture Balance Approach with a Soil Moisture Retention of 400 mm (mature forest in silt soils)</b><br><b>Precipitation data from Toronto Buttonville Climate Station (1981 - 2010)</b> |       |         |       |       |       |       |        |       |       |       |       |       |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|
| Potential Evapotranspiration Calculation                                                                                                                                                                                                                                                      | JAN   | FEB     | MAR   | APR   | MAY   | JUN   | JUL    | AUG   | SEP   | OCT   | NOV   | DEC   | YEAR |
| Average Temperature (Degree C)                                                                                                                                                                                                                                                                | -5.80 | -5.60   | -0.40 | 6.70  | 13.00 | 18.60 | 21.20  | 20.20 | 15.70 | 8.90  | 3.10  | -2.90 | 7.7  |
| Heat index: $i = (t/5)^{1.514}$                                                                                                                                                                                                                                                               | 0.00  | 0.00    | 0.00  | 1.56  | 4.25  | 7.31  | 8.91   | 8.28  | 5.65  | 2.39  | 0.48  | 0.00  | 38.8 |
| Unadjusted Daily Potential Evapotranspiration U (mm)                                                                                                                                                                                                                                          | 0.00  | 0.00    | 0.00  | 29.28 | 61.03 | 90.77 | 104.93 | 99.46 | 75.23 | 40.11 | 12.46 | 0.00  | 513  |
| Adjusting Factor for U (Latitude 43° 52' N)                                                                                                                                                                                                                                                   | 0.81  | 0.82    | 1.02  | 1.12  | 1.26  | 1.28  | 1.29   | 1.2   | 1.04  | 0.95  | 0.81  | 0.77  |      |
| Adjusted Potential Evapotranspiration PET (mm)                                                                                                                                                                                                                                                | 0     | 0       | 0     | 33    | 77    | 116   | 135    | 119   | 78    | 38    | 10    | 0     | 607  |
|                                                                                                                                                                                                                                                                                               |       |         |       |       |       |       |        |       |       |       |       |       |      |
| COMPONENTS                                                                                                                                                                                                                                                                                    | JAN   | FEB     | MAR   | APR   | MAY   | JUN   | JUL    | AUG   | SEP   | OCT   | NOV   | DEC   | YEAR |
| Precipitation (P)                                                                                                                                                                                                                                                                             | 62    | 51      | 53    | 74    | 80    | 83    | 79     | 76    | 82    | 68    | 80    | 66    | 853  |
| Potential Evapotranspiration (PET)                                                                                                                                                                                                                                                            | 0     | 0       | 0     | 33    | 77    | 116   | 135    | 119   | 78    | 38    | 10    | 0     | 607  |
| P - PET                                                                                                                                                                                                                                                                                       | 62    | 51      | 53    | 41    | 3     | -33   | -56    | -43   | 4     | 30    | 70    | 66    | 246  |
| Change in Soil Moisture Storage                                                                                                                                                                                                                                                               | 0     | 0       | 0     | 0     | 0     | -33   | -56    | -43   | 4     | 30    | 70    | 30    | 0    |
| Soil Moisture Storage max 400 mm                                                                                                                                                                                                                                                              | 400   | 400     | 400   | 400   | 400   | 367   | 310    | 267   | 271   | 301   | 370   | 400   |      |
| Actual Evapotranspiration (AET)                                                                                                                                                                                                                                                               | 0     | 0       | 0     | 33    | 77    | 116   | 135    | 119   | 78    | 38    | 10    | 0     | 607  |
| Soil Moisture Deficit max 400 mm                                                                                                                                                                                                                                                              | 0     | 0       | 0     | 0     | 0     | 33    | 90     | 133   | 129   | 99    | 30    | 0     |      |
| Water Surplus - available for infiltration or runoff                                                                                                                                                                                                                                          | 62    | 51      | 53    | 41    | 3     | 0     | 0      | 0     | 0     | 0     | 0     | 36    | 246  |
| Potential Infiltration (based on MOECC methodology*; independent of temperature)                                                                                                                                                                                                              | 34    | 28      | 29    | 23    | 1     | 0     | 0      | 0     | 0     | 0     | 0     | 20    | 135  |
| Potential Direct Surface Water Runoff (independent of temperature)                                                                                                                                                                                                                            | 28    | 23      | 24    | 19    | 1     | 0     | 0      | 0     | 0     | 0     | 0     | 16    | 111  |
|                                                                                                                                                                                                                                                                                               |       |         |       |       |       |       |        |       |       |       |       |       |      |
| IMPERVIOUS AREA WATER SURPLUS                                                                                                                                                                                                                                                                 |       |         |       |       |       |       |        |       |       |       |       |       |      |
| Precipitation (P)                                                                                                                                                                                                                                                                             | 853   | mm/year |       |       |       |       |        |       |       |       |       |       |      |
| 15%)                                                                                                                                                                                                                                                                                          | 128   | mm/year |       |       |       |       |        |       |       |       |       |       |      |
| P-PE (surplus available for runoff from impervious areas)                                                                                                                                                                                                                                     | 725   | mm/year |       |       |       |       |        |       |       |       |       |       |      |

Assume January storage is 100% of Soil Moisture Storage  
Soil Moisture Storage 400 mm

\*MOECC SWM infiltration calculations  
topography - hilly land 0.15  
soils - silt soils 0.2  
cover - wooded lands 0.2  
**Infiltration factor 0.55**

Latitude of site (or climate station) 43 ° N.

<-- From Environment Canada

<-- From J. M. Lorente (1961). pp. 206

<-- From Environment Canada

<-- See "Water Holding Capacity" values in Table 3.1, MOE SWMPDM, 2003

<-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003

<-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003

<-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003



**TABLE H-3**

| Pre- and Post-Development Monthly Water Balance Components                                                                               |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|-----------------------------------------------------------------------------------------------------------------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|-----------------------------------------------------------------------|
| Based on Thornthwaite's Soil Moisture Balance Approach with a Soil Moisture Retention of 125 mm (urban lawns in silt soils) with Grading |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Precipitation data from Toronto Buttonville Climate Station (1981 - 2010)                                                                |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
|                                                                                                                                          |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Potential Evapotranspiration Calculation                                                                                                 | JAN     | FEB     | MAR                                                                                                             | APR   | MAY   | JUN   | JUL    | AUG   | SEP   | OCT   | NOV   | DEC   | YEAR |                                                                       |
| Average Temperature (Degree C)                                                                                                           | -5.80   | -5.60   | -0.40                                                                                                           | 6.70  | 13.00 | 18.60 | 21.20  | 20.20 | 15.70 | 8.90  | 3.10  | -2.90 | 7.7  | <div><div></div><div>--From Environment Canada</div></div>            |
| Heat index: $i = (t/5)^{1.514}$                                                                                                          | 0.00    | 0.00    | 0.00                                                                                                            | 1.56  | 4.25  | 7.31  | 8.91   | 8.28  | 5.65  | 2.39  | 0.48  | 0.00  | 38.8 |                                                                       |
| Unadjusted Daily Potential Evapotranspiration U (mm)                                                                                     | 0.00    | 0.00    | 0.00                                                                                                            | 29.28 | 61.03 | 90.77 | 104.93 | 99.46 | 75.23 | 40.11 | 12.46 | 0.00  | 513  |                                                                       |
| Adjusting Factor for U (Latitude 43° 52' N)                                                                                              | 0.81    | 0.82    | 1.02                                                                                                            | 1.12  | 1.26  | 1.28  | 1.29   | 1.2   | 1.04  | 0.95  | 0.81  | 0.77  |      | <div><div></div><div>--From J. M. Lorente (1961). pp. 206</div></div> |
| Adjusted Potential Evapotranspiration PET (mm)                                                                                           | 0       | 0       | 0                                                                                                               | 33    | 77    | 116   | 135    | 119   | 78    | 38    | 10    | 0     | 607  |                                                                       |
|                                                                                                                                          |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| COMPONENTS                                                                                                                               | JAN     | FEB     | MAR                                                                                                             | APR   | MAY   | JUN   | JUL    | AUG   | SEP   | OCT   | NOV   | DEC   | YEAR |                                                                       |
| Precipitation (P)                                                                                                                        | 62      | 51      | 53                                                                                                              | 74    | 80    | 83    | 79     | 76    | 82    | 68    | 80    | 66    | 853  | <div><div></div><div>--From Environment Canada</div></div>            |
| Potential Evapotranspiration (PET)                                                                                                       | 0       | 0       | 0                                                                                                               | 33    | 77    | 116   | 135    | 119   | 78    | 38    | 10    | 0     | 607  |                                                                       |
| P - PET                                                                                                                                  | 62      | 51      | 53                                                                                                              | 41    | 3     | -33   | -56    | -43   | 4     | 30    | 70    | 66    | 246  |                                                                       |
| Change in Soil Moisture Storage                                                                                                          | 0       | 0       | 0                                                                                                               | 0     | 0     | -33   | -56    | -35   | 4     | 30    | 70    | 22    | 0    |                                                                       |
| Soil Moisture Storage max 125 mm                                                                                                         | 125     | 125     | 125                                                                                                             | 125   | 125   | 92    | 35     | 0     | 4     | 33    | 103   | 125   |      |                                                                       |
| Actual Evapotranspiration (AET)                                                                                                          | 0       | 0       | 0                                                                                                               | 33    | 77    | 116   | 135    | 111   | 78    | 38    | 10    | 0     | 599  |                                                                       |
| Soil Moisture Deficit max 125 mm                                                                                                         | 0       | 0       | 0                                                                                                               | 0     | 0     | 33    | 90     | 125   | 121   | 92    | 22    | 0     |      |                                                                       |
| Water Surplus - available for infiltration or runoff                                                                                     | 62      | 51      | 53                                                                                                              | 41    | 3     | 0     | 0      | 0     | 0     | 0     | 0     | 44    | 254  |                                                                       |
| Potential Infiltration (based on MOECC methodology*; independent of temperature)                                                         | 31      | 25      | 27                                                                                                              | 21    | 1     | 0     | 0      | 0     | 0     | 0     | 0     | 22    | 127  |                                                                       |
| Potential Direct Surface Water Runoff (independent of temperature)                                                                       | 31      | 25      | 27                                                                                                              | 21    | 1     | 0     | 0      | 0     | 0     | 0     | 0     | 22    | 127  |                                                                       |
|                                                                                                                                          |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| IMPERVIOUS AREA WATER SURPLUS                                                                                                            |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Precipitation (P)                                                                                                                        | 853     | mm/year |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| 15%)                                                                                                                                     | 128     | mm/year |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| P-PE (surplus available for runoff from impervious areas)                                                                                | 725     | mm/year |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Assume January storage is 100% of Soil Moisture Storage                                                                                  |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Soil Moisture Storage                                                                                                                    | 125 mm  |         | <div><div></div><div>-- See "Water Holding Capacity" values in Table 3.1, MOE SWMPDM, 2003</div></div>          |       |       |       |        |       |       |       |       |       |      |                                                                       |
| *MOECC SWM infiltration calculations                                                                                                     |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| topography - graded land                                                                                                                 | 0.2     |         | <div><div></div><div>-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003</div></div> |       |       |       |        |       |       |       |       |       |      |                                                                       |
| soils - silt soils                                                                                                                       | 0.2     |         | <div><div></div><div>-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003</div></div> |       |       |       |        |       |       |       |       |       |      |                                                                       |
| cover - urban lawns                                                                                                                      | 0.1     |         | <div><div></div><div>-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003</div></div> |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Infiltration factor                                                                                                                      | 0.5     |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Latitude of site (or climate station)                                                                                                    |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
|                                                                                                                                          | 43 ° N. |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |

**WATER BALANCE CALCULATIONS**  
4134 16th Avenue, Markham

PROJECT No.300038247



**TABLE H-4**

| Water Balance - EAST DRAFT PLAN AREA- Existing Conditions and Post-Development (no mitigation) |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
|------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------|---------------------------------------------|--------------------------------------|--------------------------------------------------------|-------------------------------------------|------------------------------------|------------------------------------------------------|------------------------------------------|------------------------------------------------------------|-----------------------------------------|-----------------------------------------------|
| 4134 16th Avenue, Markham                                                                      |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Catchment Area                                                                                 | Approx. Land Area* (m <sup>2</sup> ) | Estimated Impervious Fraction for Land Use** | Estimated Impervious Area (m <sup>2</sup> ) | Runoff from Impervious Area*** (m/a) | Runoff Volume from Impervious Area (m <sup>3</sup> /a) | Estimated Pervious Area (m <sup>2</sup> ) | Runoff from Pervious Area*** (m/a) | Runoff Volume from Pervious Area (m <sup>3</sup> /a) | Infiltration from Pervious Area*** (m/a) | Infiltration Volume from Pervious Area (m <sup>3</sup> /a) | Total Runoff Volume (m <sup>3</sup> /a) | Total Infiltration Volume (m <sup>3</sup> /a) |
| <b>East Draft Plan - Existing Land Use</b>                                                     |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Grass Area                                                                                     | 668,400                              | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 668,400                                   | 0.140                              | 93,329                                               | 0.114                                    | 76,360                                                     | 93,329                                  | 76,360                                        |
| Solid Path                                                                                     | 27,000                               | 1.00                                         | 27,000                                      | 0.725                                | 19,576                                                 | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 19,576                                  | 0                                             |
| Building                                                                                       | 3,700                                | 1.00                                         | 3,700                                       | 0.725                                | 2,683                                                  | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 2,683                                   | 0                                             |
| Gravel Area                                                                                    | 4,300                                | 0.50                                         | 2,150                                       | 0.725                                | 1,559                                                  | 2,150                                     | 0.140                              | 300                                                  | 0.114                                    | 246                                                        | 1,859                                   | 246                                           |
| Ponds                                                                                          | 21,900                               | 1.00                                         | 21,900                                      | 0.725                                | 15,879                                                 | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 15,879                                  | 0                                             |
| Woodlot Wetland Feature                                                                        | Wetland                              | 17,400                                       | 0.00                                        | 0                                    | 0.725                                                  | 0                                         | 0.140                              | 2,430                                                | 0.114                                    | 1,988                                                      | 2,430                                   | 1,988                                         |
|                                                                                                | Woodlot                              | 19,000                                       | 0.00                                        | 0                                    | 0.725                                                  | 0                                         | 0.111                              | 2,103                                                | 0.135                                    | 2,570                                                      | 2,103                                   | 2,570                                         |
| <b>TOTAL PRE-DEVELOPMENT</b>                                                                   | <b>761,700</b>                       |                                              | <b>54,750</b>                               |                                      | <b>39,696</b>                                          | <b>706,950</b>                            |                                    | <b>98,162</b>                                        |                                          | <b>81,164</b>                                              | <b>137,858</b>                          | <b>81,164</b>                                 |
| <b>East Draft Plan - Post-Development Land Use</b>                                             |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Residential - Single Detached/Laneway Homes                                                    | 246,000                              | 0.62                                         | 151,290                                     | 0.725                                | 109,693                                                | 94,710                                    | 0.127                              | 12,022                                               | 0.127                                    | 12,022                                                     | 121,715                                 | 12,022                                        |
| Residential - Town Homes                                                                       | 85,000                               | 0.77                                         | 65,365                                      | 0.725                                | 47,393                                                 | 19,635                                    | 0.127                              | 2,492                                                | 0.127                                    | 2,492                                                      | 49,885                                  | 2,492                                         |
| Residential - Medium Density                                                                   | 19,100                               | 0.92                                         | 17,629                                      | 0.725                                | 12,782                                                 | 1,471                                     | 0.127                              | 187                                                  | 0.127                                    | 187                                                        | 12,969                                  | 187                                           |
| School                                                                                         | 24,600                               | 0.77                                         | 18,917                                      | 0.725                                | 13,716                                                 | 5,683                                     | 0.127                              | 721                                                  | 0.127                                    | 721                                                        | 14,437                                  | 721                                           |
| Stormwater Management Pond Blocks                                                              | 68,000                               | 0.54                                         | 36,584                                      | 0.725                                | 26,525                                                 | 31,416                                    | 0.127                              | 3,988                                                | 0.127                                    | 3,988                                                      | 30,513                                  | 3,988                                         |
| ROW                                                                                            | 175,600                              | 0.62                                         | 107,994                                     | 0.725                                | 78,301                                                 | 67,606                                    | 0.127                              | 8,582                                                | 0.127                                    | 8,582                                                      | 86,883                                  | 8,582                                         |
| Parks                                                                                          | 42,700                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 42,700                                    | 0.127                              | 5,420                                                | 0.127                                    | 5,420                                                      | 5,420                                   | 5,420                                         |
| Open Space                                                                                     | 44,800                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 44,800                                    | 0.127                              | 5,687                                                | 0.127                                    | 5,687                                                      | 5,687                                   | 5,687                                         |
| Laneway                                                                                        | 19,500                               | 1.00                                         | 19,500                                      | 0.725                                | 14,138                                                 | 0                                         | 0.127                              | 0                                                    | 0.127                                    | 0                                                          | 14,138                                  | 0                                             |
| Woodlot Wetland Feature                                                                        | Wetland                              | 17,400                                       | 0.00                                        | 0                                    | 0.725                                                  | 0                                         | 0.140                              | 2,430                                                | 0.114                                    | 1,988                                                      | 2,430                                   | 1,988                                         |
|                                                                                                | Woodlot                              | 19,000                                       | 0.00                                        | 0                                    | 0.725                                                  | 0                                         | 0.111                              | 2,103                                                | 0.135                                    | 2,570                                                      | 2,103                                   | 2,570                                         |
| <b>TOTAL POST-DEVELOPMENT</b>                                                                  | <b>761,700</b>                       |                                              | <b>417,280</b>                              |                                      | <b>302,549</b>                                         | <b>344,420</b>                            |                                    | <b>43,632</b>                                        |                                          | <b>43,657</b>                                              | <b>346,180</b>                          | <b>43,657</b>                                 |
| % Change from Pre to Post                                                                      |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            | 251                                     | 46                                            |
| Effect of development (with no mitigation)                                                     |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            | 2.5 times increase in runoff            | 46% reduction in infiltration                 |

\* data provided by the mbtw group

\*\* data provided by Stantec

\*\*\* figures from Tables H-1 and H-2

To balance pre- to post-,  
the infiltration target (m<sup>3</sup>/a)=

**37,507**

**WATER BALANCE CALCULATIONS**  
4134 16th Avenue, Markham

PROJECT No.300038247



**TABLE H-5a**

| <b>Water Balance - WEST DRAFT PLAN BERCZY CATCHMENT AREA - Existing Conditions and Post-Development (no mitigation)</b> |                                           |                                                     |                                                  |                                             |                                                             |                                                |                                           |                                                           |                                                 |                                                                 |                                              |                                                    |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------|--------------------------------------------------|---------------------------------------------|-------------------------------------------------------------|------------------------------------------------|-------------------------------------------|-----------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------|----------------------------------------------------|
| <b>4134 16th Avenue, Markham</b>                                                                                        |                                           |                                                     |                                                  |                                             |                                                             |                                                |                                           |                                                           |                                                 |                                                                 |                                              |                                                    |
| <b>Catchment Area</b>                                                                                                   | <b>Approx. Land Area* (m<sup>2</sup>)</b> | <b>Estimated Impervious Fraction for Land Use**</b> | <b>Estimated Impervious Area (m<sup>2</sup>)</b> | <b>Runoff from Impervious Area*** (m/a)</b> | <b>Runoff Volume from Impervious Area (m<sup>3</sup>/a)</b> | <b>Estimated Pervious Area (m<sup>2</sup>)</b> | <b>Runoff from Pervious Area*** (m/a)</b> | <b>Runoff Volume from Pervious Area (m<sup>3</sup>/a)</b> | <b>Infiltration from Pervious Area*** (m/a)</b> | <b>Infiltration Volume from Pervious Area (m<sup>3</sup>/a)</b> | <b>Total Runoff Volume (m<sup>3</sup>/a)</b> | <b>Total Infiltration Volume (m<sup>3</sup>/a)</b> |
| <b>West Draft Plan Berczy Catchment Area - Existing Land Use</b>                                                        |                                           |                                                     |                                                  |                                             |                                                             |                                                |                                           |                                                           |                                                 |                                                                 |                                              |                                                    |
| Grass Area                                                                                                              | 371,200                                   | 0.00                                                | 0                                                | 0.725                                       | 0                                                           | 371,200                                        | 0.140                                     | 51,831                                                    | 0.114                                           | 42,407                                                          | 51,831                                       | 42,407                                             |
| Solid Path                                                                                                              | 7,500                                     | 1.00                                                | 7,500                                            | 0.725                                       | 5,438                                                       | 0                                              | 0.140                                     | 0                                                         | 0.114                                           | 0                                                               | 5,438                                        | 0                                                  |
| Gravel Area                                                                                                             | 800                                       | 0.50                                                | 400                                              | 0.725                                       | 290                                                         | 400                                            | 0.140                                     | 56                                                        | 0.114                                           | 46                                                              | 346                                          | 46                                                 |
| Ponds                                                                                                                   | 1,100                                     | 1.00                                                | 1,100                                            | 0.725                                       | 798                                                         | 0                                              | 0.140                                     | 0                                                         | 0.114                                           | 0                                                               | 798                                          | 0                                                  |
| <b>TOTAL PRE-DEVELOPMENT</b>                                                                                            | <b>380,600</b>                            |                                                     | <b>9,000</b>                                     |                                             | <b>6,525</b>                                                | <b>371,600</b>                                 |                                           | <b>51,887</b>                                             |                                                 | <b>42,453</b>                                                   | <b>58,412</b>                                | <b>42,453</b>                                      |
| <b>West Draft Plan Berczy Catchment Area - Post-Development Land Use</b>                                                |                                           |                                                     |                                                  |                                             |                                                             |                                                |                                           |                                                           |                                                 |                                                                 |                                              |                                                    |
| Residential - Single Detached/Laneway Homes                                                                             | 138,100                                   | 0.62                                                | 84,932                                           | 0.725                                       | 61,580                                                      | 53,169                                         | 0.127                                     | 6,749                                                     | 0.127                                           | 6,749                                                           | 68,329                                       | 6,749                                              |
| Residential - Town Homes or Laneway Homes                                                                               | 20,400                                    | 0.77                                                | 15,688                                           | 0.725                                       | 11,374                                                      | 4,712                                          | 0.127                                     | 598                                                       | 0.127                                           | 598                                                             | 11,972                                       | 598                                                |
| Mixed Use & Residential - Medium Density                                                                                | 23,300                                    | 0.92                                                | 21,506                                           | 0.725                                       | 15,593                                                      | 1,794                                          | 0.127                                     | 228                                                       | 0.127                                           | 228                                                             | 15,821                                       | 228                                                |
| Stormwater Management Pond Blocks                                                                                       | 11,200                                    | 0.54                                                | 6,026                                            | 0.725                                       | 4,369                                                       | 5,174                                          | 0.127                                     | 657                                                       | 0.127                                           | 657                                                             | 5,026                                        | 657                                                |
| ROW                                                                                                                     | 77,000                                    | 0.62                                                | 47,355                                           | 0.725                                       | 34,335                                                      | 29,645                                         | 0.127                                     | 3,763                                                     | 0.127                                           | 3,763                                                           | 38,098                                       | 3,763                                              |
| Laneway                                                                                                                 | 8,600                                     | 1.00                                                | 8,600                                            | 0.725                                       | 6,235                                                       | 0                                              | 0.127                                     | 0                                                         | 0.127                                           | 0                                                               | 6,235                                        | 0                                                  |
| Parks                                                                                                                   | 36,600                                    | 0.00                                                | 0                                                | 0.725                                       | 0                                                           | 36,600                                         | 0.127                                     | 4,646                                                     | 0.127                                           | 4,646                                                           | 4,646                                        | 4,646                                              |
| Open Space                                                                                                              | 65,400                                    | 0.00                                                | 0                                                | 0.725                                       | 0                                                           | 65,400                                         | 0.127                                     | 8,302                                                     | 0.127                                           | 8,302                                                           | 8,302                                        | 8,302                                              |
| <b>TOTAL POST-DEVELOPMENT</b>                                                                                           | <b>380,600</b>                            |                                                     | <b>184,106</b>                                   |                                             | <b>133,486</b>                                              | <b>196,494</b>                                 |                                           | <b>24,942</b>                                             |                                                 | <b>24,942</b>                                                   | <b>158,428</b>                               | <b>24,942</b>                                      |
| <b>% Change from Pre to Post</b>                                                                                        |                                           |                                                     |                                                  |                                             |                                                             |                                                |                                           |                                                           |                                                 |                                                                 | <b>271</b>                                   | <b>41</b>                                          |
| <b>Effect of development (with no mitigation)</b>                                                                       |                                           |                                                     |                                                  |                                             |                                                             |                                                |                                           |                                                           |                                                 |                                                                 | <b>2.7 times increase in runoff</b>          | <b>41% reduction in infiltration</b>               |

\* data provided by the mbtw group

\*\* data provided by Stantec

\*\*\* figures from Tables H-1 and H-2

To balance pre- to post-,  
the infiltration target (m<sup>3</sup>/a)= **17,510**

TABLE H-5b

| Water Balance - WEST DRAFT PLAN BRUCE CATCHMENT AREA - Existing Conditions and Post-Development (no mitigation)<br>4134 16th Avenue, Markham |                                            |                                                       |                                                   |                                               |                                                                    |                                                 |                                          |                                                               |                                                   |                                                                     |                                               |                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------|---------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------|------------------------------------------|---------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|
| Catchment Area                                                                                                                               | Approx.<br>Land Area*<br>(m <sup>2</sup> ) | Estimated<br>Impervious<br>Fraction for<br>Land Use** | Estimated<br>Impervious<br>Area (m <sup>2</sup> ) | Runoff from<br>Impervious<br>Area***<br>(m/a) | Runoff<br>Volume<br>from<br>Impervious<br>Area (m <sup>3</sup> /a) | Estimated<br>Pervious<br>Area (m <sup>2</sup> ) | Runoff from<br>Pervious<br>Area*** (m/a) | Runoff<br>Volume from<br>Pervious<br>Area (m <sup>3</sup> /a) | Infiltration<br>from<br>Pervious<br>Area*** (m/a) | Infiltration<br>Volume from<br>Pervious Area<br>(m <sup>3</sup> /a) | Total Runoff<br>Volume<br>(m <sup>3</sup> /a) | Total<br>Infiltration<br>Volume (m <sup>3</sup> /a) |
| <b>West Draft Plan Bruce Catchment Area - Existing Land Use</b>                                                                              |                                            |                                                       |                                                   |                                               |                                                                    |                                                 |                                          |                                                               |                                                   |                                                                     |                                               |                                                     |
| Grass Area                                                                                                                                   | 460,080                                    | 0.00                                                  | 0                                                 | 0.725                                         | 0                                                                  | 460,080                                         | 0.140                                    | 64,241                                                        | 0.114                                             | 52,561                                                              | 64,241                                        | 52,561                                              |
| Solid Path                                                                                                                                   | 10,500                                     | 1.00                                                  | 10,500                                            | 0.725                                         | 7,613                                                              | 0                                               | 0.140                                    | 0                                                             | 0.114                                             | 0                                                                   | 7,613                                         | 0                                                   |
| Buildings                                                                                                                                    | 120                                        | 1.00                                                  | 120                                               | 0.725                                         | 87                                                                 | 0                                               | 0.140                                    | 0                                                             | 0.114                                             | 0                                                                   | 87                                            | 0                                                   |
| Gravel Area                                                                                                                                  | 800                                        | 0.50                                                  | 400                                               | 0.725                                         | 290                                                                | 400                                             | 0.140                                    | 56                                                            | 0.114                                             | 46                                                                  | 346                                           | 46                                                  |
| Ponds                                                                                                                                        | 23,600                                     | 1.00                                                  | 23,600                                            | 0.725                                         | 17,111                                                             | 0                                               | 0.140                                    | 0                                                             | 0.114                                             | 0                                                                   | 17,111                                        | 0                                                   |
| Woodlot                                                                                                                                      | 48,000                                     | 0.00                                                  | 0                                                 | 0.725                                         | 0                                                                  | 48,000                                          | 0.111                                    | 5,313                                                         | 0.135                                             | 6,493                                                               | 5,313                                         | 6,493                                               |
| <b>TOTAL PRE-<br/>DEVELOPMENT</b>                                                                                                            | <b>543,100</b>                             |                                                       | <b>34,620</b>                                     |                                               | <b>25,101</b>                                                      | <b>508,480</b>                                  |                                          | <b>69,610</b>                                                 |                                                   | <b>59,100</b>                                                       | <b>94,711</b>                                 | <b>59,100</b>                                       |
| <b>West Draft Plan Bruce Catchment Area - Post-Development Land Use</b>                                                                      |                                            |                                                       |                                                   |                                               |                                                                    |                                                 |                                          |                                                               |                                                   |                                                                     |                                               |                                                     |
| Residential - Single<br>Detached/Laneway Homes                                                                                               | 70,800                                     | 0.62                                                  | 43,542                                            | 0.725                                         | 31,570                                                             | 27,258                                          | 0.127                                    | 3,460                                                         | 0.127                                             | 3,460                                                               | 35,030                                        | 3,460                                               |
| Residential - Town Homes<br>or Laneway Homes                                                                                                 | 25,000                                     | 0.77                                                  | 19,225                                            | 0.725                                         | 13,939                                                             | 5,775                                           | 0.127                                    | 733                                                           | 0.127                                             | 733                                                                 | 14,672                                        | 733                                                 |
| Residential - Stacked Towns<br>Block                                                                                                         | 44,900                                     | 0.92                                                  | 41,443                                            | 0.725                                         | 30,048                                                             | 3,457                                           | 0.127                                    | 439                                                           | 0.127                                             | 439                                                                 | 30,487                                        | 439                                                 |
| Stormwater Management<br>Pond Blocks                                                                                                         | 13,800                                     | 0.54                                                  | 7,424                                             | 0.725                                         | 5,383                                                              | 6,376                                           | 0.127                                    | 809                                                           | 0.127                                             | 809                                                                 | 6,192                                         | 809                                                 |
| ROW                                                                                                                                          | 53,400                                     | 0.62                                                  | 32,841                                            | 0.725                                         | 23,811                                                             | 20,559                                          | 0.127                                    | 2,610                                                         | 0.127                                             | 2,610                                                               | 26,421                                        | 2,610                                               |
| Laneway                                                                                                                                      | 7,000                                      | 1.00                                                  | 7,000                                             | 0.725                                         | 5,075                                                              | 0                                               | 0.127                                    | 0                                                             | 0.127                                             | 0                                                                   | 5,075                                         | 0                                                   |
| Parks                                                                                                                                        | 5,400                                      | 0.00                                                  | 0                                                 | 0.725                                         | 0                                                                  | 5,400                                           | 0.127                                    | 685                                                           | 0.127                                             | 685                                                                 | 685                                           | 685                                                 |
| Open Space                                                                                                                                   | 270,200                                    | 0.00                                                  | 0                                                 | 0.725                                         | 0                                                                  | 270,200                                         | 0.127                                    | 34,298                                                        | 0.127                                             | 34,298                                                              | 34,298                                        | 34,298                                              |
| Ponds                                                                                                                                        | 4,600                                      | 1.00                                                  | 4,600                                             | 0.725                                         | 3,335                                                              | 0                                               | 0.127                                    | 0                                                             | 0.127                                             | 0                                                                   | 3,335                                         | 0                                                   |
| Woodlot                                                                                                                                      | 48,000                                     | 0.00                                                  | 0                                                 | 0.725                                         | 0                                                                  | 48,000                                          | 0.111                                    | 5,313                                                         | 0.135                                             | 6,493                                                               | 5,313                                         | 6,493                                               |
| <b>TOTAL POST-<br/>DEVELOPMENT</b>                                                                                                           | <b>543,100</b>                             |                                                       | <b>156,075</b>                                    |                                               | <b>113,162</b>                                                     | <b>387,025</b>                                  |                                          | <b>48,348</b>                                                 |                                                   | <b>49,528</b>                                                       | <b>161,510</b>                                | <b>49,528</b>                                       |
| % Change from Pre to Post                                                                                                                    |                                            |                                                       |                                                   |                                               |                                                                    |                                                 |                                          |                                                               |                                                   |                                                                     | 171                                           | 16                                                  |
| Effect of development (with no mitigation)                                                                                                   |                                            |                                                       |                                                   |                                               |                                                                    |                                                 |                                          |                                                               |                                                   |                                                                     | 1.7 times<br>increase in<br>runoff            | 16% reduction<br>in infiltration                    |

\* data provided by the mbtw group

\*\* data provided by Stantec

\*\*\* figures from Tables H-1 and H-2

To balance pre- to post-,  
the infiltration target (m<sup>3</sup>/a)=

**9,572**





**TABLE H-6**

| Pre- and Post-Development Monthly Water Balance Components                                                                                     |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|-----------------------------------------------------------------------------------------------------------------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|-----------------------------------------------------------------------|
| Based on Thornthwaite's Soil Moisture Balance Approach with a Soil Moisture Retention of 125 mm (urban lawns in silt soils) with Amended Soils |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Precipitation data from Toronto Buttonville Climate Station (1981 - 2010)                                                                      |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
|                                                                                                                                                |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Potential Evapotranspiration Calculation                                                                                                       | JAN     | FEB     | MAR                                                                                                             | APR   | MAY   | JUN   | JUL    | AUG   | SEP   | OCT   | NOV   | DEC   | YEAR |                                                                       |
| Average Temperature (Degree C)                                                                                                                 | -5.80   | -5.60   | -0.40                                                                                                           | 6.70  | 13.00 | 18.60 | 21.20  | 20.20 | 15.70 | 8.90  | 3.10  | -2.90 | 7.7  | <div><div></div><div>--From Environment Canada</div></div>            |
| Heat index: $i = (t/5)^{1.514}$                                                                                                                | 0.00    | 0.00    | 0.00                                                                                                            | 1.56  | 4.25  | 7.31  | 8.91   | 8.28  | 5.65  | 2.39  | 0.48  | 0.00  | 38.8 |                                                                       |
| Unadjusted Daily Potential Evapotranspiration U (mm)                                                                                           | 0.00    | 0.00    | 0.00                                                                                                            | 29.28 | 61.03 | 90.77 | 104.93 | 99.46 | 75.23 | 40.11 | 12.46 | 0.00  | 513  |                                                                       |
| Adjusting Factor for U (Latitude 43° 52' N)                                                                                                    | 0.81    | 0.82    | 1.02                                                                                                            | 1.12  | 1.26  | 1.28  | 1.29   | 1.2   | 1.04  | 0.95  | 0.81  | 0.77  |      | <div><div></div><div>--From J. M. Lorente (1961). pp. 206</div></div> |
| Adjusted Potential Evapotranspiration PET (mm)                                                                                                 | 0       | 0       | 0                                                                                                               | 33    | 77    | 116   | 135    | 119   | 78    | 38    | 10    | 0     | 607  |                                                                       |
|                                                                                                                                                |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| COMPONENTS                                                                                                                                     | JAN     | FEB     | MAR                                                                                                             | APR   | MAY   | JUN   | JUL    | AUG   | SEP   | OCT   | NOV   | DEC   | YEAR |                                                                       |
| Precipitation (P)                                                                                                                              | 62      | 51      | 53                                                                                                              | 74    | 80    | 83    | 79     | 76    | 82    | 68    | 80    | 66    | 853  | <div><div></div><div>--From Environment Canada</div></div>            |
| Potential Evapotranspiration (PET)                                                                                                             | 0       | 0       | 0                                                                                                               | 33    | 77    | 116   | 135    | 119   | 78    | 38    | 10    | 0     | 607  |                                                                       |
| P - PET                                                                                                                                        | 62      | 51      | 53                                                                                                              | 41    | 3     | -33   | -56    | -43   | 4     | 30    | 70    | 66    | 246  |                                                                       |
| Change in Soil Moisture Storage                                                                                                                | 0       | 0       | 0                                                                                                               | 0     | 0     | -33   | -56    | -35   | 4     | 30    | 70    | 22    | 0    |                                                                       |
| Soil Moisture Storage max 125 mm                                                                                                               | 125     | 125     | 125                                                                                                             | 125   | 125   | 92    | 35     | 0     | 4     | 33    | 103   | 125   |      |                                                                       |
| Actual Evapotranspiration (AET)                                                                                                                | 0       | 0       | 0                                                                                                               | 33    | 77    | 116   | 135    | 111   | 78    | 38    | 10    | 0     | 599  |                                                                       |
| Soil Moisture Deficit max 125 mm                                                                                                               | 0       | 0       | 0                                                                                                               | 0     | 0     | 33    | 90     | 125   | 121   | 92    | 22    | 0     |      |                                                                       |
| Water Surplus - available for infiltration or runoff                                                                                           | 62      | 51      | 53                                                                                                              | 41    | 3     | 0     | 0      | 0     | 0     | 0     | 0     | 44    | 254  |                                                                       |
| Potential Infiltration (based on MOECC methodology*; independent of temperature)                                                               | 34      | 28      | 29                                                                                                              | 23    | 1     | 0     | 0      | 0     | 0     | 0     | 0     | 24    | 140  |                                                                       |
| Potential Direct Surface Water Runoff (independent of temperature)                                                                             | 28      | 23      | 24                                                                                                              | 19    | 1     | 0     | 0      | 0     | 0     | 0     | 0     | 20    | 114  |                                                                       |
|                                                                                                                                                |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| IMPERVIOUS AREA WATER SURPLUS                                                                                                                  |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Precipitation (P)                                                                                                                              | 853     | mm/year |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| 15%)                                                                                                                                           | 128     | mm/year |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| P-PE (surplus available for runoff from impervious areas)                                                                                      | 725     | mm/year |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Assume January storage is 100% of Soil Moisture Storage                                                                                        |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Soil Moisture Storage                                                                                                                          | 125 mm  |         | <div><div></div><div>-- See "Water Holding Capacity" values in Table 3.1, MOE SWMPDM, 2003</div></div>          |       |       |       |        |       |       |       |       |       |      |                                                                       |
| *MOECC SWM infiltration calculations                                                                                                           |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| topography - graded land                                                                                                                       | 0.2     |         | <div><div></div><div>-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003</div></div> |       |       |       |        |       |       |       |       |       |      |                                                                       |
| soils - silt soils + additional topsoil depth                                                                                                  | 0.25    |         | <div><div></div><div>-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003</div></div> |       |       |       |        |       |       |       |       |       |      |                                                                       |
| cover - urban lawns                                                                                                                            | 0.1     |         | <div><div></div><div>-- Infiltration Factors from the bottom section of Table 3.1, MOE SWMPDM, 2003</div></div> |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Infiltration factor                                                                                                                            | 0.55    |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
| Latitude of site (or climate station)                                                                                                          |         |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |
|                                                                                                                                                | 43 ° N. |         |                                                                                                                 |       |       |       |        |       |       |       |       |       |      |                                                                       |



TABLE H-7

| Water Balance - EAST DRAFT PLAN AREA - Existing Conditions and Post-Development with Mitigation (LIDs)<br>4134 16th Avenue, Markham |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------|----------------------------------------------|---------------------------------------------|--------------------------------------|--------------------------------------------------------|-------------------------------------------|------------------------------------|------------------------------------------------------|------------------------------------------|------------------------------------------------------------|-----------------------------------------|-----------------------------------------------|
|                                                                                                                                     |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Catchment Area                                                                                                                      |                                                                           | Approx. Land Area* (m <sup>2</sup> ) | Estimated Impervious Fraction for Land Use** | Estimated Impervious Area (m <sup>2</sup> ) | Runoff from Impervious Area*** (m/a) | Runoff Volume from Impervious Area (m <sup>3</sup> /a) | Estimated Pervious Area (m <sup>2</sup> ) | Runoff from Pervious Area*** (m/a) | Runoff Volume from Pervious Area (m <sup>3</sup> /a) | Infiltration from Pervious Area*** (m/a) | Infiltration Volume from Pervious Area (m <sup>3</sup> /a) | Total Runoff Volume (m <sup>3</sup> /a) | Total Infiltration Volume (m <sup>3</sup> /a) |
| East Draft Plan - Existing Land Use                                                                                                 |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Grass Area                                                                                                                          |                                                                           | 668,400                              | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 668,400                                   | 0.140                              | 93,329                                               | 0.114                                    | 76,360                                                     | 93,329                                  | 76,360                                        |
| Solid Path                                                                                                                          |                                                                           | 27,000                               | 1.00                                         | 27,000                                      | 0.725                                | 19,576                                                 | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 19,576                                  | 0                                             |
| Building                                                                                                                            |                                                                           | 3,700                                | 1.00                                         | 3,700                                       | 0.725                                | 2,683                                                  | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 2,683                                   | 0                                             |
| Gravel Area                                                                                                                         |                                                                           | 4,300                                | 0.50                                         | 2,150                                       | 0.725                                | 1,559                                                  | 2,150                                     | 0.140                              | 300                                                  | 0.114                                    | 246                                                        | 1,859                                   | 246                                           |
| Ponds                                                                                                                               |                                                                           | 21,900                               | 1.00                                         | 21,900                                      | 0.725                                | 15,879                                                 | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 15,879                                  | 0                                             |
| Woodlot Wetland Feature                                                                                                             | Wetland                                                                   | 17,400                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 17,400                                    | 0.140                              | 2,430                                                | 0.114                                    | 1,988                                                      | 2,430                                   | 1,988                                         |
|                                                                                                                                     | Woodlot                                                                   | 19,000                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 19,000                                    | 0.111                              | 2,103                                                | 0.135                                    | 2,570                                                      | 2,103                                   | 2,570                                         |
| TOTAL PRE-DEVELOPMENT                                                                                                               |                                                                           | 761,700                              |                                              | 54,750                                      |                                      | 39,696                                                 | 706,950                                   |                                    | 98,162                                               |                                          | 81,164                                                     | 137,858                                 | 81,164                                        |
| East Draft Plan - Post-Development Land Use                                                                                         |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Residential - Single Detached or Laneway Homes                                                                                      | Less Rear Yards and Roof Areas (described below)                          | 178,600                              | 0.64                                         | 114,838                                     | 0.725                                | 83,263                                                 | 63,762                                    | 0.127                              | 8,094                                                | 0.127                                    | 8,094                                                      | 91,357                                  | 8,094                                         |
|                                                                                                                                     | Rear Yard Amended Soils                                                   | 31,000                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 31,000                                    | 0.114                              | 3,542                                                | 0.140                                    | 4,329                                                      | 3,542                                   | 4,329                                         |
|                                                                                                                                     | Roof to Grass - 25% infiltration                                          | 29,100                               | 1.00                                         | 29,100                                      | 0.725                                | 21,099                                                 | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 15,824                                  | 5,275                                         |
|                                                                                                                                     | Roof to Infiltration - designed for 25 mm storm (~ 93% of total rainfall) | 5,200                                | 1.00                                         | 5,200                                       | 0.725                                | 3,770                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 264                                     | 3,506                                         |
|                                                                                                                                     | Roof to Area E                                                            | 2,100                                | 1.00                                         | 2,100                                       | 0.725                                | 1,523                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 1,142                                   | 381                                           |
| Residential - Town Homes                                                                                                            | Less Rear Yards and Roof Areas (described below)                          | 70,300                               | 0.77                                         | 54,187                                      | 0.725                                | 39,288                                                 | 16,113                                    | 0.127                              | 2,045                                                | 0.127                                    | 2,045                                                      | 41,334                                  | 2,045                                         |
|                                                                                                                                     | Rear Yard Amended Soils                                                   | 4,600                                | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 4,600                                     | 0.114                              | 526                                                  | 0.140                                    | 642                                                        | 526                                     | 642                                           |
|                                                                                                                                     | Roof to Grass - 25% infiltration                                          | 7,400                                | 1.00                                         | 7,400                                       | 0.725                                | 5,365                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 4,024                                   | 1,341                                         |
|                                                                                                                                     | Roof to Area E                                                            | 1,000                                | 1.00                                         | 1,000                                       | 0.725                                | 725                                                    | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 544                                     | 181                                           |
|                                                                                                                                     | Roof to Infiltration - designed for 25 mm storm (~ 93% of total           | 1,700                                | 1.00                                         | 1,700                                       | 0.725                                | 1,233                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 86                                      | 1,146                                         |
| Residential - Stacked Towns Block                                                                                                   | Less Roof Areas (described below)                                         | 6,300                                | 0.76                                         | 4,773                                       | 0.725                                | 3,461                                                  | 1,527                                     | 0.127                              | 194                                                  | 0.127                                    | 194                                                        | 3,654                                   | 194                                           |
|                                                                                                                                     | Roof to Infiltration - designed for 25 mm storm (~ 93% of total rainfall) | 4,900                                | 1.00                                         | 4,900                                       | 0.725                                | 3,553                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 249                                     | 3,304                                         |
|                                                                                                                                     | Roof to Area E                                                            | 7,900                                | 1.00                                         | 7,900                                       | 0.725                                | 5,728                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 4,296                                   | 1,432                                         |
| School                                                                                                                              | Less Roof Areas (described below)                                         | 18,450                               | 0.69                                         | 12,767                                      | 0.725                                | 9,257                                                  | 5,683                                     | 0.127                              | 721                                                  | 0.127                                    | 721                                                        | 9,978                                   | 721                                           |
|                                                                                                                                     | Roof to Area E                                                            | 6,150                                | 1.00                                         | 6,150                                       | 0.725                                | 4,459                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 3,344                                   | 1,115                                         |
| Stormwater Management                                                                                                               |                                                                           | 68,000                               | 0.54                                         | 36,584                                      | 0.725                                | 26,525                                                 | 31,416                                    | 0.127                              | 3,988                                                | 0.127                                    | 3,988                                                      | 30,513                                  | 3,988                                         |
| ROW                                                                                                                                 |                                                                           | 175,600                              | 0.62                                         | 107,994                                     | 0.725                                | 78,301                                                 | 67,606                                    | 0.127                              | 8,582                                                | 0.127                                    | 8,582                                                      | 86,883                                  | 8,582                                         |
| Parks                                                                                                                               |                                                                           | 42,700                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 42,700                                    | 0.127                              | 5,420                                                | 0.127                                    | 5,420                                                      | 5,420                                   | 5,420                                         |
| Open Space                                                                                                                          |                                                                           | 44,800                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 44,800                                    | 0.127                              | 5,687                                                | 0.127                                    | 5,687                                                      | 5,687                                   | 5,687                                         |
| Laneway                                                                                                                             |                                                                           | 19,500                               | 1.00                                         | 19,500                                      | 0.725                                | 14,138                                                 | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 14,138                                  | 0                                             |
| Woodlot Wetland Feature                                                                                                             | Wetland                                                                   | 17,400                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 17,400                                    | 0.140                              | 2,430                                                | 0.114                                    | 1,988                                                      | 2,430                                   | 1,988                                         |
|                                                                                                                                     | Woodlot                                                                   | 19,000                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 19,000                                    | 0.111                              | 2,103                                                | 0.135                                    | 2,570                                                      | 2,103                                   | 2,570                                         |
| TOTAL POST-DEVELOPMENT                                                                                                              |                                                                           | 761,700                              |                                              | 416,093                                     |                                      | 301,688                                                | 345,607                                   |                                    | 43,330                                               |                                          | 44,260                                                     | 327,337                                 | 61,941                                        |
| % Change from Pre to Post                                                                                                           |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            | 237                                     | 24                                            |
| Effect of development (with mitigation)                                                                                             |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            | 2.4 times increase in runoff            | 24% reduction in infiltration                 |

\* data provided by the mbtw group

\*\* data provided by Stantec

\*\*\* figures from Tables H-1 and H-2

To balance pre- to post-,  
the infiltration target (m³/a)= **19,223**



TABLE H-8a

| Water Balance - WEST DRAFT PLAN BERCZY CATCHMENT AREA - Existing Conditions and Post-Development with Mitigation (LIDs) |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------|----------------------------------------------|---------------------------------------------|--------------------------------------|--------------------------------------------------------|-------------------------------------------|------------------------------------|------------------------------------------------------|------------------------------------------|------------------------------------------------------------|-----------------------------------------|-----------------------------------------------|
| 4134 16th Avenue, Markham                                                                                               |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Catchment Area                                                                                                          |                                                                           | Approx. Land Area* (m <sup>2</sup> ) | Estimated Impervious Fraction for Land Use** | Estimated Impervious Area (m <sup>2</sup> ) | Runoff from Impervious Area*** (m/a) | Runoff Volume from Impervious Area (m <sup>3</sup> /a) | Estimated Pervious Area (m <sup>2</sup> ) | Runoff from Pervious Area*** (m/a) | Runoff Volume from Pervious Area (m <sup>3</sup> /a) | Infiltration from Pervious Area*** (m/a) | Infiltration Volume from Pervious Area (m <sup>3</sup> /a) | Total Runoff Volume (m <sup>3</sup> /a) | Total Infiltration Volume (m <sup>3</sup> /a) |
| West Draft Plan Berczy Catchment Area - Exising Land Use                                                                |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Grass Area                                                                                                              |                                                                           | 371,200                              | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 371,200                                   | 0.140                              | 51,831                                               | 0.114                                    | 42,407                                                     | 51,831                                  | 42,407                                        |
| Solid Path                                                                                                              |                                                                           | 7,500                                | 1.00                                         | 7,500                                       | 0.725                                | 5,438                                                  | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 5,438                                   | 0                                             |
| Gravel Area                                                                                                             |                                                                           | 800                                  | 0.50                                         | 400                                         | 0.725                                | 290                                                    | 400                                       | 0.140                              | 56                                                   | 0.114                                    | 46                                                         | 346                                     | 46                                            |
| Ponds                                                                                                                   |                                                                           | 1,100                                | 1.00                                         | 1,100                                       | 0.725                                | 798                                                    | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 798                                     | 0                                             |
| TOTAL PRE-DEVELOPMENT                                                                                                   |                                                                           | 380,600                              |                                              | 9,000                                       |                                      | 6,525                                                  | 371,600                                   |                                    | 51,887                                               |                                          | 42,453                                                     | 58,412                                  | 42,453                                        |
| West Draft Plan Berczy Catchment Area - Post-Development Land Use                                                       |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Residential - Single Detached or Laneway Homes                                                                          | Less Rear Yards and Roof Areas (described below)                          | 79,100                               | 0.57                                         | 44,964                                      | 0.725                                | 32,601                                                 | 34,136                                    | 0.127                              | 4,333                                                | 0.127                                    | 4,333                                                      | 36,934                                  | 4,333                                         |
|                                                                                                                         | Rear Yard Amended Soils                                                   | 19,000                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 19,000                                    | 0.114                              | 2,171                                                | 0.140                                    | 2,653                                                      | 2,171                                   | 2,653                                         |
|                                                                                                                         | Roof to Grass - 25% infiltration                                          | 21,000                               | 1.00                                         | 21,000                                      | 0.725                                | 15,226                                                 | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 11,420                                  | 3,807                                         |
|                                                                                                                         | Roof to Infiltration - designed for 25 mm storm (~ 93% of total rainfall) | 13,600                               | 1.00                                         | 13,600                                      | 0.725                                | 9,861                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 690                                     | 9,170                                         |
|                                                                                                                         | Roof to Enclave - designed for 25 mm storm (~ 93% of total rainfall)      | 5,400                                | 1.00                                         | 5,400                                       | 0.725                                | 3,915                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 274                                     | 3,641                                         |
| Residential - Town Homes or Laneway Homes                                                                               | Less Rear Yards and Roof Areas (described below)                          | 8,100                                | 0.78                                         | 6,316                                       | 0.725                                | 4,580                                                  | 1,784                                     | 0.127                              | 226                                                  | 0.127                                    | 226                                                        | 4,806                                   | 226                                           |
|                                                                                                                         | Rear Yard Amended Soils                                                   | 2,900                                | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 2,900                                     | 0.114                              | 331                                                  | 0.140                                    | 405                                                        | 331                                     | 405                                           |
|                                                                                                                         | Roof to Grass - 25% infiltration                                          | 5,200                                | 1.00                                         | 5,200                                       | 0.725                                | 3,770                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 2,828                                   | 943                                           |
|                                                                                                                         | Roof to Infiltration - designed for 25 mm storm (~ 93% of total rainfall) | 4,200                                | 1.00                                         | 4,200                                       | 0.725                                | 3,045                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 213                                     | 2,832                                         |
| Mixed Use & Residential - Medium Density                                                                                | Less Roof Areas (described below)                                         | 6,700                                | 0.73                                         | 4,905                                       | 0.725                                | 3,556                                                  | 1,795                                     | 0.127                              | 228                                                  | 0.127                                    | 228                                                        | 3,784                                   | 228                                           |
|                                                                                                                         | Roof to Infiltration - designed for 25 mm storm (~ 93% of total rainfall) | 14,000                               | 1.00                                         | 14,000                                      | 0.725                                | 10,151                                                 | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 711                                     | 9,440                                         |
|                                                                                                                         | Roof to Park (accounted for below)                                        | 2,600                                | 1.00                                         | 2,600                                       | 0.725                                | 1,885                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | NA                                      | NA                                            |
| Stormwater Management Pond Blocks                                                                                       |                                                                           | 11,200                               | 0.54                                         | 6,026                                       | 0.725                                | 4,369                                                  | 5,174                                     | 0.127                              | 657                                                  | 0.127                                    | 657                                                        | 5,026                                   | 657                                           |
| ROW                                                                                                                     |                                                                           | 77,000                               | 0.62                                         | 47,355                                      | 0.725                                | 34,335                                                 | 29,645                                    | 0.127                              | 3,763                                                | 0.127                                    | 3,763                                                      | 38,098                                  | 3,763                                         |
| Laneway                                                                                                                 |                                                                           | 8,600                                | 1.00                                         | 8,600                                       | 0.725                                | 6,235                                                  | 0                                         | 0.127                              | 0                                                    | 0.127                                    | 0                                                          | 6,235                                   | 0                                             |
| Parks                                                                                                                   | Park Blocks                                                               | 36,600                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 36,600                                    | 0.127                              | 4,646                                                | 0.127                                    | 4,646                                                      | 4,646                                   | 4,646                                         |
|                                                                                                                         | Roof to Park from Mixed Use Area above- 25% infiltration                  | NA                                   | NA                                           | NA                                          | NA                                   | NA                                                     | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 1,414                                   | 471                                           |
| Open Space                                                                                                              |                                                                           | 65,400                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 65,400                                    | 0.127                              | 8,302                                                | 0.127                                    | 8,302                                                      | 8,302                                   | 8,302                                         |
| TOTAL POST-DEVELOPMENT                                                                                                  |                                                                           | 380,600                              |                                              | 184,166                                     |                                      | 133,529                                                | 196,434                                   |                                    | 24,657                                               |                                          | 25,213                                                     | 127,882                                 | 55,517                                        |
| % Change from Pre to Post                                                                                               |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            | 219                                     | -31                                           |
| Effect of development (with mitigation)                                                                                 |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            | 2.2 times increase in runoff            | 31% increase in infiltration                  |

\* data provided by the mbtw group

\*\* data provided by Stantec

\*\*\* figures from Tables H-1 and H-2

To balance pre- to post-,  
the infiltration target (m<sup>3</sup>/a)=

-13,064



TABLE H-8b

| Water Balance - WEST DRAFT PLAN BRUCE CATCHMENT AREA - Existing Conditions and Post-Development with Mitigation (LIDs) |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------|----------------------------------------------|---------------------------------------------|--------------------------------------|--------------------------------------------------------|-------------------------------------------|------------------------------------|------------------------------------------------------|------------------------------------------|------------------------------------------------------------|-----------------------------------------|-----------------------------------------------|
| 4134 16th Avenue, Markham                                                                                              |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
|                                                                                                                        |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Catchment Area                                                                                                         |                                                                           | Approx. Land Area* (m <sup>2</sup> ) | Estimated Impervious Fraction for Land Use** | Estimated Impervious Area (m <sup>2</sup> ) | Runoff from Impervious Area*** (m/a) | Runoff Volume from Impervious Area (m <sup>3</sup> /a) | Estimated Pervious Area (m <sup>2</sup> ) | Runoff from Pervious Area*** (m/a) | Runoff Volume from Pervious Area (m <sup>3</sup> /a) | Infiltration from Pervious Area*** (m/a) | Infiltration Volume from Pervious Area (m <sup>3</sup> /a) | Total Runoff Volume (m <sup>3</sup> /a) | Total Infiltration Volume (m <sup>3</sup> /a) |
| West Draft Plan Bruce Catchment Area - Exising Land Use                                                                |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Grass Area                                                                                                             |                                                                           | 460,080                              | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 460,080                                   | 0.140                              | 64,241                                               | 0.114                                    | 52,561                                                     | 64,241                                  | 52,561                                        |
| Solid Path                                                                                                             |                                                                           | 10,500                               | 1.00                                         | 10,500                                      | 0.725                                | 7,613                                                  | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 7,613                                   | 0                                             |
| Buildings                                                                                                              |                                                                           | 120                                  | 1.00                                         | 120                                         | 0.725                                | 87                                                     | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 87                                      | 0                                             |
| Gravel Area                                                                                                            |                                                                           | 800                                  | 0.50                                         | 400                                         | 0.725                                | 290                                                    | 400                                       | 0.140                              | 56                                                   | 0.114                                    | 46                                                         | 346                                     | 46                                            |
| Ponds                                                                                                                  |                                                                           | 23,600                               | 1.00                                         | 23,600                                      | 0.725                                | 17,111                                                 | 0                                         | 0.140                              | 0                                                    | 0.114                                    | 0                                                          | 17,111                                  | 0                                             |
| Woodlot                                                                                                                |                                                                           | 48,000                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 48,000                                    | 0.111                              | 5,313                                                | 0.135                                    | 6,493                                                      | 5,313                                   | 6,493                                         |
| TOTAL PRE-DEVELOPMENT                                                                                                  |                                                                           | 543,100                              |                                              | 34,620                                      |                                      | 25,101                                                 | 508,480                                   |                                    | 69,610                                               |                                          | 59,100                                                     | 94,711                                  | 59,100                                        |
| West Draft Plan Bruce Catchment Area - Post-Development Land Use                                                       |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            |                                         |                                               |
| Residential - Single Detached or Laneway Homes                                                                         | Less Rear Yards and Roof Areas (described below)                          | 39,700                               | 0.53                                         | 21,189                                      | 0.725                                | 15,363                                                 | 18,511                                    | 0.127                              | 2,350                                                | 0.127                                    | 2,350                                                      | 17,713                                  | 2,350                                         |
|                                                                                                                        | Rear Yard Amended Soils                                                   | 8,700                                | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 8,700                                     | 0.114                              | 994                                                  | 0.140                                    | 1,215                                                      | 994                                     | 1,215                                         |
|                                                                                                                        | Roof to Grass - 25% infiltration                                          | 9,600                                | 1.00                                         | 9,600                                       | 0.725                                | 6,960                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 5,220                                   | 1,740                                         |
|                                                                                                                        | Roof to Infiltration - designed for 25 mm storm (~ 93% of total rainfall) | 10,300                               | 1.00                                         | 10,300                                      | 0.725                                | 7,468                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 523                                     | 6,945                                         |
|                                                                                                                        | Roof to Enclave - designed for 25 mm storm (~ 93% of total rainfall)      | 2,500                                | 1.00                                         | 2,500                                       | 0.725                                | 1,813                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 127                                     | 1,686                                         |
| Residential - Town Homes or Laneway Homes                                                                              | Less Rear Yards and Roof Areas (described below)                          | 18,400                               | 0.76                                         | 14,044                                      | 0.725                                | 10,183                                                 | 4,356                                     | 0.127                              | 553                                                  | 0.127                                    | 553                                                        | 10,736                                  | 553                                           |
|                                                                                                                        | Rear Yard Amended Soils                                                   | 1,400                                | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 1,400                                     | 0.114                              | 160                                                  | 0.140                                    | 195                                                        | 160                                     | 195                                           |
|                                                                                                                        | Roof to Grass - 25% infiltration                                          | 2,600                                | 1.00                                         | 2,600                                       | 0.725                                | 1,885                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 1,414                                   | 471                                           |
|                                                                                                                        | Roof to Infiltration - designed for 25 mm storm (~ 93% of total rainfall) | 2,600                                | 1.00                                         | 2,600                                       | 0.725                                | 1,885                                                  | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 132                                     | 1,753                                         |
| Residential - Stacked Towns Block                                                                                      | Less Roof Areas (described below)                                         | 17,000                               | 0.80                                         | 13,542                                      | 0.725                                | 9,819                                                  | 3,458                                     | 0.127                              | 439                                                  | 0.127                                    | 439                                                        | 10,258                                  | 439                                           |
|                                                                                                                        | Roof to Infiltration - designed for 25 mm storm (~ 93% of total rainfall) | 27,100                               | 1.00                                         | 27,100                                      | 0.725                                | 19,649                                                 | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 1,375                                   | 18,273                                        |
|                                                                                                                        | Roof to Park (accounted for below)                                        | 800                                  | 1.00                                         | 800                                         | 0.725                                | 580                                                    | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | NA                                      | NA                                            |
| Stormwater Management Pond Blocks                                                                                      |                                                                           | 13,800                               | 0.54                                         | 7,424                                       | 0.725                                | 5,383                                                  | 6,376                                     | 0.127                              | 809                                                  | 0.127                                    | 809                                                        | 6,192                                   | 809                                           |
| ROW                                                                                                                    |                                                                           | 53,400                               | 0.62                                         | 32,841                                      | 0.725                                | 23,811                                                 | 20,559                                    | 0.127                              | 2,610                                                | 0.127                                    | 2,610                                                      | 26,421                                  | 2,610                                         |
| Laneway                                                                                                                |                                                                           | 7,000                                | 1.00                                         | 7,000                                       | 0.725                                | 5,075                                                  | 0                                         | 0.127                              | 0                                                    | 0.127                                    | 0                                                          | 5,075                                   | 0                                             |
| Parks                                                                                                                  | Park Blocks                                                               | 5,400                                | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 5,400                                     | 0.127                              | 685                                                  | 0.127                                    | 685                                                        | 685                                     | 685                                           |
|                                                                                                                        | Roof to Park from Mixed Use Area above 25% infiltration                   | NA                                   | NA                                           | NA                                          | NA                                   | NA                                                     | NA                                        | NA                                 | NA                                                   | NA                                       | NA                                                         | 435                                     | 145                                           |
| Open Space                                                                                                             |                                                                           | West Draft Plan                      | 270,200                                      | 0.00                                        | 0                                    | 0.725                                                  | 0                                         | 270,200                            | 0.127                                                | 34,298                                   | 0.127                                                      | 34,298                                  | 34,298                                        |
| Ponds                                                                                                                  |                                                                           | 4,600                                | 1.00                                         | 4,600                                       | 0.725                                | 3,335                                                  | 0                                         | 0.127                              | 0                                                    | 0.127                                    | 0                                                          | 3,335                                   | 0                                             |
| Woodlot                                                                                                                |                                                                           | 48,000                               | 0.00                                         | 0                                           | 0.725                                | 0                                                      | 48,000                                    | 0.111                              | 5,313                                                | 0.135                                    | 6,493                                                      | 5,313                                   | 6,493                                         |
| TOTAL POST-DEVELOPMENT                                                                                                 |                                                                           | 543,100                              |                                              | 156,141                                     |                                      | 113,210                                                | 386,959                                   |                                    | 48,211                                               |                                          | 49,648                                                     | 130,407                                 | 80,662                                        |
| % Change from Pre to Post                                                                                              |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            | 138                                     | -36                                           |
| Effect of development (with mitigation)                                                                                |                                                                           |                                      |                                              |                                             |                                      |                                                        |                                           |                                    |                                                      |                                          |                                                            | 1.4 times increase in runoff            | 36% increase in infiltration                  |

\* data provided by the mbtw group

\*\* data provided by Stantec

\*\*\* figures from Tables H-1 and H-2

To balance pre- to post-,  
the infiltration target (m³/a)=

-21,562

**WATER BALANCE CALCULATIONS**  
4134 16th Avenue, Markham

PROJECT No.300038247



**TABLE H-9**

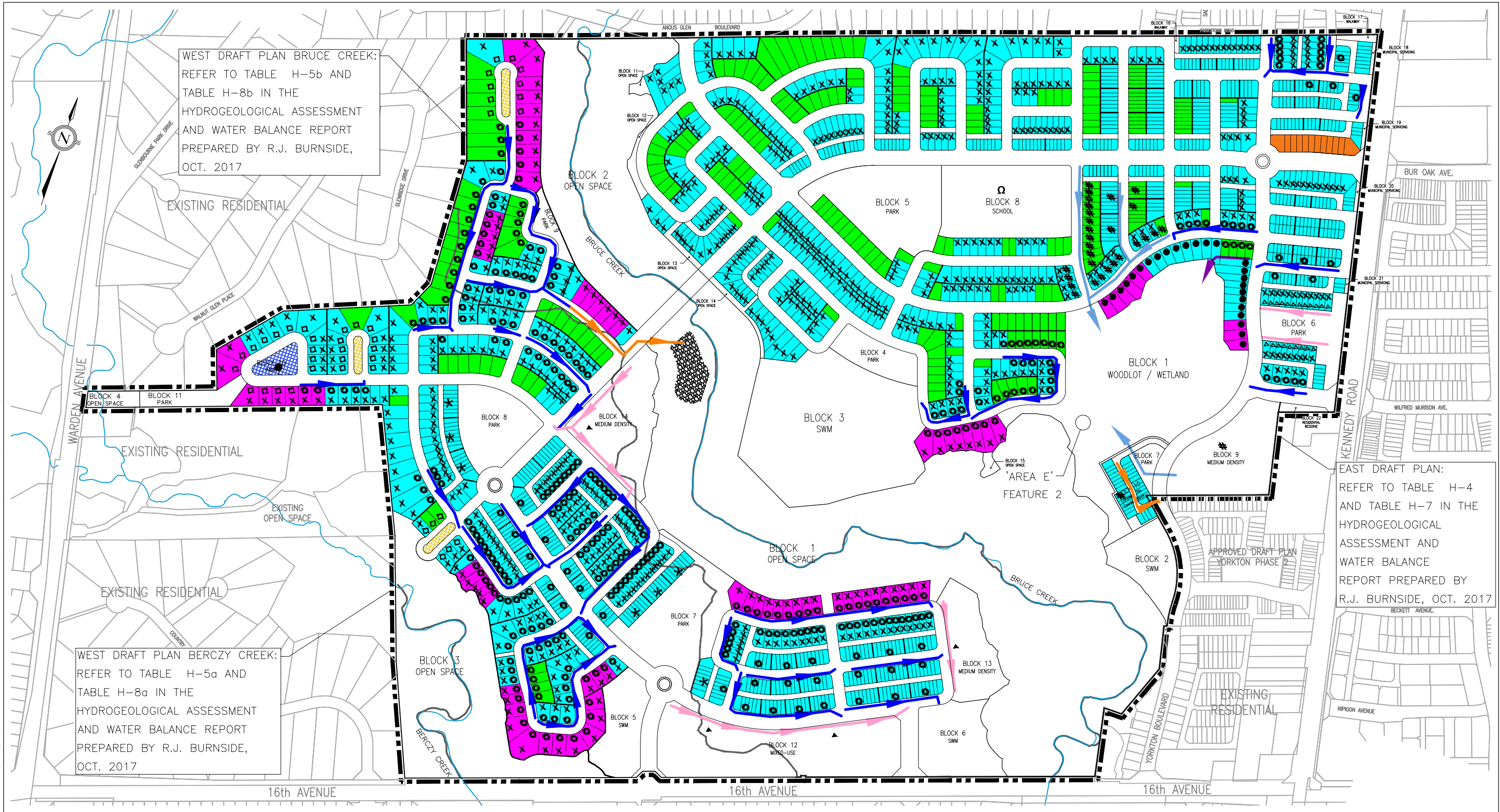
| Feature Based Water Balance - WOODLOT/WETLAND FEATURE - Existing Conditions and Post-Development with LIDs<br>4134 16th Avenue, Markham |                                              |                                            |                                                       |                                                   |                                            |                                                                 |                                                 |                                          |                                                               |                                                   |                                                                     |                                                             |                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------------------------|---------------------------------------------------|--------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------|------------------------------------------|---------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------|
| Catchment Area                                                                                                                          |                                              | Approx.<br>Land Area*<br>(m <sup>2</sup> ) | Estimated<br>Impervious<br>Fraction for<br>Land Use** | Estimated<br>Impervious<br>Area (m <sup>2</sup> ) | Runoff from<br>Impervious<br>Area*** (m/a) | Runoff<br>Volume from<br>Impervious<br>Area (m <sup>3</sup> /a) | Estimated<br>Pervious<br>Area (m <sup>2</sup> ) | Runoff from<br>Pervious<br>Area*** (m/a) | Runoff<br>Volume from<br>Pervious<br>Area (m <sup>3</sup> /a) | Infiltration<br>from<br>Pervious<br>Area*** (m/a) | Infiltration<br>Volume from<br>Pervious Area<br>(m <sup>3</sup> /a) | Total Runoff<br>Volume to<br>Feature<br>(m <sup>3</sup> /a) | Total<br>Infiltration<br>Volume (m <sup>3</sup> /a) |
| <b>Woodlot/Wetland Feature - Existing Land Use</b>                                                                                      |                                              |                                            |                                                       |                                                   |                                            |                                                                 |                                                 |                                          |                                                               |                                                   |                                                                     |                                                             |                                                     |
| Woodlot/Wetland Feature                                                                                                                 | Wetland                                      | 17,400                                     | 0.00                                                  | 0                                                 | 0.725                                      | 0                                                               | 17,400                                          | 0.140                                    | 2,430                                                         | 0.114                                             | 1,988                                                               | 2,430                                                       | 1,988                                               |
|                                                                                                                                         | Woodlot                                      | 19,000                                     | 0.00                                                  | 0                                                 | 0.725                                      | 0                                                               | 19,000                                          | 0.111                                    | 2,103                                                         | 0.135                                             | 2,570                                                               | 2,103                                                       | 2,570                                               |
| Existing External Drainage Area to Feature                                                                                              |                                              | 30,200                                     | 0.00                                                  | 0                                                 | 0.725                                      | 0                                                               | 30,200                                          | 0.140                                    | 4,217                                                         | 0.114                                             | 3,450                                                               | 4,217                                                       | 3,450                                               |
| <b>TOTAL PRE-DEVELOPMENT</b>                                                                                                            |                                              | <b>66,600</b>                              |                                                       | <b>0</b>                                          |                                            | <b>0</b>                                                        | <b>66,600</b>                                   |                                          | <b>8,749</b>                                                  |                                                   | <b>8,008</b>                                                        | <b>8,749</b>                                                | <b>8,008</b>                                        |
| <b>Woodlot/Wetland Feature - Post-Development Land Use</b>                                                                              |                                              |                                            |                                                       |                                                   |                                            |                                                                 |                                                 |                                          |                                                               |                                                   |                                                                     |                                                             |                                                     |
| Woodlot/Wetland Feature                                                                                                                 | Wetland                                      | 17,400                                     | 0.00                                                  | 0                                                 | 0.725                                      | 0                                                               | 17,400                                          | 0.140                                    | 2,430                                                         | 0.114                                             | 1,988                                                               | 2,430                                                       | 1,988                                               |
|                                                                                                                                         | Woodlot                                      | 19,000                                     | 0.00                                                  | 0                                                 | 0.725                                      | 0                                                               | 19,000                                          | 0.111                                    | 2,103                                                         | 0.135                                             | 2,570                                                               | 2,103                                                       | 2,570                                               |
| Open Space/Buffer Draining to Feature                                                                                                   |                                              | 13,700                                     | 0.00                                                  | 0                                                 | 0.725                                      | 0                                                               | 13,700                                          | 0.111                                    | 1,516                                                         | 0.135                                             | 1,853                                                               | 1,516                                                       | 1,853                                               |
| Type B Lots                                                                                                                             | Rear Yard Amended Soils                      | 2,100                                      | 0.00                                                  | 0                                                 | 0.725                                      | 0                                                               | 2,100                                           | 0.114                                    | 240                                                           | 0.140                                             | 293                                                                 | 240                                                         | 293                                                 |
|                                                                                                                                         | Roof to Grass - 25% infiltrates & 75% runoff | 4,000                                      | 1.00                                                  | 4,000                                             | 0.725                                      | 2,900                                                           | NA                                              | NA                                       | NA                                                            | NA                                                | NA                                                                  | 2,175                                                       | 725                                                 |
| Type C Lots                                                                                                                             | Rear Yard Amended Soils                      | 500                                        | 0.00                                                  | 0                                                 | 0.725                                      | 0                                                               | 500                                             | 0.114                                    | 57                                                            | 0.140                                             | 70                                                                  | 57                                                          | 70                                                  |
|                                                                                                                                         | Roof to Grass - 25% infiltrates & 75% runoff | 900                                        | 1.00                                                  | 900                                               | 0.725                                      | 653                                                             | NA                                              | NA                                       | NA                                                            | NA                                                | NA                                                                  | 489                                                         | 163                                                 |
| Type E Lots                                                                                                                             | Rear Yard Amended Soils                      | 250                                        | 0.00                                                  | 0                                                 | 0.725                                      | 0                                                               | 250                                             | 0.114                                    | 29                                                            | 0.140                                             | 35                                                                  | 29                                                          | 35                                                  |
|                                                                                                                                         | Roof to Grass - 25% infiltrates & 75% runoff | 500                                        | 1.00                                                  | 500                                               | 0.725                                      | 363                                                             | NA                                              | NA                                       | NA                                                            | NA                                                | NA                                                                  | 272                                                         | 91                                                  |
| <b>TOTAL POST-DEVELOPMENT</b>                                                                                                           |                                              | <b>58,350</b>                              |                                                       | <b>5,400</b>                                      |                                            | <b>3,915</b>                                                    | <b>52,950</b>                                   |                                          | <b>6,375</b>                                                  |                                                   | <b>6,809</b>                                                        | <b>9,311</b>                                                | <b>7,788</b>                                        |
| % Change from Pre to Post                                                                                                               |                                              |                                            |                                                       |                                                   |                                            |                                                                 |                                                 |                                          |                                                               |                                                   |                                                                     | -6                                                          | 3                                                   |
| Effect of development (with no mitigation)                                                                                              |                                              |                                            |                                                       |                                                   |                                            |                                                                 |                                                 |                                          |                                                               |                                                   |                                                                     | 6% increase in runoff                                       | maintains infiltration                              |

\* data provided by the mbtw group

\*\* data provided by Stantec

\*\*\* figures from Tables H-1 and H-2





WEST DRAFT PLAN BERCZY CREEK:  
REFER TO TABLE H-5a AND  
TABLE H-8a IN THE  
HYDROGEOLOGICAL ASSESSMENT  
AND WATER BALANCE REPORT  
PREPARED BY R.J. BURNSIDE,  
OCT. 2017

EAST DRAFT PLAN:  
REFER TO TABLE H-4  
AND TABLE H-7 IN THE  
HYDROGEOLOGICAL  
ASSESSMENT AND  
WATER BALANCE  
REPORT PREPARED BY  
R.J. BURNSIDE, OCT. 2017

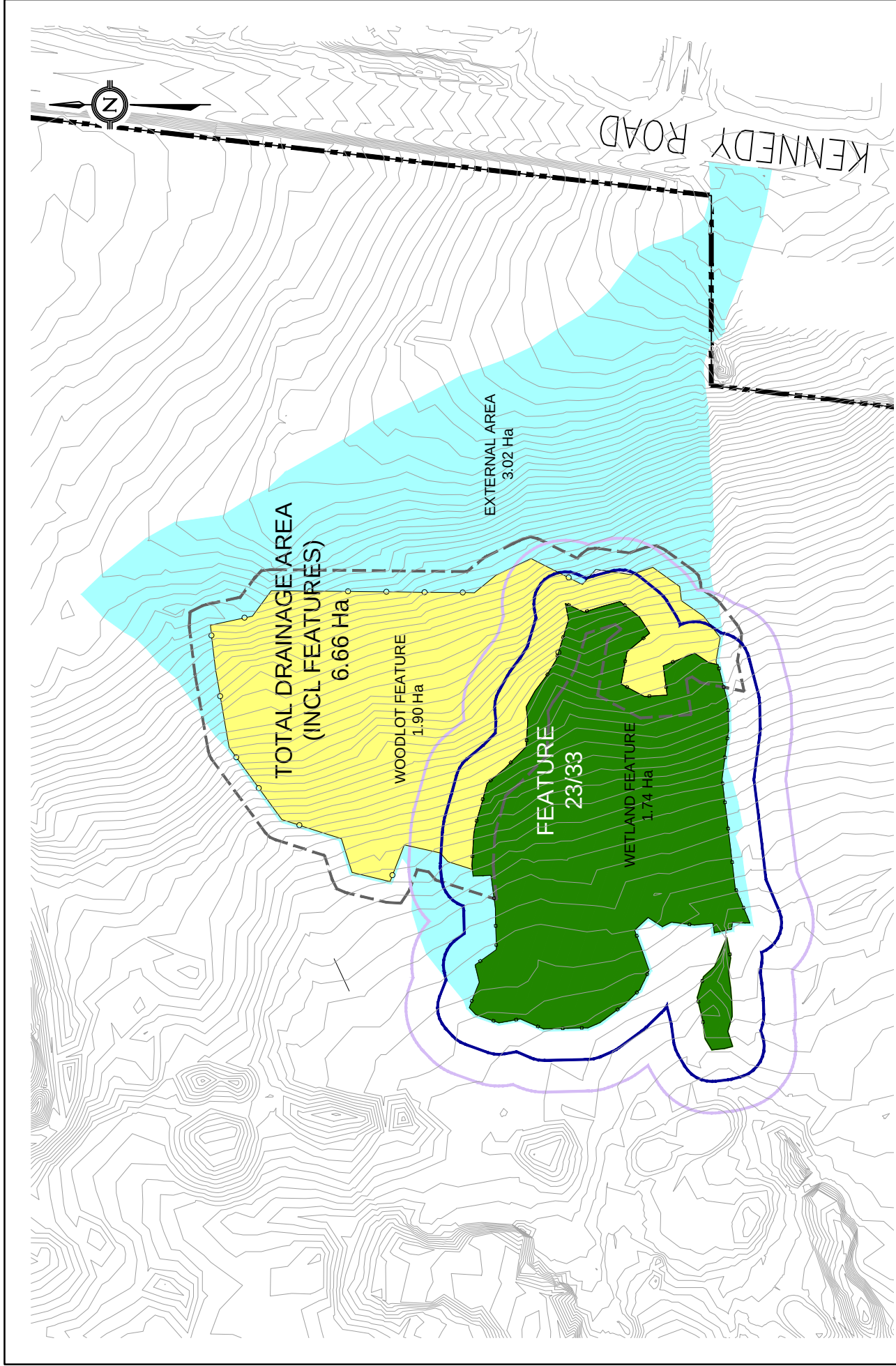


- Legend**
- SUBJECT PROPERTY
  - PROPOSED SOLID RLC
  - PROPOSED PERFORATED RLC
  - PROPOSED RLC TO WOODLOT/ WETLAND FEATURE
  - PROPOSED INFILTRATION GALLERY
  - PROPOSED FDRLC
  - WETLAND STONE RESERVOIR FOR FDRLC OUTLET
  - DRAINAGE DIVIDE BRUCE CREEK AND BERCZY CREEK
  - BACK SPLIT
  - FRONT DRAIN
  - FRONT WALK
  - WALKOUT
  - ENCLAVE BIORETENTION
  - INFILTRATION FACILITY
  - HALF ROOF TO SURFACE
  - FULL ROOF TO 'AREA E'
  - HALF ROOF TO 'AREA E'
  - HALF ROOF TO PERFORATED RLC
  - HALF ROOF TO ENCLAVE BIORETENTION
  - HALF ROOF TO INFILTRATION GALLERY
  - FULL ROOF TO INFILTRATION GALLERY
  - HALF ROOF TO AMENDED SOILS
  - FULL ROOF TO WOODLOT/WETLAND FEATURE

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FIGURE 2.17  
POST DEVELOPMENT WATER  
BALANCE MITIGATION PLAN  
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EXISTING DRAINAGE PLAN



PROPOSED DRAINAGE PLAN





1:2000

- Legend
- SUBJECT PROPERTY
  - STAKED DRIPLINE
  - STAKED WETLAND
  - STAKED DRIPLINE +10.0m
  - STAKED WETLAND +15.0m
  - STAKED WETLAND +30.0m
  - R/L TO WOODLOT/WETLAND FEATURE

- WETLAND AREA
- EXISTING DRAINAGE AREA TO FEATURE
- WOODLOT AREA
- PROPOSED REAR LOT AREA TO FEATURE
- PROPOSED OPEN SPACE/BUFFER TO FEATURE
- FULL ROOF TO WOODLOT/WETLAND FEATURE

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FIGURE 2.15  
WOODLOT/WETLAND  
FEATURE 1 DRAINAGE PLAN  
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