

GAMAN CONSULTANTS INC.

UDORA ESTATES WATER BALANCE EVALUATION PART LOT 35, CON. 6, TWP UXBRIDGE REGION OF DURHAM

Prepared for:
2695867 Ontario Inc.

January 2025

File 22012.00

Distribution:

1 c Client (PDF)

1 c File

GAMAN CONSULTANTS INC.

Barrie, Ont.
705-279-9156
ghendy.gaman@outlook.com

January 21, 2025

2695867 Ontario Inc.
71 Shannon St.
Toronto, On.
M6J 2E6

Attention: Mr. Jeff Risi and John Cooper

Re: Udora Estates Water Balance Evaluation
Part Lot 35, Con. 6, TWP Uxbridge, Durham Region
File 22012.00

GAMAN Consultants Inc. is pleased to submit this hydrogeological report documenting the results of a water balance evaluation for the above noted property. The results of the water balance evaluation show a deficit in infiltration after development, and this is common with developments. There is enough recharge available from rooftops to off-set the deficit using low impact development measures.

Yours truly,
GAMAN Consultants Inc.



Gary R. Hendy, P.Eng.
Consulting Engineer

TABLE OF CONTENTS

Letter of Transmittal

	PAGE
1.0 INTRODUCTION.....	1
1.1 BACKGROUND	1
1.2 STUDY OBJECTIVES & SCOPE.....	1
2.0 PHYSICAL SETTING.....	2
2.1 PHYSIOGRAPHY, SURFICIAL GEOLOGY & DRAINAGE	2
2.2 HYDROGEOLOGY	3
2.3 WATER WELL RECONNAISSANCE SURVEY	4
3.0 SITE INVESTIGATIONS	7
3.1 SHALLOW SUBSURFACE SOILS	7
3.2 GROUNDWATER MOVEMENT	7
3.3 GROUNDWATER QUALITY	8
3.4 SINGLE WELL RESPONSE TESTS.....	8
4.0 WATER BUDGET	9
4.1 CLIMATE DATA	9
4.2 GROUNDWATER RECHARGE ESTIMATES.....	10
4.2.1 MECP Recharge Estimates.....	10
4.2.2 ORMPG Recharge Rates	12
4.3 PRE-DEVELOPMENT & POST-DEVELOPMENT WATER BUDGETS	12
4.4 MITIGATION.....	13
5.0 CONCLUSIONS AND RECOMMENDATIONS.....	14
6.0 LIMITATIONS AND USE.....	16
7.0 REFERENCES	17

TABLE OF CONTENTS (Cont'd)

PAGE

APPENDICES

APPENDIX A	WATER WELL RECORDS AND RECONNAISSANCE SURVEY
APPENDIX B	BOREHOLE LOGS
APPENDIX C	WATER BUDGET
APPENDIX D	GROUNDWATER CHEMISTRY
APPENDIX E	SHALLOW SOILS AND GROUNDWATER

FIGURES

FIGURE 1	SITE LOCATION	AFTER TEXT
FIGURE 2	SITE PLAN	AFTER TEXT
FIGURE 3	PHYSIOGRAPHY	AFTER TEXT
FIGURE 4	SURFICIAL GEOLOGY	AFTER TEXT
FIGURE 5	BEDROCK GEOLOGY	AFTER TEXT
FIGURE 6	DRAINAGE.....	AFTER TEXT
FIGURE 7	WATER WELL LOCATION MAP	AFTER TEXT
FIGURE 8	SECTION A-A'	AFTER TEXT
FIGURE 9	SECTION B-B'	AFTER TEXT
FIGURE 10	AGRICULTURAL SOILS CHART	AFTER TEXT
FIGURE 11	ORMPG RECHARGE RATES.....	AFTER TEXT
FIGURE 12	PROPOSED LID PLAN	AFTER TEXT
FIGURE E-1	SHALLOW GROUNDWATER MOVEMENT	APPENDIX E
FIGURE E-2	SLUG TEST ANALYSIS MW17-1DL	APPENDIX E
FIGURE E-3	SLUG TEST ANALYSIS MW17-2 MANUALS	APPENDIX E
FIGURE E-4	SLUG TEST ANALYSIS MW17-2DL	APPENDIX E
FIGURE E-5	SLUG TEST ANALYSIS MW17-3 MANUALS	APPENDIX E
FIGURE E-6	SLUG TEST ANALYSIS MW17-3DL	APPENDIX E
FIGURE E-7	TP19-1 PARTICAL SIZE ANALYSIS	APPENDIX E
FIGURE E-8	TP19-2 PARTICAL SIZE ANALYSIS	APPENDIX E
FIGURE E-9	TP19-3 PARTICAL SIZE ANALYSIS	APPENDIX E
FIGURE E-10	TP19-4 PARTICAL SIZE ANALYSIS	APPENDIX E

TABLE OF CONTENTS (Cont'd)

	PAGE
FIGURE E-11 TP19-5 PARTICAL SIZE ANALYSIS	APPENDIX E
FIGURE E-12 TP19-6 PARTICAL SIZE ANALYSIS	APPENDIX E
FIGURE E-13 TP19-7 PARTICAL SIZE ANALYSIS	APPENDIX E
FIGURE E-14 TP19-8 PARTICAL SIZE ANALYSIS	APPENDIX E
FIGURE E-15 TP19-9 PARTICAL SIZE ANALYSIS	APPENDIX E
FIGURE E-16 TP19-10 PARTICAL SIZE ANALYSIS	APPENDIX E

TABLES

TABLE A-1	SUMMARY OF WATER WELL RECORDS.....	APPENDIX A
TABLE A-2	SUMMARY OF WATER WELL SURVEY	APPENDIX A
TABLE C-1	INFILTRATION FACTORS	APPENDIX D
TABLE C-2	PRE-DEVELOPMENT & POST DEVELOPMENT WATER BUDGET	APPENDIX D
TABLE C-3	RECHARGE MITIGATION	APPENDIX D
TABLE D-1	SHALLOW GROUNDWATER QUALITY	APPENDIX D
TABLE E-1	TEST PITS LOGS.....	APPENDIX E
TABLE E-2	GROUNDWATER LEVELS.....	APPENDIX E
TABLE E-3	MONITOR WELL DETAILS	APPENDIX E

1.0 INTRODUCTION

1.1 BACKGROUND

This report provides the results of a hydrogeological assessment carried out by GAMAN Consultants Inc. (GAMAN) in support of a plan of subdivision application for the subject lands owned by 2695867 Ontario Inc. The report was initiated to document the effects of creating hard cover surfaces that prevent recharge from infiltrating to the water table.

By way of background, 2695867 Ontario Inc. owns a 1.7055-ha parcel of land situated on Part Lots 34 & 35, Concession 6, Township of Uxbridge within the Hamlet of Udora, as shown in Figure 1. Figure 2 illustrates the layout of the 7 proposed lots.

WSP Canada Inc. and GAMAN Consultants Inc. completed hydrogeological investigations of the Capris Development during 2019 for Capris Developments. The WSP Report was never finalized, and the subdivision was sold to 2695867 Ontario Inc. GAMAN Consultants was retained to re-evaluate the test data from the 2019 investigations and integrate those study results into this hydrogeological report.

1.2 STUDY OBJECTIVES & SCOPE

The Conservation Authorities Geoscience Group developed guidelines for hydrogeological assessment submissions related to water balances. The document provides information for consultants to consider and address in technical submissions for a development site. The purpose of this evaluation was to assess the changes in recharge to the site for input into appropriate mitigation methods to be implemented to maintain groundwater recharge.

The tasks required to complete the work program included:

- Background review of the physical setting of the site including physiography, surficial geology and groundwater.
- A site inspection of the site and surrounding area.
- Review soils and groundwater monitoring data from boreholes installed by other project team members.
- A review of local water well records and existing services around the site.
- Preparation of a hydrogeological report to address Conservation Authority Guidelines for a water balance.

This report documents the study findings of these investigations.

2.0 PHYSICAL SETTING

2.1 PHYSIOGRAPHY, SURFICIAL GEOLOGY AND DRAINAGE

The physiography of the Site is illustrated in Figure 3. The study area is situated within the Peterborough Drumlin Field Physiographic Region as described by Chapman and Putnam (1984) as represented in the OGS Earth application accessible through the Ministry of Northern Development and Mines Web Page. A small portion of the northeast corner of the Site lies within the Simcoe Lowlands Physiographic Region. The Peterborough Drumlin Field is characterized by a rolling till plain that is dotted with oval-shaped hills known as drumlins. Although drumlins flank the site to the east, south and west, there are no drumlins noted within the Site boundary. The till plains and drumlins dominate the landscape at a regional scale. Organic deposits of peat and muck are present in the valleys.

Surficial geology is illustrated in Figure 4. The site is situated on dominantly till-like soils comprised of heterogeneous mixtures of sand and silt with some gravel and clay. The sandy

overburden west and north of the site are distinct from the surficial soils east of the site and reflect the two physiographic settings described above.

The bedrock beneath the study area is mapped as limestone/dolostone/shale/arkose/sandstone of the Simcoe Group; Lindsay Formation (Ontario Geological Survey, 2011) as illustrated on Figure 5. The depth to bedrock is estimated to be between 30 to 40 metres below ground surface (m bgs), based on overburden thickness mapping (Gao et al., 2006).

The Site is located within the Lake Simcoe Watershed. The local topography of the Site slopes from the south at an elevation of 250 metres above sea level (masl) to the north, at an elevation of approximately 240 masl. Runoff drains to the north into a drainage ditch along Ravenshoe Road and is inferred to flow into a tributary which connects to the Pefferlaw River, and subsequently Lake Simcoe (Figure 6).

2.2 HYDROGEOLOGY

The hydrogeologic setting was interpreted based on the local water well record database maintained by the MECP and plotted on Figure 7. The Oak Ridges Moraine Groundwater Program was also referenced to support the interpretation.

As noted within the test pit logs, Table E-1, the shallow overburden is comprised mostly of silty-sand to sandy-silt of varying thicknesses and fine sand, typically a minimum of 1.5 metres and up to more than 1.8 metres thick. One test pit documented silt. Particle size distribution analyses from soils from the test pits (Appendix E) are representative of shallow soils and illustrate the gradation of the soils in the uppermost portion of the overburden. The borehole logs for MW17-1, MW17-2 and MW17-3 identify a silty-sand to sandy-silt layer extending to at least 6.7 m bgs. The water well record submitted for the on-site well TW1 also noted a sandy composition to a depth of 5.7 metres bgs. It is inferred, based on the drilling records, that the soil composition becomes finer grained with depth.

The regional hydrogeologic setting of the area is described below with the visual aid of hydrostratigraphic sections ‘A-A’ and ‘B-B’ in Figures 8 and 9 respectively. The hydrostratigraphy consists of the following types of units:

- Upper Unconfined Aquifer
- Upper Aquitard
- Lower Overburden Aquifer
- Bedrock Aquifer

The Upper Unconfined Aquifer is formed within the surficial sand plain. This unit is limited in both vertical and lateral extent, based on the physiographic setting. The unit could be a source of groundwater for shallow dug and bored wells that would extend through this unit and into the underlying till-based aquitard. Domestic wells that might extend through this unit could experience water shortages based on seasonal variations in the water table.

The Upper Aquitard is generally till-like at a depth of below 3 metres, and characteristic of Newmarket Till-aged deposits. This aquitard is comprised of mostly fine-grained sediments that behave as a protective layer above the water-bearing units. Portions of the aquitard described as clay, or as sand containing a significant component of clay, will have reduced permeability. The aquitard acts as a barrier to retard the vertical movement of groundwater from the ground surface to the underlying aquifers from which water supplies will be obtained by the development. This hydrostratigraphic unit should buffer groundwater quality in the supply aquifer from shallow sources of contaminants discharged near surface. Some portions of the aquitard may contain coarser fractions that allow wells to extract enough groundwater for domestic use.

The Lower Overburden Aquifer is comprised of granular sediments of limited lateral and vertical extent. The aquifer ranges from less than 1 metre to more than 17 metres thick. The aquifer may be non-existent in some of the study area. Many of the wells on-site and off-

site terminate within this aquifer. The Lower Overburden Aquifer is confined beneath the overlying Upper Aquitard. Where encountered this aquifer tends to yield sufficient water quantity for domestic use.

The fractured Limestone Bedrock Aquifer is also confined beneath the Upper Aquitard and the Lower Overburden Aquifer, and it extends across the study area. The depth to limestone is generally greater than about 20 metres below grade as observed at the King Coles Ducks Test Well TW09-2 (Figure 8). The physical evidence from previous reporting suggests that the upper portion of the bedrock aquifer and the lower overburden aquifer are hydraulically connected to one another. Either the Lower Overburden Aquifer (where encountered), or the fractured Limestone Bedrock Aquifer, is proposed as the source of groundwater for this development. The water quality in these aquifers is protected from activities at surface by the Upper Aquitard.

2.3 WATER WELL RECONNAISSANCE SURVEY

The Site is surrounded by rural residential properties to the north, east and south and borders a natural heritage system to the west, which currently remains undeveloped. No landfills, salt domes, or any other land use that would be considered major pollution sources are present within 500 metres of the Site.

Existing agricultural, domestic fertilizers and on-site sewage disposal systems would be sources of nitrogen to the shallow groundwater regime. A survey was conducted on September 25 and 27, 2018 and October 3, 2018, to identify current users of groundwater within 500 metres of the Site. Residents were asked to participate on a voluntary basis and were provided with a letter outlining the purpose of the survey. The survey was administered by a representative from WSP at the time of visitation, or the survey form was left with the resident at their request. Homeowners who were not present were left with the letter outlining the purpose of the survey and the survey form itself. The information gathered from this

program was used to supplement information in the (MECP) Water Well Record database. Figure 7 shows the water well locations based on the MECP Water Well Information Service (WWIS). Information contained within the WWIS is summarized in Table A-1, Appendix A.

We understand that WSP staff visited 109 properties in the area surrounding the Site to assess private water supply wells. Between inspections that were conducted during site visits and questionnaires that were e-mailed to WSP, 13 responses to the survey were received. This reflects a response rate of 12%. Some residents were willing to answer a few questions regarding the well but would not allow an inspection. The responses have been summarized in Table A-2 in Appendix A.

The results of the survey indicate that there is a mixture of drilled and dug wells in the surrounding area. The majority of respondents indicated that they had good water pressure with the exception of the properties at 685 Ravenshoe Road, 25 Bagshaw Crescent, 28 Bagshaw Crescent, and 52 Victoria Road. Bagshaw Crescent is located immediately south of the proposed development. Issues related to water pressure can result from the size, age and type of pump to the depth the pump, or pump intake in the well and/or the yield of the well.

Wells that were inspected ranged from 8.2 m bgs to 46 m bgs in depth. One resident noted that their well became contaminated in 2006; however, for privacy issues we have not disclosed the location. No further information on the type of contamination was provided. An ultraviolet treatment system was installed; however, the resident no longer drinks the water.

3.0 SITE INVESTIGATIONS

3.1 SHALLOW SUBSURFACE SOILS

WSP excavated ten (10) test pits on-site on May 3, 2019, that are designated as TP19-1 to TP19-10. The field investigation was carried out under supervision of WSP to assess the subsurface soils and shallow groundwater conditions with respect to the general suitability of the Site to accommodate private sewage disposal systems. Soil samples were obtained from the test pits for visual examination and textural classification. Ten (10) samples were submitted to the WSP soils laboratory for grain size distribution analysis. The approximate locations of the test pits are shown in Figure 2, and test pit logs and particle size analysis reports are presented in Appendix E. This information was considered in preparation of the water budget evaluation for the site.

3.2 GROUNDWATER MOVEMENT

GAMAN Consultants completed seasonal groundwater monitoring between December 2022 and November 2024. The results are documented in Table E-2, Appendix E. The interpreted direction of shallow groundwater movement is illustrated in Figure E-1, Appendix E. Shallow groundwater flows in a northwest direction towards a tributary of Pefferlaw River.

Groundwater levels show seasonal variations with spring-time highs and late summer lows. This is typical for shallow groundwater. The monitors on the low-lying north side of the site may have defective grout seals, given the age of the monitors and this could be a reason for the spikes in groundwater levels documented in the report.

3.3 GROUNDWATER QUALITY

Groundwater samples were collected from the three shallow monitoring wells at MW17-1, MW17-2 and MW17-3 on February 20, 2019, to determine the existing background water quality parameters within the shallow groundwater regime. The laboratory results of these samples are included in Appendix D.

The analytical results indicate dissolved organic carbon (DOC), and hardness concentrations were above Criteria C of the Ontario Drinking Water Quality Standards (ODWQS) for each of MW17-1, MW17-2 and MW17-3. Total alkalinity was also greater than the guidelines for MW17-1 and MW17-3 with values of 510 mg/L and 517 mg/L respectively. These parameters are not a health-related concern in drinking water. These parameters can be effectively managed by point-of-use treatment systems.

The groundwater samples were also analyzed for nitrate to determine the existing background nitrate concentration within the shallow groundwater regime. The groundwater had nitrate concentrations of 0.201 mg/L to 2.12 mg/L, with an average concentration of 0.88 mg/L at the time of testing. This is a reasonable estimate as the background nitrate concentration in the proposed adjacent development to the west of the Site (King Cole Ducks development) had nearly non-detectable concentrations of nitrate (0.1 mg/L) at the time of testing.

3.4 SINGLE WELL RESPONSE TESTS

Single well response tests were performed to estimate the hydraulic conductivity of the saturated soils adjacent to the well screens at MW17-1, MW17-2 and MW17-3.

WSP performed rising head tests using a bailer to remove water from the monitor. A data logger and pressure transducer were used to record the responses. The tests were completed on February 20, 2019. The data was evaluated using software and the graphical results are

presented in Appendix E. Hydraulic conductivities ranged from 2.6×10^{-7} to 1.6×10^{-6} m/sec. The range of values is consistent with the observed materials.

4.0 WATER BUDGET

4.1 CLIMATE DATA

As precipitation falls to the ground in the form of rainfall or snow, it is subject to components of the hydrological cycle. Water will generally runoff, infiltrate, evaporate or be subject to transpiration from plant uptake. Evaporation and transpiration are commonly grouped together as evapotranspiration while runoff and infiltration are grouped together as water surplus. The water budget is represented in a simple form as follows:

$$\text{Water In} = \text{water Out}$$
$$P + EI = ET + IR + RO + EO$$

Where:

P = Precipitation

EI = External Inputs (Run-on, irrigation and vertical/lateral transfers)

ET = Evapotranspiration from plant uptake and evaporation.

IR = Infiltration Recharge

RO = Run-off

EO = External Outputs (water taking and vertical/lateral transfers)

Lake Simcoe Conservation Authority produced a technical document entitled ***“Lake Simcoe Data: A Reference Document to Support the Completion of Water Balance Assessments.”***, April 2017, Version 1. This document was prepared to standardize climatic data used in water balance evaluations. The data are intended to provide reasonable estimates for these evaluations; however, the qualified professional is expected to use judgement when using these data with site specific data.

The climate data for the Pepperlaw Brook Subwatershed documents the mean precipitation at 897 mm/yr. This average precipitation was used to advance the water balance evaluation for this site.

4.2 GROUNDWATER RECHARGE ESTIMATES

The following sections document estimates of groundwater recharge using LSRCA suggested values and verifying these values against other methods for consistency.

4.2.1 MECP Recharge Estimates

The MOEE Hydrogeological Technical Information Requirements for Land Development Applications (1995) includes Tables 1 and 2 derived from hydrologic analysis for assessing peak runoff for storm water management.

Table 1 is premised on soil types. The silty sand to sandy silt soils at this site are consistent with recharge rates ranging from 150-200 mm/yr. Three of the test pits showed dominantly sandy soils and one showed silt. The upper range of this infiltration rate of 200 mm/yr is a reasonable average recharge rate using this methodology.

Recharge rates derived from Table 2 of the MECP Hydrotechnical Guidelines considers infiltration factors related to:

- Topography (range of 0.1 to 0.3)
- Soil type (range of 0.1 to 0.4)
- Vegetation cover. (range of 0.1 to 0.2)

Table C-1, Appendix C documents the infiltration factors for pre-development and post-development scenarios at the site using this method. Topography was evaluated using topographic information from the site with an average slope of about 5% or 50m/km as shown

in Figure C-1, Appendix C. The site reflects steep slopes with a topographic factor of 0.1 for pre-development as shown in Table C-1. Site grading usually makes the slopes gentler than the original topography. The gentler the slope, the higher the infiltration factor and higher the recharge rate post-development. Though grading could enhance recharge compared with pre-development slope factors, we have been conservative and assumed the topographic infiltration factor remains at 0.1 and continues to reflect steep slopes after grading.

Soils at the site are comprised of medium loam to loamy sand as described in Section 3.1. The soils reflect an infiltration factor of 0.35 as shown in Table C-2 for pre-development and post-development.

Cover reflects the presence or absence of a canopy that can shade parts of the site and reduce evaporation. The site in its pre-development state is dominantly shrubs with some treed areas consistent with a cover factor of 0.15 and we assumed the same value for post development.

The total infiltration factors pre-development and post-development are estimated at 0.60.

The Pepperlaw Brook Subwatershed Table documents precipitation surplus rates for various hydrological soil groups. The grain size analyses from ten test pits were plotted on Figure 10 to provide input to selecting appropriate soils groups for evaluating precipitation surplus at the site. Most of the soils across the site range from medium loam to sandy loam with one test result showing silt loam. The soils groups in the LSRCA Pepperlaw Brook Subwatershed Table identify Silt loam and Sandy Loam as two groups on either range of these site soils. This is a small site at 1.7055 ha. and it was deemed appropriate to simplify the selection of a soils group based on the average precipitation surplus values for Sandy Loam and Silt Loam from the table. The average precipitation surplus value for pasture and shrubs within the Sandy Loam to Silt Loam is 314 mm/yr. for pre-development. The average precipitation

surplus value for urban lawns in post-development within the Sandy Loam to Silt Loam is 321 mm/yr.

Recharge is calculated as the product of water surplus (precipitation surplus) x Total Infiltration Factor (0.60). The predevelopment recharge rate for the site is 189 mm/year and the post-development recharge rate for urban lawns is 193 mm/year.

4.2.2 ORMPG Recharge Estimates

The Oak Ridges Moraine Groundwater Program on-line data visualization tools was used as a guide for evaluating recharge rates. We reviewed the recharge model for the area and presented the information in Figure 11. The recharge rates within various blocks (or cells) at or adjacent to the site show recharge rates ranging from about 121 to 562 mm/yr. The lower recharge rates appear to be influenced by urban development with larger impervious areas. The subject property is located mostly within recharge rate cells of 192 mm/year, and this is consistent with recharge rates calculated for this site in Section 4.2.1.

4.3 PRE-DEVELOPMENT & POST-DEVELOPMENT WATER BUDGETS

The existing lands are undeveloped. There are no impermeable surfaces at the site and the soils have been shown to be comprised of heterogeneous mixtures of silty-sand to sandy-silt associated with loamy sand to medium loam. Runoff and infiltration for the pre-development conditions of the site were based on water budget information presented in previous sections. Table C-2 documents the runoff and recharge rates for the pre-development and post-development scenarios.

The pre-development recharge rate for the undeveloped lands was calculated at 3,223 m³/year based on a recharge rate of 189 mm/year. Runoff was calculated at 2,149 m³/year and is expected to be conveyed off-site.

Sources of recharge for post-development include natural infiltration on urban lawns. The impermeable areas of the site include the dwellings and driveways. The total infiltration post-development on urban lawns is estimated at 2,841 m³/year. Table C-2 documents a recharge deficit of 382 m³/year for the site, equivalent to a reduction of about 12% in recharge.

4.4 MITIGATION

Mitigation is recommended to maintain pre-development groundwater recharge rates and to minimize or eliminate compensation fees to LSRCA. Sources of clean runoff to off-set the recharge deficit include roof runoff and runoff from urban lawns.

Rooftop runoff is one source of water to mitigate recharge. Table C-3 documents the total rooftop area at 594 m² for lots 1 and 2. This area of the site was used for recharge mitigation based on the Proposed LID Plan Figure 2.3 of the SCS Functional Servicing Report that is shown as Figure 12 in this report. SCS relies on enhanced swale infiltration in the vicinity of lots 1 and 2. If 90% of the total precipitation is collected from rooftops on lots 1 and 2, up to 480 m³/year of runoff would be available to offset the infiltration deficit of 382 m³/yr. using low impact development measures. The total infiltration after mitigation is estimated at 3,321 m³/yr. and is higher than the pre-development recharge rate of 3,223 m³/yr.

In summary, the runoff available from the rooftops of Lots 1 and 2 exceeds the estimated recharge deficit for the site and this should result in a balanced water budget for recharge.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations presented below are premised on the data collected and reviewed as part of these investigations:

- The site is predominantly located within the Peterborough Drumlin Field Physiographic Region while a small portion lies within the Simcoe Lowlands Physiographic Region.
- Local topography of the site slopes from the south to the north. Drainage is to the north towards a drainage ditch along Ravenshoe Road that discharges into a tributary of Pefferlaw River.
- The surficial soils at the site are comprised mostly of sandy silt-silty sand, and sandy soils. One test pit location showed silt.
- Shallow groundwater movement is from south to north through the site.
- A water well reconnaissance survey was conducted at 109 properties surrounding the Site. The results of the survey indicated that the majority of respondents have adequate water quantity.
- Groundwater quality at the on-site shallow groundwater monitors showed the presence of dissolved organic carbon (DOC), alkalinity, and hardness at concentrations above the aesthetic or operational guidelines of the Ontario Drinking Water Quality Standards (ODWQS). The measured parameter values do not restrict the ability to use this water for drinking water purposes. All other parameters tested were less than or within ranges prescribed by the ODWQS.
- The average background nitrate concentration in shallow groundwater in 2019 was 0.86 mg/L and is below the ODWQS of 10 mg/L.
- Hydraulic conductivity tests performed at the three shallow monitors demonstrated hydraulic conductivity between 2.6×10^{-7} and 1.6×10^{-6} m/sec. The range of values is consistent with the observed materials.
- The site is located outside of any defined Wellhead Protection Areas.

- The recharge rates for the shallow soils observed at this site were estimated at 188 mm/year for pre-development and 193 mm/year for post-development areas. These values are consistent with the recharge rates documented in the Oak Ridges Moraine Groundwater Program.
- The pre-development recharge was calculated at 3,223 m³/year and the post-development recharge rate was calculated at 2,841 m³/year. The recharge deficit caused by construction of hard covered surfaces in the post-development scenario for this site is calculated at 382 m³/year and represents about a 12% reduction in recharge.
- Sources of clean runoff to off-set the deficit in recharge are available from roof runoff on Lots 1 and 2. The volume of runoff available from these sources can effectively mitigate the estimated recharge deficit for the site. LID measures to promote infiltration include advanced swale infiltration measures proposed by SCS.

Respectfully Submitted,
GAMAN CONSULTANTS INC.

The image shows a handwritten signature in cursive that reads "Gary R. Hendy". To the right of the signature is a circular professional engineer's stamp. The stamp contains the text "LICENSED PROFESSIONAL ENGINEER" around the top inner edge, "GARY R. HENDY" in the center, and "PROVINCE OF ONTARIO" around the bottom inner edge.

Gary R. Hendy, P.Eng.
Consulting Engineer

6.0 LIMITATIONS AND USE

This report has been prepared for the exclusive use of 2695867 Ontario Inc. for their exclusive use in the evaluation of the area for the proposed development. GAMAN Consultants Inc. accepts no responsibility for any damages incurred by any third party as a result of decisions made, or actions taken based upon the information contained within this report.

All background information used in the preparation of this report has been relied upon in good faith, and GAMAN does not accept any responsibility for any misstatements, inaccuracies, or deficiencies contained in those documents or records. The information contained in this report should be evaluated, interpreted and implemented only in the context of the assignment.

The findings and conclusions included in this report reflect our best judgement in light of the information available at the time of report preparation and site inspection and are valid only at the date of issuance. If additional information is provided in the future, such as the results of additional site-specific assessments or monitoring, GAMAN will be pleased to re-evaluate our conclusions contained within this report, and issue amendments, as required.

7.0 REFERENCES

Chapman L.J. and Putnam, D.F., 1984

The Physiography of Southern Ontario, 3rd edition.

Ontario Geological Survey Special Volume 2; Ministry of Natural Resources.

Lake Simcoe Region Conservation Authority, April 2017

Lake Simcoe Data: A Reference Document to Support the Completion of Water
Balance Assessments, Version 1.

Lake Simcoe Region Conservation Authority, June 2013

Hydrogeological Assessment Submissions, Conservation Authority Guidelines for
Development Applications.

Ministry of Environment Conservation & Parks

Water Well Records

Ministry of Environment Conservation & Parks

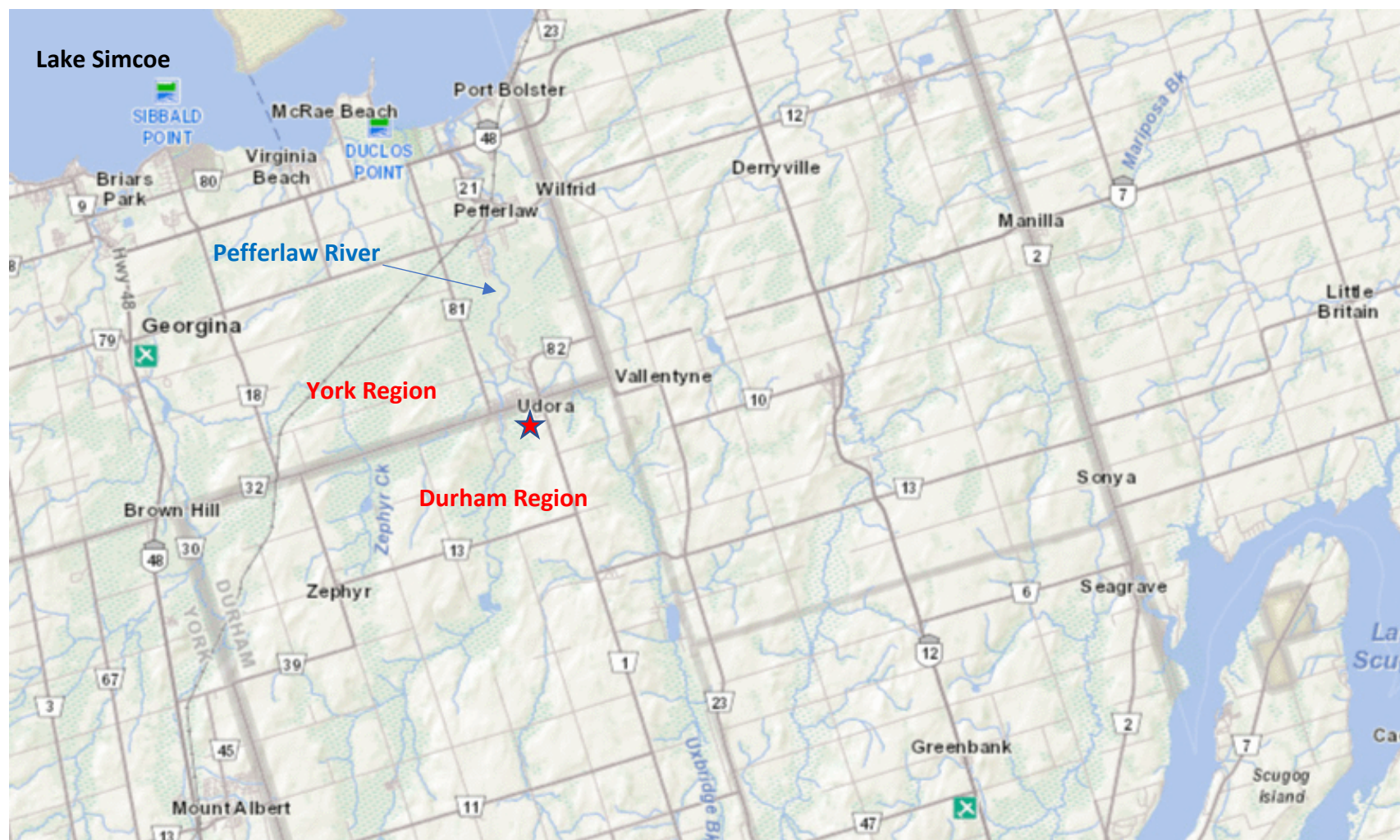
(Revision) Technical Support Document for Ontario Drinking Water Standards,
Objectives and Guidelines, 2006

Ministry of Environment Conservation & Parks, 1995

MOEE Hydrogeological Technical Information Requirements for Land Development
Applications, ISBN 0-7778-4340-4, April, Queen's Printer.

Oak Ridges Moraine Groundwater Program, (Web-based).

FIGURES



NOTES

★ Site Location

Site Location

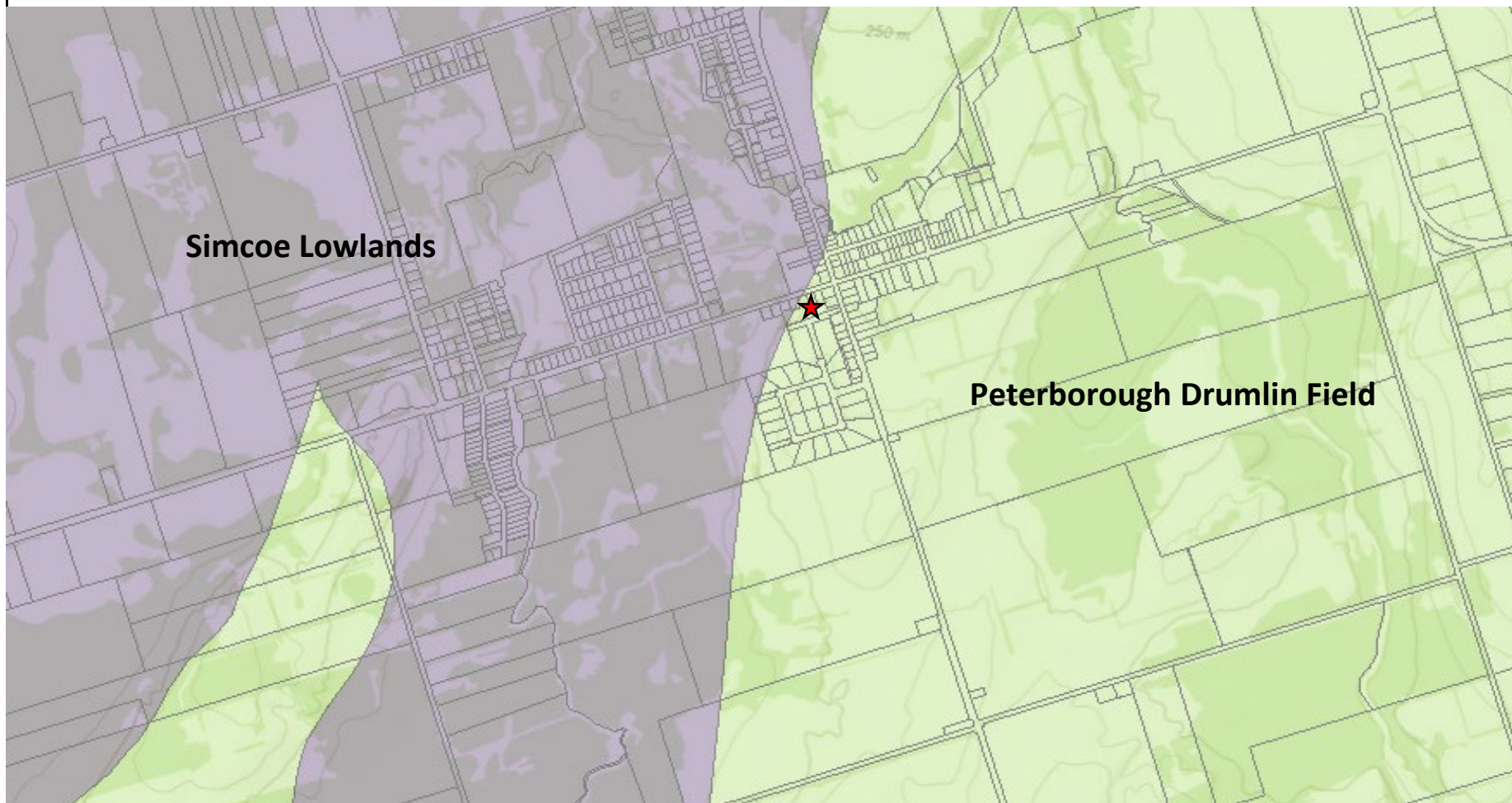
Udora Estates Water Balance Evaluation,
Part Lot 35, Con. 6, TWP Uxbridge
For 2695867 Ontario Inc.

Date:	Jan-25
Project:	22012.00

Scale:	AS SHOWN
Ref No:	

GAMAN Consultants Inc.

Figure



NOTES

★ Site Location

Physiography

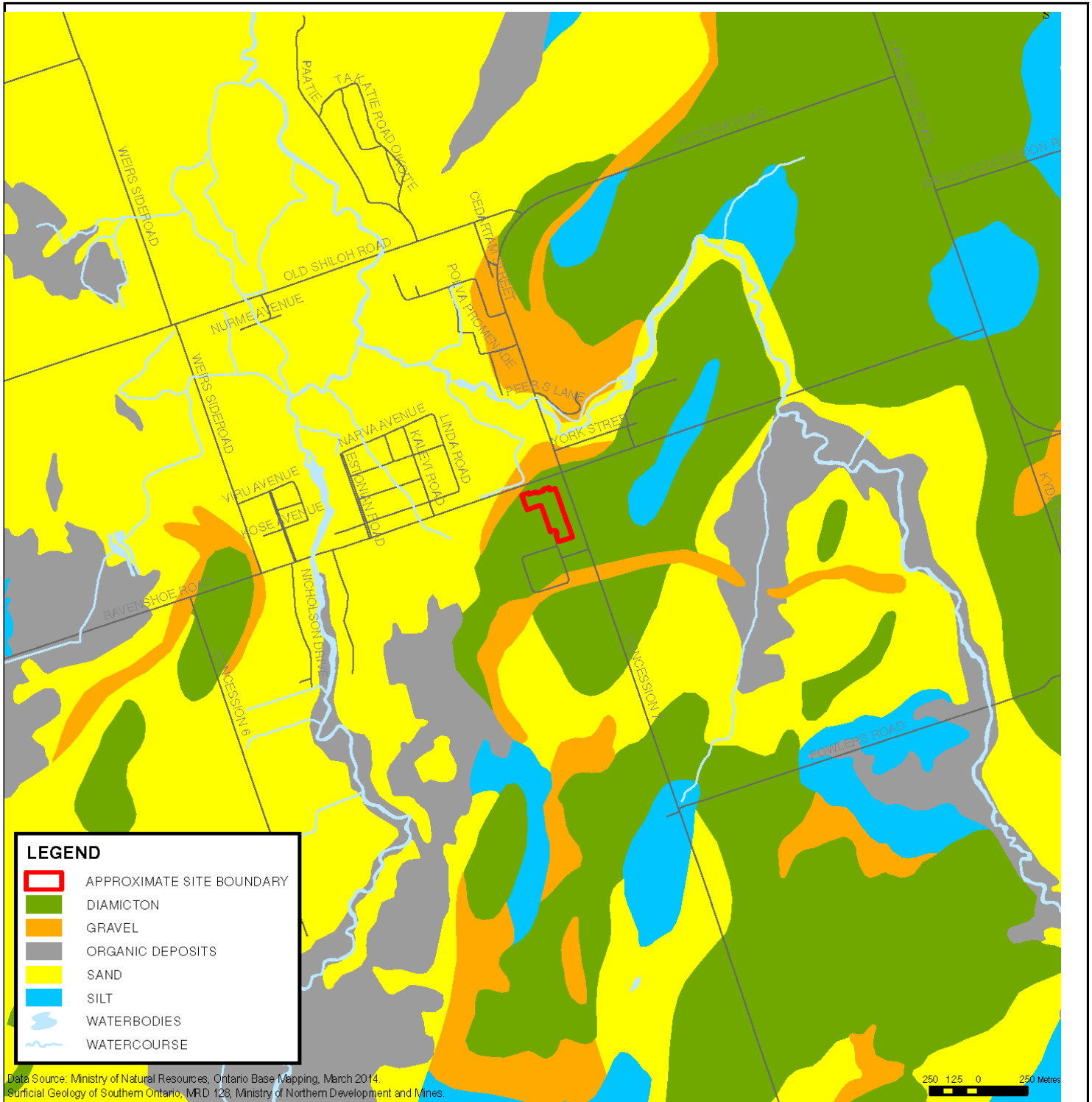
Udora Estates Water Balance Evaluation,
Part Lot 35, Con. 6, TWP Uxbridge
For 2695867 Ontario Inc.

Date: Jan-25 Scale: AS SHOWN

Project: 22012.00 Ref No:

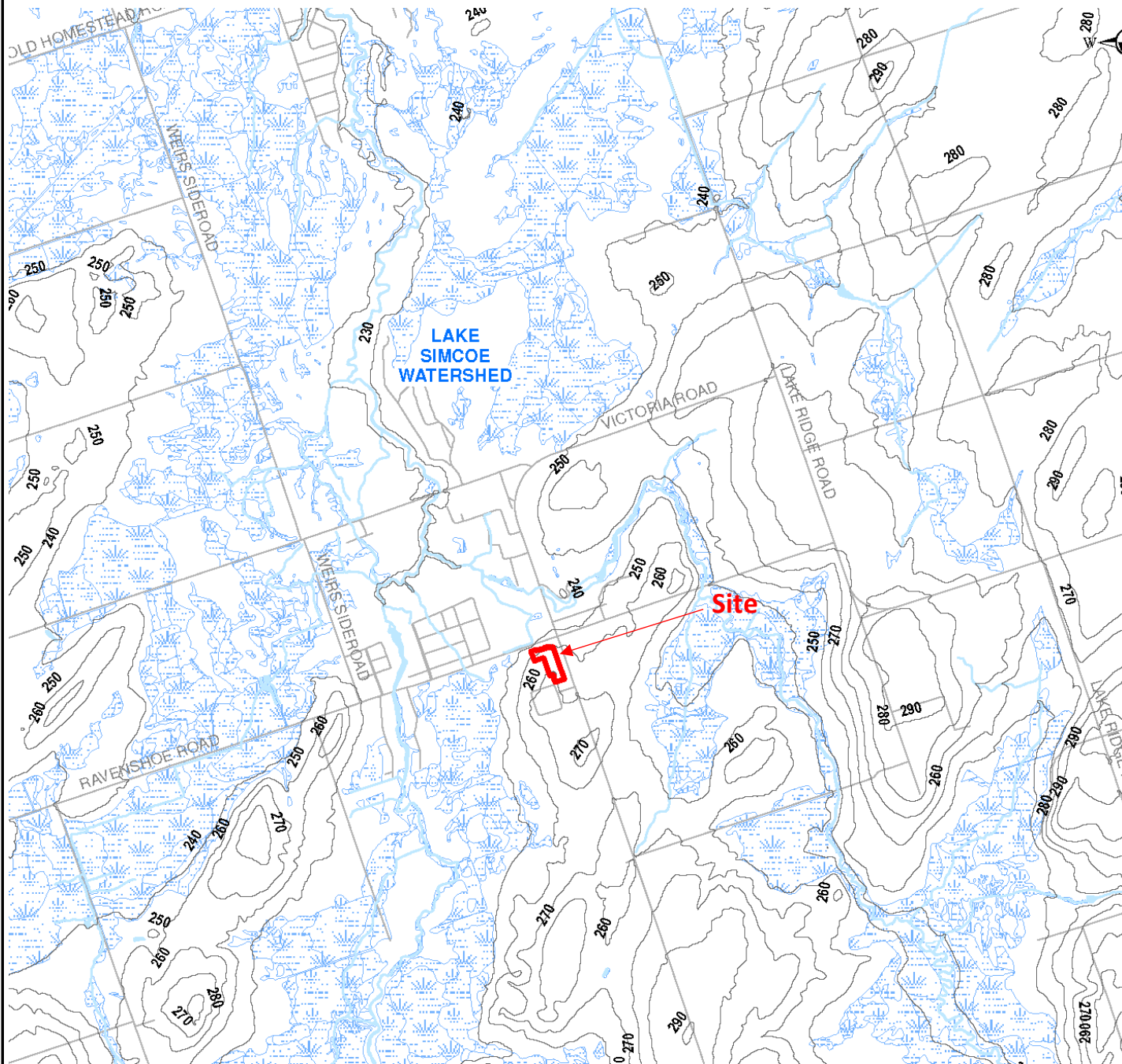
GAMAN Consultants Inc.

Figure



NOTES	SURFICIAL GEOLOGY		
	Udora Estates Water Balance Evaluation, Part Lot 35, Con. 6, TWP Uxbridge For 2695867 Ontario Inc.		
	Date:	Jan-25	Scale: AS SHOWN
	Project:	22012.00	Ref No:
	GAMAN Consultants Inc.		Figure 4





NOTES

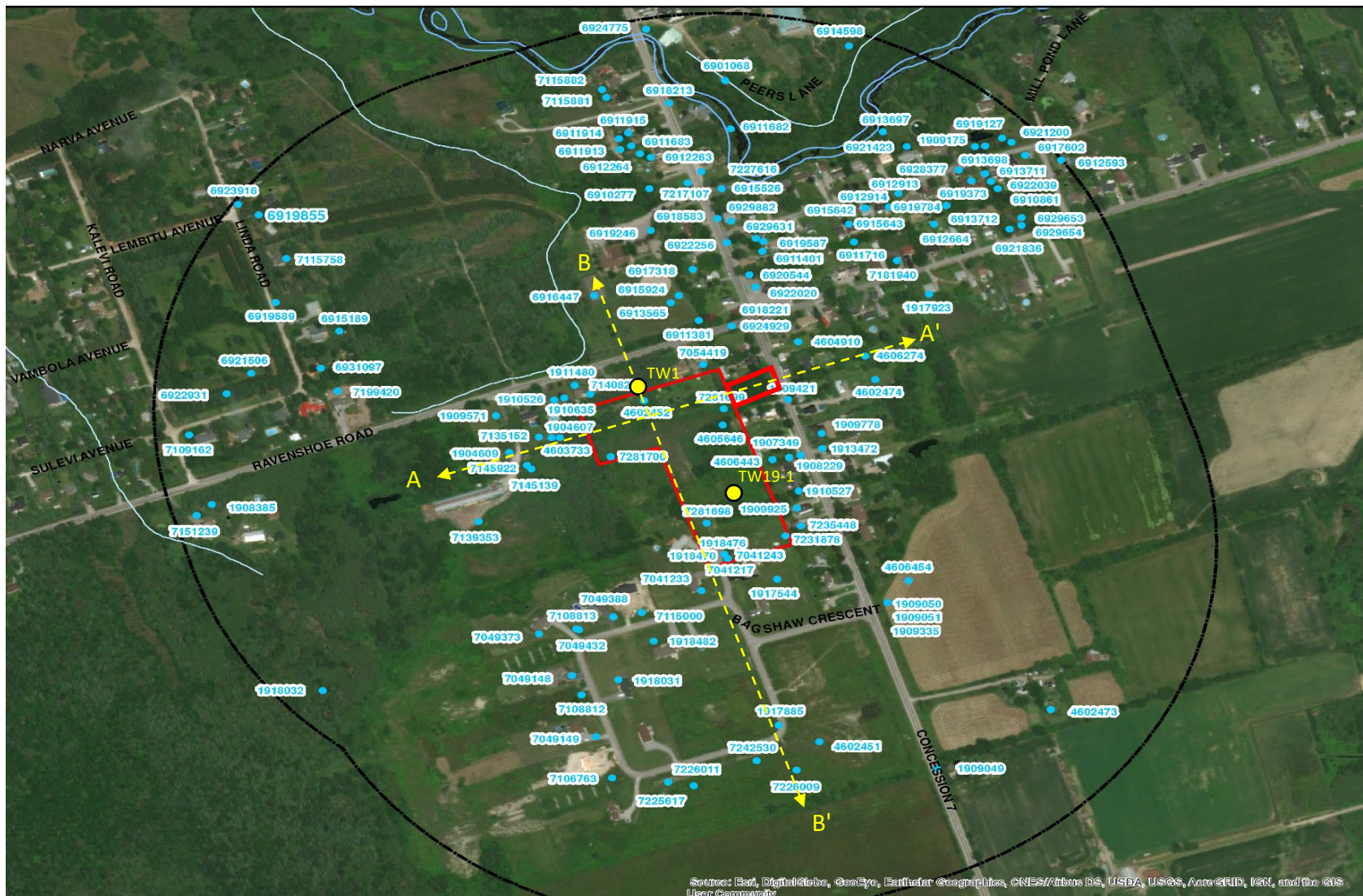
Drainage

Udora Estates Water Balance Evaluation,
Part Lot 35, Con. 6, TWP Uxbridge
For 2695867 Ontario Inc.

Date:	Jan-25	Scale:	AS SHOWN
Project:	22012.00	Ref No:	

GAMAN Consultants Inc.

Figure



NOTES

Site Location

B ←-----→ B' Line of Cross Section

Water Well Location Map

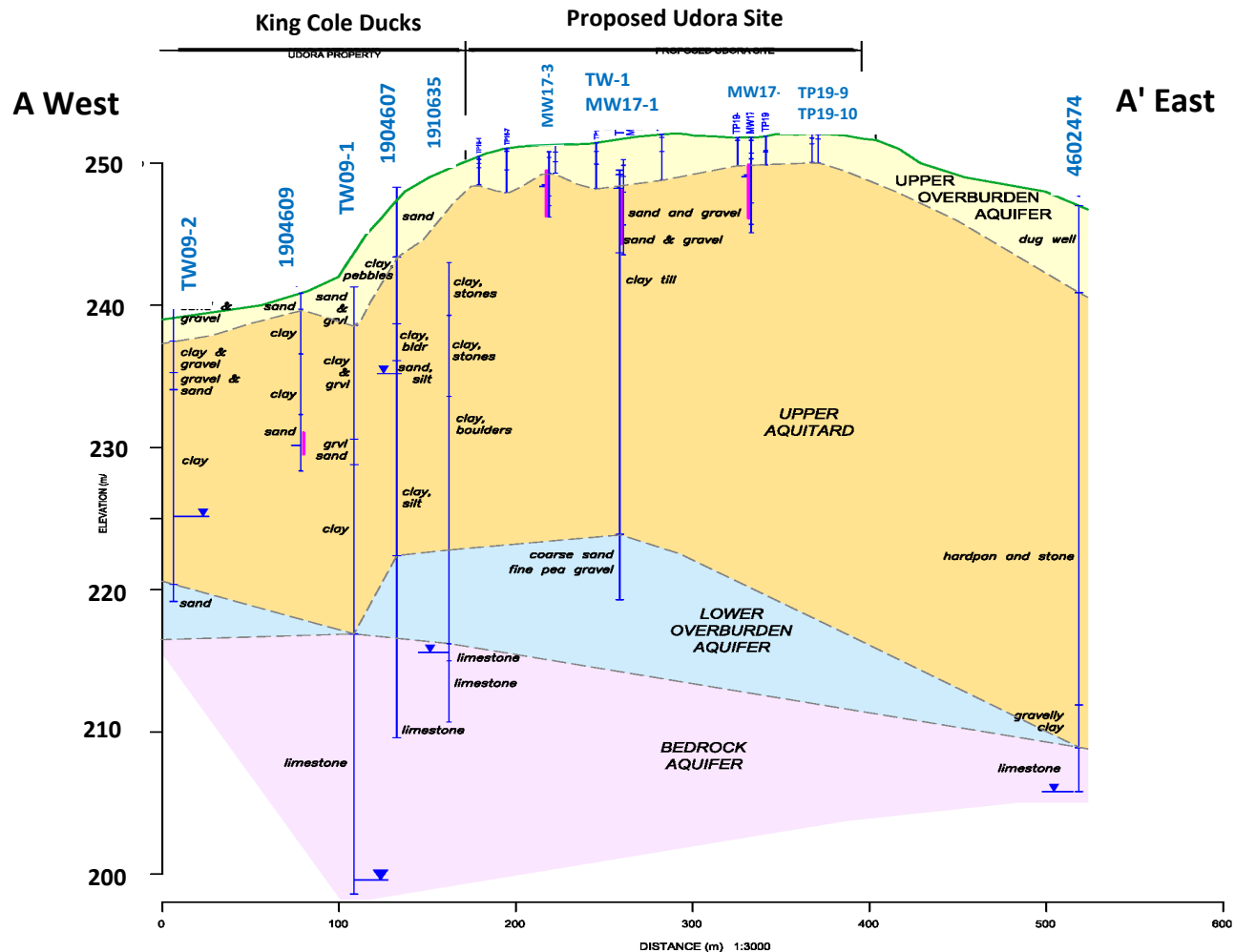
Udora Estates Water Balance Evaluation,
Part Lot 35, Con. 6, TWP Uxbridge
For 2695867 Ontario Inc.

Date: Jan-25 Scale: AS SHOWN

Project: 22012.00 Ref No:

GAMAN Consultants Inc.

Figure



NOTE:
THE ACTUAL SOIL STRATIFICATION HAS BEEN VERIFIED FROM DATA OBTAINED AT THE BOREHOLE AND TEST PIT LOCATIONS ONLY. THE INFERRED CONTACTS SHOWN ARE BASED ON GEOPHYSICAL EVIDENCE AND THESE MAY VARY FROM THOSE SHOWN BETWEEN BOREHOLES.

NOTES

Cross Section A-A'

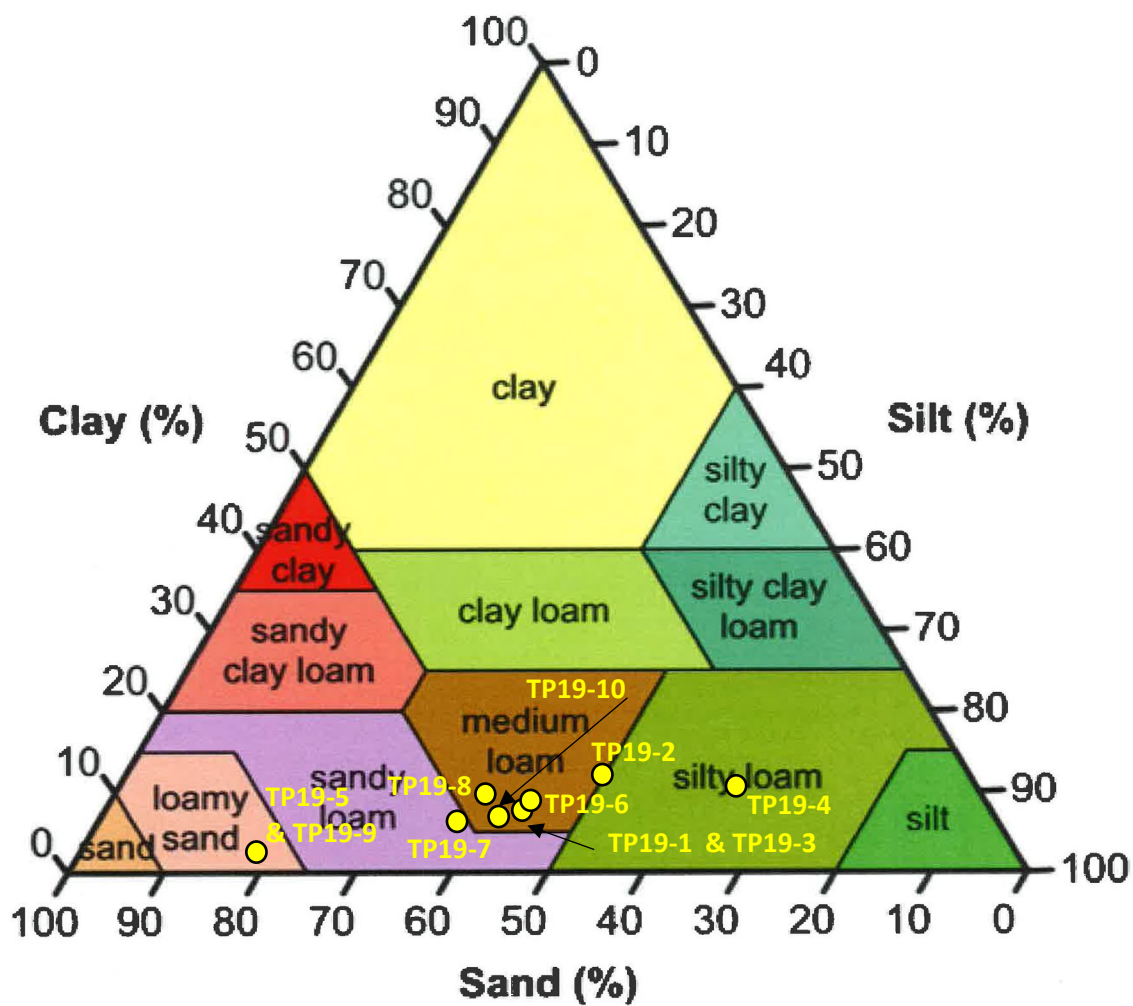
Udora Estates Water Balance Evaluation,
Part Lot 35, Con. 6, TWP Uxbridge
For 2695867 Ontario Inc.

Date: Jan-25 | Scale: AS SHOWN

Project: 22012.00 | Ref No:

GAMAN Consultants Inc.

Figure



NOTES

TP19-1 ● Test Pit Designation
with Particle Sizes

Agricultural Soils Chart

Udora Estates Water Balance Evaluation,
Part Lot 35, Con. 6, TWP Uxbridge
For 2695867 Ontario Inc.

Date: Jan-25

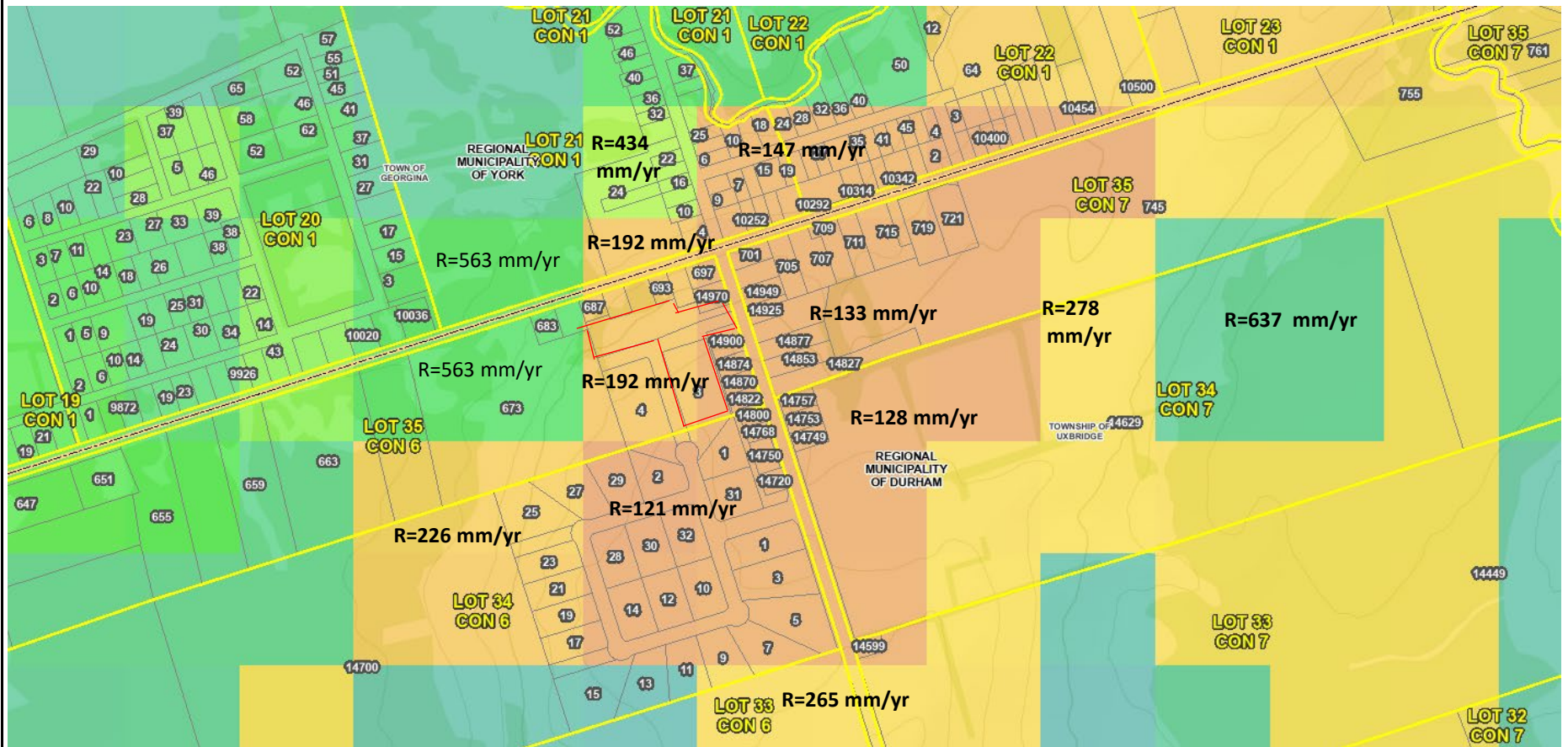
Scale: AS SHOWN

Project: 22012.00

Ref No:

GAMAN Consultants Inc.

Figure



NOTES

Site Location

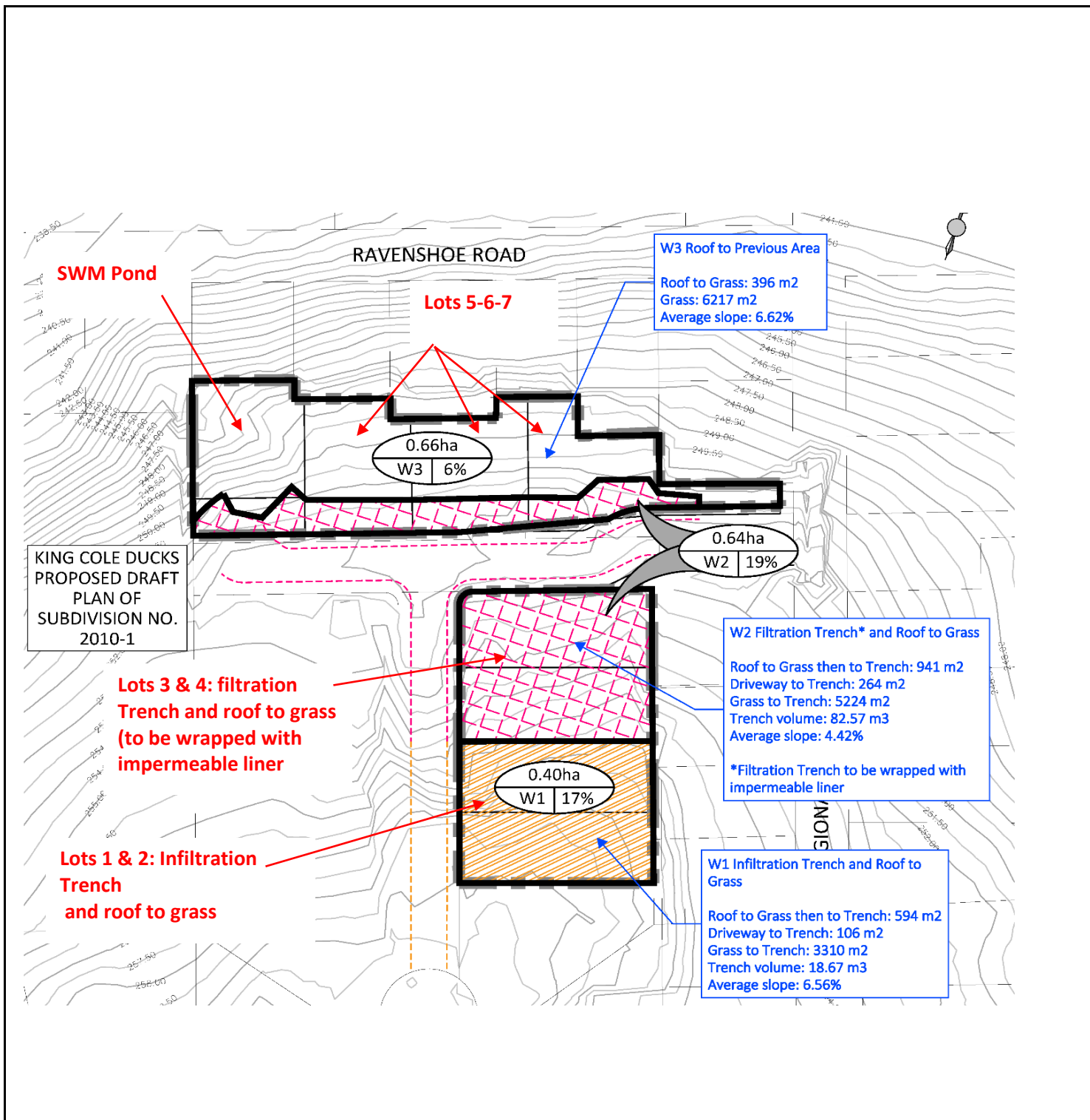
ORMGP Recharge Rates

Udora Estates Water Balance Evaluation,
Part Lot 35, Con. 6, TWP Uxbridge
For 2695867 Ontario Inc.

Date:	Jan-25	Scale:	AS SHOWN
Project:	22012.00	Ref No:	

GAMAN Consultants Inc.

Figure



NOTES	Proposed LID Plan		
	Udora Estates Water Balance Evaluation, Part Lot 35, Con. 6, TWP Uxbridge For 2695867 Ontario Inc.		
	Date:	Jan-25	Scale: AS SHOWN
	Project:	22012.00	Ref No:
	GAMAN Consultants Inc.		Figure 12

APPENDICES

APPENDIX A

WELL RECORDS WELL RECONNAISSANCE SURVEY

Table A-1 MECP Wells
Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
1917885	645032	4901420	260.56	24.99							Abandoned-Other		1917885				
1918470	644968	4901660	260.36		Other Method						Abandoned-Supply		1918470				
1918482	644885	4901538	260.77	176.00	Rotary (Air)						Abandoned-Supply	23.00	1918482	BROWN	SAND	SILTY	GRAVEL
	644885		260.77	176.00	Rotary (Air)						Abandoned-Supply	60.00		GREY	SAND	SILTY	GRAVEL
	644885		260.77	176.00	Rotary (Air)						Abandoned-Supply	141 .50		GREY	CLAY	SANDY	GRAVEL
	644885		260.77	176.00	Rotary (Air)						Abandoned-Supply	176 .00		GREY	LIMESTONE		
6911913	644845.7	4902228	234.75	2.13	Cable Tool						Abandoned-Supply	2.13	6911913	BROWN	CLAY	SAND	BOULDERS
6911914	644843.7	4902243	234.59	4.88	Cable Tool						Abandoned-Supply	4.88	6911914	BROWN	CLAY	SAND	BOULDERS
6911915	644854.7	4902251	234.74	21.03	Cable Tool						Abandoned-Supply	4.27	6911915	BROWN	CLAY	SAND	BOULDERS
	644854.7		234.74	21.03	Cable Tool						Abandoned-Supply	10.67		GREY	CLAY	BOULDERS	
	644854.7		234.74	21.03	Cable Tool						Abandoned-Supply	15.24		GREY	CLAY		
	644854.7		234.74	21.03	Cable Tool						Abandoned-Supply	21.03		GREY	CLAY	GRAVEL	BOULDERS
6929654	645317.8	4902121	244.21			9					Abandoned-Other		6929654				
7108813	644797	4901554	256.73								Abandoned-Supply		7108813				
7115758	644452	4902075	233.79								Unknown		7115758				
7140825	644810	4901884	243.57								Abandoned-Other		7140825				
7145139	644741	4901780	245.50								Unknown		7145139				
	644347	4901715	233.61								Unknown						
7226009	645053	4901357	261.54	48.70		48.00	28		LPM		Unknown	5.10	7226009	BROWN	CLAY	SAND	
	645053		261.54	48.70		48.00	28		LPM		Unknown	31.00		GREY	CLAY	BOULDERS	
	645053		261.54	48.70		48.00	28		LPM		Unknown	44.00		GREY	CLAY	STONES	LAYERED
	645053		261.54	48.70		48.00	28		LPM		Unknown	45.10		GREY	CLAY		SOFT
	645053		261.54	48.70		48.00	28		LPM		Unknown	48.70		GREY	LIMESTONE	CLAY	HARD
7235448	645058	4901700	257.42								Abandoned-Quality		7235448				
	644764.7	4901823	245.72	38.71	Rotary (Convent.)	13.11	6	27.276	GPM	Domestic	Water Supply	4.88		BROWN	SAND	PACKED	
	644764.7	4901823	245.72	38.71	Rotary (Convent.)	13.11	6	27.276	GPM	Domestic	Water Supply	9.75		BLUE	CLAY	STONES	DENSE

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
1904607	644764.7	4901823	245.72	38.71	Rotary (Convent.)	13.11	6	27.276	GPM	Domestic	Water Supply	12.19	B	GREY	CLAY	BOULDERS	LOOSE
	644764.7	4901823	245.72	38.71	Rotary (Convent.)	13.11	6	27.276	GPM	Domestic	Water Supply	13.11		BLACK	SAND	SILT	LOOSE
	644764.7	4901823	245.72	38.71	Rotary (Convent.)	13.11	6	27.276	GPM	Domestic	Water Supply	25.91		GREY	CLAY	SILT	HARD
	644764.7	4901823	245.72	38.71	Rotary (Convent.)	13.11	6	27.276	GPM	Domestic	Water Supply	38.71		BROWN	SHALE	HARD	
1904609	644714.7	4901803	242.09	12.50	Rotary (Convent.)	12.50	3	13.638	GPM	Domestic	Water Supply	4.27	0	BROWN	SAND	PACKED	
	644714.7	4901803	242.09	12.50	Rotary (Convent.)	12.50	3	13.638	GPM	Domestic	Water Supply	8.53		BLUE	CLAY	STONES	DENSE
	644714.7	4901803	242.09	12.50	Rotary (Convent.)	12.50	3	13.638	GPM	Domestic	Water Supply	11.28		GREY	CLAY	STONES	LOOSE
	644714.7	4901803	242.09	12.50	Rotary (Convent.)	12.50	3	13.638	GPM	Domestic	Water Supply	12.50		BLACK	SAND	SILT	LOOSE
1907349	645044	4901796	254.86	25.91	Rotary (Convent.)	24.38	3	13.638	GPM	Domestic	Water Supply	4.27	0	BROWN	CLAY		
	645044	4901796	254.86	25.91	Rotary (Convent.)	24.38	3	13.638	GPM	Domestic	Water Supply	23.77		GREY	CLAY	STONES	HARD
	645044	4901796	254.86	25.91	Rotary (Convent.)	24.38	3	13.638	GPM	Domestic	Water Supply	25.91		BROWN	GRAVEL	SAND	
1908229	645057.7	4901799	255.03	24.99	Cable Tool	24.99	7	31.822	GPM	Domestic	Water Supply	0.61	0		TOPSOIL		
	645057.7	4901799	255.03	24.99	Cable Tool	24.99	7	31.822	GPM	Domestic	Water Supply	3.66			SAND	CLAY	
	645057.7	4901799	255.03	24.99	Cable Tool	24.99	7	31.822	GPM	Domestic	Water Supply	23.16			HARDPAN		
	645057.7	4901799	255.03	24.99	Cable Tool	24.99	7	31.822	GPM	Domestic	Water Supply	24.99			SAND	GRAVEL	
1908385	644364.7	4901730	234.05	6.40	Boring	1.52	6	27.276	GPM	Domestic	Water Supply	0.30	1908385	BLACK	TOPSOIL		
	644364.7	4901730	234.05	6.40	Boring	1.52	6	27.276	GPM	Domestic	Water Supply	1.52		BROWN	CLAY	STONES	PACKED
	644364.7	4901730	234.05	6.40	Boring	1.52	6	27.276	GPM	Domestic	Water Supply	3.05		BROWN	SAND	WATER-BEARING	PACKED
	644364.7	4901730	234.05	6.40	Boring	1.52	6	27.276	GPM	Domestic	Water Supply	6.40		GREY	CLAY	PACKED	
1909050	645160	4901592	256.34	70.10	Rotary (Convent.)					Domestic	Abandoned-Supply	0.30	1909050		TOPSOIL		
	645160		256.34	70.10	Rotary (Convent.)					Domestic	Abandoned-Supply	2.74		BROWN	FINE SAND		
	645160		256.34	70.10	Rotary (Convent.)					Domestic	Abandoned-Supply	3.05			STONES		
	645160		256.34	70.10	Rotary (Convent.)					Domestic	Abandoned-Supply	19.81		GREY	CLAY	GRAVEL	
	645160		256.34	70.10	Rotary (Convent.)					Domestic	Abandoned-Supply	24.38			LIMESTONE	ROCK	
	645160		256.34	70.10	Rotary (Convent.)					Domestic	Abandoned-Supply	70.10			LIMESTONE	ROCK	
	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	0.30			TOPSOIL		

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
1909051	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	0.91	B		SAND		
	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	4.88		BROWN	CLAY	GRAVEL	SANDSTONE
	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	6.71		GREY	CLAY	GRAVEL	STONES
	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	18.59		GREY	CLAY	GRAVEL	
	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	24.69			FINE GRAVEL	LAYERED	CLAY
	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	26.52			LIMESTONE	ROCK	
	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	28.35		GREY	CLAY	GRAVEL	
	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	29.26		GREY	MEDIUM SAND		
	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	37.49		GREY	CLAY	GRAVEL	
	645160	4901592	256.34	39.01	Diamond	28.35	5	22.73	GPM	Domestic	Water Supply	39.01		GREY	LIMESTONE	ROCK	
1909175	645263	4902232	235.26	22.86	Cable Tool	21.34	15	68.19	GPM	Domestic	Water Supply	3.05	0	BROWN	SAND		
	645263	4902232	235.26	22.86	Cable Tool	21.34	15	68.19	GPM	Domestic	Water Supply	3.96			GRAVEL		
	645263	4902232	235.26	22.86	Cable Tool	21.34	15	68.19	GPM	Domestic	Water Supply	17.37		GREY	CLAY	SAND	
	645263	4902232	235.26	22.86	Cable Tool	21.34	15	68.19	GPM	Domestic	Water Supply	19.20			GRAVEL		
	645263	4902232	235.26	22.86	Cable Tool	21.34	15	68.19	GPM	Domestic	Water Supply	21.34		GREY	CLAY	STONES	
	645263	4902232	235.26	22.86	Cable Tool	21.34	15	68.19	GPM	Domestic	Water Supply	22.86			COARSE SAND		
1909335	645160	4901592	256.34	21.34	Cable Tool	17.98	4	18.184	GPM	Domestic	Water Supply	3.05	B	GREY	CLAY	SANDY	
	645160	4901592	256.34	21.34	Cable Tool	17.98	4	18.184	GPM	Domestic	Water Supply	12.19		GREY	SANDSTONE		
	645160	4901592	256.34	21.34	Cable Tool	17.98	4	18.184	GPM	Domestic	Water Supply	17.98		GREY	CLAY	GRAVELLY	
	645160	4901592	256.34	21.34	Cable Tool	17.98	4	18.184	GPM	Domestic	Water Supply	21.34		GREY	LIMESTONE		
1909421	645043	4901877	251.47	13.41	Rotary (Convent.)	12.19	6	27.276	GPM	Domestic	Water Supply	1.52	0	BLUE	CLAY		
	645043	4901877	251.47	13.41	Rotary (Convent.)	12.19	6	27.276	GPM	Domestic	Water Supply	11.89		BROWN	CLAY	STONES	
	645043	4901877	251.47	13.41	Rotary (Convent.)	12.19	6	27.276	GPM	Domestic	Water Supply	13.41		BROWN	SAND	STONES	
	644699	4901854	239.78	7.32	Boring	3.66	6	27.276	GPM	Domestic	Water Supply	0.61		BLACK	TOPSOIL		
	644699	4901854	239.78	7.32	Boring	3.66	6	27.276	GPM	Domestic	Water Supply	3.66		BROWN	CLAY	STONES	PACKED
	644699	4901854	239.78	7.32	Boring	3.66	6	27.276	GPM	Domestic	Water Supply	6.10		GREY	CLAY	LAYERED	WATER-BEARING

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
1909571	644699	4901854	239.78	7.32	Boring	3.66	6	27.276	GPM	Domestic	Water Supply	7.32	1909571	GREY	CLAY	STONES	CEMENTED
1909778	645082	4901829	253.55	40.54	Cable Tool	39.62	80	363.68	GPM	Domestic	Water Supply	21.34	B	BROWN	CLAY	STONEY	
	645082	4901829	253.55	40.54	Cable Tool	39.62	80	363.68	GPM	Domestic	Water Supply	25.91		GREY	CLAY	STONEY	
	645082	4901829	253.55	40.54	Cable Tool	39.62	80	363.68	GPM	Domestic	Water Supply	28.96		WHITE	CLAY	STONEY	
	645082	4901829	253.55	40.54	Cable Tool	39.62	80	363.68	GPM	Domestic	Water Supply	39.62		GREY	CLAY	SANDY	
	645082	4901829	253.55	40.54	Cable Tool	39.62	80	363.68	GPM	Domestic	Water Supply	40.54		GREY	SAND	GRAVEL	
	645082	4901829	253.55	40.54	Cable Tool	39.62	80	363.68	GPM	Domestic	Water Supply	40.54		WHITE	LIMESTONE		
1909925	645053.7	4901725	256.87	18.29	Cable Tool	18.29	20	90.92	GPM	Domestic	Water Supply	2.44	0	BROWN	SAND	GRAVEL	
	645053.7	4901725	256.87	18.29	Cable Tool	18.29	20	90.92	GPM	Domestic	Water Supply	15.24		GREY	SAND	GRAVEL	BOULDERS
	645053.7	4901725	256.87	18.29	Cable Tool	18.29	20	90.92	GPM	Domestic	Water Supply	17.07		BLUE	SAND	CLAY	
	645053.7	4901725	256.87	18.29	Cable Tool	18.29	20	90.92	GPM	Domestic	Water Supply	18.29		BROWN	SAND	GRAVEL	
1910526	644767.7	4901876	241.68	27.13	Rotary (Convent.)	22.25	10	45.46	GPM	Domestic	Water Supply	0.61	B	BROWN	CLAY	TOPSOIL	SOFT
	644767.7	4901876	241.68	27.13	Rotary (Convent.)	22.25	10	45.46	GPM	Domestic	Water Supply	2.44		BROWN	GRAVEL	CLAY	LOOSE
	644767.7	4901876	241.68	27.13	Rotary (Convent.)	22.25	10	45.46	GPM	Domestic	Water Supply	5.49		GREY	CLAY	SOFT	
	644767.7	4901876	241.68	27.13	Rotary (Convent.)	22.25	10	45.46	GPM	Domestic	Water Supply	22.25		BLUE	CLAY	SANDY	HARD
	644767.7	4901876	241.68	27.13	Rotary (Convent.)	22.25	10	45.46	GPM	Domestic	Water Supply	27.13		GREY	LIMESTONE	HARD	
1910527	645055.7	4901749	256.00	44.20	Rotary (Convent.)	43.28	12	54.552	GPM	Domestic	Water Supply	0.61	B	BROWN	SAND	FILL	LOOSE
	645055.7	4901749	256.00	44.20	Rotary (Convent.)	43.28	12	54.552	GPM	Domestic	Water Supply	8.23		BROWN	CLAY	STONES	HARD
	645055.7	4901749	256.00	44.20	Rotary (Convent.)	43.28	12	54.552	GPM	Domestic	Water Supply	39.93		GREY	CLAY	BOULDERS	SILT
	645055.7	4901749	256.00	44.20	Rotary (Convent.)	43.28	12	54.552	GPM	Domestic	Water Supply	44.20		GREY	LIMESTONE	HARD	
1910635	644779.7	4901879	241.82	32.31	Rotary (Convent.)	26.82	8	36.368	GPM	Domestic	Water Supply	3.66	B	BROWN	CLAY	STONES	HARD
	644779.7	4901879	241.82	32.31	Rotary (Convent.)	26.82	8	36.368	GPM	Domestic	Water Supply	9.45		BLUE	CLAY	STONES	SOFT
	644779.7	4901879	241.82	32.31	Rotary (Convent.)	26.82	8	36.368	GPM	Domestic	Water Supply	26.82		BLUE	CLAY	BOULDERS	HARD
	644779.7	4901879	241.82	32.31	Rotary (Convent.)	26.82	8	36.368	GPM	Domestic	Water Supply	28.04		GREY	LIMESTONE	SHALE	
	644779.7	4901879	241.82	32.31	Rotary (Convent.)	26.82	8	36.368	GPM	Domestic	Water Supply	32.31		GREY	LIMESTONE	HARD	
	644791.7	4901897	240.00	35.05	Cable Tool	32.92	5	22.73	GPM	Domestic	Water Supply	6.10		BROWN	CLAY	SOFT	

Table A-1 MECP Wells
Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
1911480	644791.7	4901897	240.00	35.05	Cable Tool	32.92	5	22.73	GPM	Domestic	Water Supply	8.53	0	GREY	CLAY		
	644791.7	4901897	240.00	35.05	Cable Tool	32.92	5	22.73	GPM	Domestic	Water Supply	26.52		GREY	CLAY	STONES	
	644791.7	4901897	240.00	35.05	Cable Tool	32.92	5	22.73	GPM	Domestic	Water Supply	30.48		GREY	CLAY		
	644791.7	4901897	240.00	35.05	Cable Tool	32.92	5	22.73	GPM	Domestic	Water Supply	32.00		GREY	CLAY	GRAVEL	
	644791.7	4901897	240.00	35.05	Cable Tool	32.92	5	22.73	GPM	Domestic	Water Supply	32.92		GREY	SAND	CLAY	SILT
	644791.7	4901897	240.00	35.05	Cable Tool	32.92	5	22.73	GPM	Domestic	Water Supply	35.05		GREY	SHALE		
1913472	645083	4901808	254.39	23.77	Rotary (Convent.)	23.77	8	36.368	GPM	Domestic	Water Supply	0.30	0	BLACK	TOPSOIL	PACKED	
	645083	4901808	254.39	23.77	Rotary (Convent.)	23.77	8	36.368	GPM	Domestic	Water Supply	8.53		BROWN	CLAY	STONES	HARD
	645083	4901808	254.39	23.77	Rotary (Convent.)	23.77	8	36.368	GPM	Domestic	Water Supply	19.20		GREY	CLAY	STONES	HARD
	645083	4901808	254.39	23.77	Rotary (Convent.)	23.77	8	36.368	GPM	Domestic	Water Supply	22.86		GREY	SAND	STONES	LOOSE
	645083	4901808	254.39	23.77	Rotary (Convent.)	23.77	8	36.368	GPM	Domestic	Water Supply	23.77		GREY	STONES	CLAY	HARD
1917923	645209	4902025	242.26	33.53	Rotary (Air)	33.00	75	75	LPM	Domestic	Water Supply	6.71	B	BROWN	SAND		
	645209	4902025	242.26	33.53	Rotary (Air)	33.00	75	75	LPM	Domestic	Water Supply	28.66		GREY	CLAY	STONES	
	645209	4902025	242.26	33.53	Rotary (Air)	33.00	75	75	LPM	Domestic	Water Supply	33.53		GREY	LIMESTONE		
1918031	644843	4901484	260.78	37.80	Rotary (Air)	36.88	4		LPM	Domestic	Test Hole	4.57	1918031	BROWN	SAND	CLAY	STONES
	644843		260.78	37.80	Rotary (Air)	36.88	4		LPM	Domestic	Test Hole	6.10		BROWN	SAND	GRAVEL	
	644843		260.78	37.80	Rotary (Air)	36.88	4		LPM	Domestic	Test Hole	9.75		GREY	CLAY	SILT	SOFT
	644843		260.78	37.80	Rotary (Air)	36.88	4		LPM	Domestic	Test Hole	12.19		BROWN	CLAY	SILT	SOFT
	644843		260.78	37.80	Rotary (Air)	36.88	4		LPM	Domestic	Test Hole	28.96		GREY	CLAY		
	644843		260.78	37.80	Rotary (Air)	36.88	4		LPM	Domestic	Test Hole	29.87		GREY	GRAVEL	SILT	
	644843		260.78	37.80	Rotary (Air)	36.88	4		LPM	Domestic	Test Hole	36.88		GREY	SILT	SAND	
	644843		260.78	37.80	Rotary (Air)	36.88	4		LPM	Domestic	Test Hole	37.80		BROWN	SAND		
	644495		237.22	48.16	Rotary (Air)	47.85	5		LPM	Domestic	Test Hole	0.61		BROWN	TOPSOIL		
	644495		237.22	48.16	Rotary (Air)	47.85	5		LPM	Domestic	Test Hole	8.84		BROWN	SAND	CLAY	
	644495		237.22	48.16	Rotary (Air)	47.85	5		LPM	Domestic	Test Hole	9.14		BROWN	GRAVEL		
	644495		237.22	48.16	Rotary (Air)	47.85	5		LPM	Domestic	Test Hole	27.74		GREY	CLAY		

Table A-1 MECP Wells
Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
1918032	644495	4901469	237.22	48.16	Rotary (Air)	47.85	5		LPM	Domestic	Test Hole	29.57	1918032	BROWN	CLAY		
	644495		237.22	48.16	Rotary (Air)	47.85	5		LPM	Domestic	Test Hole	38.10		GREY	CLAY		
	644495		237.22	48.16	Rotary (Air)	47.85	5		LPM	Domestic	Test Hole	38.71		GREY	SAND		
	644495		237.22	48.16	Rotary (Air)	47.85	5		LPM	Domestic	Test Hole	43.89		GREY	CLAY		
	644495		237.22	48.16	Rotary (Air)	47.85	5		LPM	Domestic	Test Hole	48.16		BROWN	ROCK		
1918476	644968	4901660	260.36	77.94	Rotary (Air)	43.13	3	13.638	GPM	Domestic	Water Supply	4.88	B	BROWN	CLAY	SILTY	GRAVEL
	644968	4901660	260.36	77.94	Rotary (Air)	43.13	3	13.638	GPM	Domestic	Water Supply	31.39		GREY	CLAY	SANDY	GRAVEL
	644968	4901660	260.36	77.94	Rotary (Air)	43.13	3	13.638	GPM	Domestic	Water Supply	39.32		GREY	CLAY	SANDY	SILT
	644968	4901660	260.36	77.94	Rotary (Air)	43.13	3	13.638	GPM	Domestic	Water Supply	43.13		GREY	CLAY	SANDY	GRAVEL
	644968	4901660	260.36	77.94	Rotary (Air)	43.13	3	13.638	GPM	Domestic	Water Supply	77.94		GREY	LIMESTONE		
4602452	644873.7	4901875	249.89	36.58	Cable Tool	35.05	2	9.092	GPM	Domestic	Water Supply	7.62	B		PREVIOUSLY DUG		
	644873.7	4901875	249.89	36.58	Cable Tool	35.05	2	9.092	GPM	Domestic	Water Supply	14.63		GREY	MEDIUM		
	644873.7	4901875	249.89	36.58	Cable Tool	35.05	2	9.092	GPM	Domestic	Water Supply	27.74		GREY	CLAY	GRAVEL	
	644873.7	4901875	249.89	36.58	Cable Tool	35.05	2	9.092	GPM	Domestic	Water Supply	36.58			LIMESTONE		
4602474	645145.7	4901905	245.99	41.15	Cable Tool	38.10	7	31.822	GPM	Domestic	Water Supply	6.10	B		PREVIOUSLY DUG		
	645145.7	4901905	245.99	41.15	Cable Tool	38.10	7	31.822	GPM	Domestic	Water Supply	35.05			HARDPAN	STONES	
	645145.7	4901905	245.99	41.15	Cable Tool	38.10	7	31.822	GPM	Domestic	Water Supply	38.10			CLAY	GRAVEL	
	645145.7	4901905	245.99	41.15	Cable Tool	38.10	7	31.822	GPM	Domestic	Water Supply	41.15			LIMESTONE		
4604910	645054.7	4901958	246.44	8.53	Boring	3.05	10	45.46	GPM	Domestic	Water Supply	0.30	4604910	BLACK	TOPSOIL		
	645054.7	4901958	246.44	8.53	Boring	3.05	10	45.46	GPM	Domestic	Water Supply	3.05		BROWN	CLAY		
	645054.7	4901958	246.44	8.53	Boring	3.05	10	45.46	GPM	Domestic	Water Supply	3.35		BROWN	CLAY	SILT	
	645054.7	4901958	246.44	8.53	Boring	3.05	10	45.46	GPM	Domestic	Water Supply	6.40		BLUE	CLAY	STONES	
	645054.7	4901958	246.44	8.53	Boring	3.05	10	45.46	GPM	Domestic	Water Supply	7.01		BLUE	CLAY	SILT	
	645054.7	4901958	246.44	8.53	Boring	3.05	10	45.46	GPM	Domestic	Water Supply	8.53		BLUE	CLAY	STONES	
	644965.7	4901841	253.97	43.28	Rotary (Convent.)	43.28	6	27.276	GPM	Domestic	Water Supply	6.10		BROWN	CLAY	STONES	
	644965.7	4901841	253.97	43.28	Rotary (Convent.)	43.28	6	27.276	GPM	Domestic	Water Supply	40.54		BLUE	CLAY	STONES	

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
4605646	644965.7	4901841	253.97	43.28	Rotary (Convent.)	43.28	6	27.276	GPM	Domestic	Water Supply	43.28	B	GREY	LIMESTONE		
SAND																	
4606274	645133.7	4901938	245.45	15.24	Cable Tool	14.02	6	27.276	GPM	Domestic	Water Supply	0.61	0	BLACK	TOPSOIL		
	645133.7	4901938	245.45	15.24	Cable Tool	14.02	6	27.276	GPM	Domestic	Water Supply	3.05		BROWN	CLAY	BOULDERS	
	645133.7	4901938	245.45	15.24	Cable Tool	14.02	6	27.276	GPM	Domestic	Water Supply	12.19		GREY	CLAY	GRAVEL	
	645133.7	4901938	245.45	15.24	Cable Tool	14.02	6	27.276	GPM	Domestic	Water Supply	15.24		GREY	CLAY	GRAVEL	
4606443	645024.7	4901793	255.09	45.72	Cable Tool	41.76	15	68.19	GPM	Domestic	Water Supply	0.61	B	BLACK	TOPSOIL		
	645024.7	4901793	255.09	45.72	Cable Tool	41.76	15	68.19	GPM	Domestic	Water Supply	6.10		BROWN	CLAY	STONES	HARD
	645024.7	4901793	255.09	45.72	Cable Tool	41.76	15	68.19	GPM	Domestic	Water Supply	22.86		BLUE	CLAY	STONES	HARDPAN
	645024.7	4901793	255.09	45.72	Cable Tool	41.76	15	68.19	GPM	Domestic	Water Supply	23.77		GREY	GRAVEL	CLAY	
	645024.7	4901793	255.09	45.72	Cable Tool	41.76	15	68.19	GPM	Domestic	Water Supply	40.54		GREY	CLAY	STONES	HARDPAN
	645024.7	4901793	255.09	45.72	Cable Tool	41.76	15	68.19	GPM	Domestic	Water Supply	45.72		WHITE	LIMESTONE	HARD	
4606454	645184.7	4901623	255.56	43.89	Cable Tool	41.15	15	68.19	GPM	Domestic	Water Supply	6.10	B	BROWN	CLAY	SAND	
	645184.7	4901623	255.56	43.89	Cable Tool	41.15	15	68.19	GPM	Domestic	Water Supply	9.14		BROWN	CLAY	STONES	
	645184.7	4901623	255.56	43.89	Cable Tool	41.15	15	68.19	GPM	Domestic	Water Supply	18.29		BLUE	CLAY	STONES	HARDPAN
	645184.7	4901623	255.56	43.89	Cable Tool	41.15	15	68.19	GPM	Domestic	Water Supply	27.43		BLUE	CLAY	GRAVEL	LAYERED
	645184.7	4901623	255.56	43.89	Cable Tool	41.15	15	68.19	GPM	Domestic	Water Supply	39.32		BLUE	CLAY	BOULDERS	HARDPAN
	645184.7	4901623	255.56	43.89	Cable Tool	41.15	15	68.19	GPM	Domestic	Water Supply	43.89		WHITE	LIMESTONE	FRACTURED	
6910277	644879.7	4902173	234.64	12.50	Cable Tool	12.50	10	45.46	GPM	Domestic	Water Supply	3.66	0	BROWN	CLAY	MEDIUM SAND	
	644879.7	4902173	234.64	12.50	Cable Tool	12.50	10	45.46	GPM	Domestic	Water Supply	12.19		BLUE	CLAY	STONES	
	644879.7	4902173	234.64	12.50	Cable Tool	12.50	10	45.46	GPM	Domestic	Water Supply	12.50		GREY	GRAVEL	MEDIUM SAND	
6910861	645289.7	4902173	240.83	18.90	Rotary (Convent.)	18.90	20	90.92	GPM	Domestic	Water Supply	6.10	0	BROWN	SAND		
	645289.7	4902173	240.83	18.90	Rotary (Convent.)	18.90	20	90.92	GPM	Domestic	Water Supply	12.50		BLUE	CLAY		
	645289.7	4902173	240.83	18.90	Rotary (Convent.)	18.90	20	90.92	GPM	Domestic	Water Supply	15.24		GREY	CLAY	SILT	STONES
	645289.7	4902173	240.83	18.90	Rotary (Convent.)	18.90	20	90.92	GPM	Domestic	Water Supply	18.90		GREY	SAND	GRAVEL	STONES
	644937.7	4901988	242.15	14.63	Rotary (Convent.)	14.63	6	27.276	GPM	Domestic	Water Supply	5.49		BROWN	CLAY	STONES	

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
6911381	644937.7	4901988	242.15	14.63	Rotary (Convent.)	14.63	6	27.276	GPM	Domestic	Water Supply	10.97	0	GREY	CLAY	STONES	BOULDERS
	644937.7	4901988	242.15	14.63	Rotary (Convent.)	14.63	6	27.276	GPM	Domestic	Water Supply	14.63		GREY	SAND	GRAVEL	
6911401	645012.7	4902085	237.54	24.99	Rotary (Convent.)	24.99	10	45.46	GPM	Domestic	Water Supply	0.91	0	BROWN	CLAY		
	645012.7	4902085	237.54	24.99	Rotary (Convent.)	24.99	10	45.46	GPM	Domestic	Water Supply	3.66		BROWN	GRAVEL		
	645012.7	4902085	237.54	24.99	Rotary (Convent.)	24.99	10	45.46	GPM	Domestic	Water Supply	24.69		BLUE	CLAY	SILT	STONES
	645012.7	4902085	237.54	24.99	Rotary (Convent.)	24.99	10	45.46	GPM	Domestic	Water Supply	24.99		GREY	GRAVEL		
6911682	644975.7	4902257	230.66	18.90	Rotary (Convent.)	13.72	5	22.73	GPM	Domestic	Water Supply	1.83	B	BROWN	SAND	GRAVEL	
	644975.7	4902257	230.66	18.90	Rotary (Convent.)	13.72	5	22.73	GPM	Domestic	Water Supply	4.27		BROWN	GRAVEL		
	644975.7	4902257	230.66	18.90	Rotary (Convent.)	13.72	5	22.73	GPM	Domestic	Water Supply	13.72		BLUE	CLAY	STONES	
	644975.7	4902257	230.66	18.90	Rotary (Convent.)	13.72	5	22.73	GPM	Domestic	Water Supply	14.02		GREY	SAND		
	644975.7	4902257	230.66	18.90	Rotary (Convent.)	13.72	5	22.73	GPM	Domestic	Water Supply	18.59		BLUE	CLAY	STONES	
	644975.7	4902257	230.66	18.90	Rotary (Convent.)	13.72	5	22.73	GPM	Domestic	Water Supply	18.90		GREY	LIMESTONE		
6911683	644858.7	4902233	235.02	28.04	Rotary (Convent.)	10.67	8	36.368	GPM	Domestic	Water Supply	2.44	B	BROWN	CLAY	STONES	
	644858.7	4902233	235.02	28.04	Rotary (Convent.)	10.67	8	36.368	GPM	Domestic	Water Supply	10.67		GREY	CLAY	STONES	
	644858.7	4902233	235.02	28.04	Rotary (Convent.)	10.67	8	36.368	GPM	Domestic	Water Supply	10.97		GREY	GRAVEL		
	644858.7	4902233	235.02	28.04	Rotary (Convent.)	10.67	8	36.368	GPM	Domestic	Water Supply	19.51		GREY	CLAY	BOULDERS	STONES
	644858.7	4902233	235.02	28.04	Rotary (Convent.)	10.67	8	36.368	GPM	Domestic	Water Supply	28.04		GREY	LIMESTONE		
6911716	645120.7	4902098	238.91	34.75	Rotary (Convent.)	29.26	4	18.184	GPM	Domestic	Water Supply	0.61	B	BROWN	SAND	FILL	
	645120.7	4902098	238.91	34.75	Rotary (Convent.)	29.26	4	18.184	GPM	Domestic	Water Supply	0.91		BLACK	TOPSOIL		
	645120.7	4902098	238.91	34.75	Rotary (Convent.)	29.26	4	18.184	GPM	Domestic	Water Supply	6.10		BROWN	CLAY	STONES	BOULDERS
	645120.7	4902098	238.91	34.75	Rotary (Convent.)	29.26	4	18.184	GPM	Domestic	Water Supply	28.65		GREY	CLAY	STONES	BOULDERS
	645120.7	4902098	238.91	34.75	Rotary (Convent.)	29.26	4	18.184	GPM	Domestic	Water Supply	29.26		GREY	GRAVEL		
	645120.7	4902098	238.91	34.75	Rotary (Convent.)	29.26	4	18.184	GPM	Domestic	Water Supply	34.75		GREY	LIMESTONE		
	644881.7	4902217	235.12	19.81	Cable Tool	19.51	13	59.098	GPM	Domestic	Water Supply	3.66		BLUE	CLAY		
	644881.7	4902217	235.12	19.81	Cable Tool	19.51	13	59.098	GPM	Domestic	Water Supply	7.32		GREY	GRAVEL		
	644881.7	4902217	235.12	19.81	Cable Tool	19.51	13	59.098	GPM	Domestic	Water Supply	18.59		BLUE	CLAY	STONES	

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
6912263	644881.7	4902217	235.12	19.81	Cable Tool	19.51	13	59.098	GPM	Domestic	Water Supply	19.81	B	GREY	LIMESTONE		
6912264	644868.7	4902222	235.01	18.59	Cable Tool	17.37	20	90.92	GPM	Domestic	Water Supply	5.49	0	YELLOW	SAND	CLAY	
	644868.7	4902222	235.01	18.59	Cable Tool	17.37	20	90.92	GPM	Domestic	Water Supply	7.32		GREY	BOULDERS		
	644868.7	4902222	235.01	18.59	Cable Tool	17.37	20	90.92	GPM	Domestic	Water Supply	13.72		BLUE	CLAY	SAND	
	644868.7	4902222	235.01	18.59	Cable Tool	17.37	20	90.92	GPM	Domestic	Water Supply	17.37		BROWN	CLAY	SAND	
	644868.7	4902222	235.01	18.59	Cable Tool	17.37	20	90.92	GPM	Domestic	Water Supply	18.59		BROWN	SAND	GRAVEL	
6912593	645364.7	4902213	242.82	25.91	Cable Tool	24.99	10	45.46	GPM	Domestic	Water Supply	3.66	0		SAND	STONES	
	645364.7	4902213	242.82	25.91	Cable Tool	24.99	10	45.46	GPM	Domestic	Water Supply	9.75			GRAVEL	STONES	
	645364.7	4902213	242.82	25.91	Cable Tool	24.99	10	45.46	GPM	Domestic	Water Supply	24.99			STONES		
	645364.7	4902213	242.82	25.91	Cable Tool	24.99	10	45.46	GPM	Domestic	Water Supply	25.91		BROWN	GRAVEL		
6912664	645214.7	4902123	239.40	16.15	Rotary (Convent.)	16.15	6	27.276	GPM	Domestic	Water Supply	3.35	0	BROWN	SAND		
	645214.7	4902123	239.40	16.15	Rotary (Convent.)	16.15	6	27.276	GPM	Domestic	Water Supply	9.14		BLUE	CLAY		
	645214.7	4902123	239.40	16.15	Rotary (Convent.)	16.15	6	27.276	GPM	Domestic	Water Supply	10.06		GREY	CLAY	STONES	
	645214.7	4902123	239.40	16.15	Rotary (Convent.)	16.15	6	27.276	GPM	Domestic	Water Supply	15.24		GREY	CLAY	STONES	
	645214.7	4902123	239.40	16.15	Rotary (Convent.)	16.15	6	27.276	GPM	Domestic	Water Supply	16.15		GREY	SAND	GRAVEL	
6912913	645172.7	4902166	236.84	14.63	Rotary (Convent.)	14.63	12	54.552	GPM	Domestic	Water Supply	2.44	0	BROWN	SAND	GRAVEL	
	645172.7	4902166	236.84	14.63	Rotary (Convent.)	14.63	12	54.552	GPM	Domestic	Water Supply	10.67		BLUE	CLAY		
	645172.7	4902166	236.84	14.63	Rotary (Convent.)	14.63	12	54.552	GPM	Domestic	Water Supply	13.41		GREY	CLAY	STONES	
	645172.7	4902166	236.84	14.63	Rotary (Convent.)	14.63	12	54.552	GPM	Domestic	Water Supply	14.63		GREY	SAND	GRAVEL	
6912914	645161.7	4902147	237.48	14.63	Rotary (Convent.)	14.63	10	45.46	GPM	Domestic	Water Supply	2.13	0	BROWN	GRAVEL	SAND	
	645161.7	4902147	237.48	14.63	Rotary (Convent.)	14.63	10	45.46	GPM	Domestic	Water Supply	13.72		GREY	CLAY	STONES	
	645161.7	4902147	237.48	14.63	Rotary (Convent.)	14.63	10	45.46	GPM	Domestic	Water Supply	14.63		GREY	SAND	GRAVEL	
	644904.7	4902013	239.32	13.11	Cable Tool	11.89	20	90.92	GPM	Domestic	Water Supply	2.13		BROWN	CLAY	SAND	
	644904.7	4902013	239.32	13.11	Cable Tool	11.89	20	90.92	GPM	Domestic	Water Supply	9.75		BROWN	SAND	CLAY	STONES
	644904.7	4902013	239.32	13.11	Cable Tool	11.89	20	90.92	GPM	Domestic	Water Supply	11.89		BROWN	FINE SAND		
	644904.7	4902013	239.32	13.11	Cable Tool	11.89	20	90.92	GPM	Domestic	Water Supply	12.50		BROWN	COARSE SAND		

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
6913565	644904.7	4902013	239.32	13.11	Cable Tool	11.89	20	90.92	GPM	Domestic	Water Supply	13 .11	0	BLACK	GRAVEL		
6913697	645154.7	4902253	231.04	10.97	Cable Tool	5.49	20	90.92	GPM	Domestic	Water Supply	5.49	0	BROWN	CLAY	SANDY	
	645154.7	4902253	231.04	10.97	Cable Tool	5.49	20	90.92	GPM	Domestic	Water Supply	9.75		GREY	GRAVEL	CLAY	
	645154.7	4902253	231.04	10.97	Cable Tool	5.49	20	90.92	GPM	Domestic	Water Supply	10.97		GREY	GRAVEL	CLEAN	
6913698	645274.7	4902233	236.15	10.67	Cable Tool	5.79	12	54.552	GPM	Domestic	Water Supply	5.79	0	BROWN	CLAY	SANDY	
	645274.7	4902233	236.15	10.67	Cable Tool	5.79	12	54.552	GPM	Domestic	Water Supply	9.14		GREY	GRAVEL		
	645274.7	4902233	236.15	10.67	Cable Tool	5.79	12	54.552	GPM	Domestic	Water Supply	10.67		GREY	GRAVEL	CLEAN	
6913711	645274.7	4902194	238.72	17.68	Rotary (Convent.)	17.68	25	113.65	GPM	Domestic	Water Supply	2.74	0	BROWN	SAND		
	645274.7	4902194	238.72	17.68	Rotary (Convent.)	17.68	25	113.65	GPM	Domestic	Water Supply	9.75		BLUE	CLAY		
	645274.7	4902194	238.72	17.68	Rotary (Convent.)	17.68	25	113.65	GPM	Domestic	Water Supply	15.24		GREY	CLAY	STONES	
	645274.7	4902194	238.72	17.68	Rotary (Convent.)	17.68	25	113.65	GPM	Domestic	Water Supply	17.68		GREY	SAND	GRAVEL	
6913712	645229.7	4902149	238.76	16.76	Rotary (Convent.)	16.76	7	31.822	GPM	Domestic	Water Supply	2.74	0	BROWN	SAND		
	645229.7	4902149	238.76	16.76	Rotary (Convent.)	16.76	7	31.822	GPM	Domestic	Water Supply	8.23		BLUE	CLAY		
	645229.7	4902149	238.76	16.76	Rotary (Convent.)	16.76	7	31.822	GPM	Domestic	Water Supply	9.14		RED	GRANITE	BOULDERS	
	645229.7	4902149	238.76	16.76	Rotary (Convent.)	16.76	7	31.822	GPM	Domestic	Water Supply	14.63		GREY	CLAY	STONES	
	645229.7	4902149	238.76	16.76	Rotary (Convent.)	16.76	7	31.822	GPM	Domestic	Water Supply	16.76		GREY	SAND	GRAVEL	
6914598	645114.7	4902373	234.85	25.30	Rotary (Convent.)	22.25	6	27.276	GPM	Domestic	Water Supply	0.91	B	BROWN	SAND	DRY	
	645114.7	4902373	234.85	25.30	Rotary (Convent.)	22.25	6	27.276	GPM	Domestic	Water Supply	3.35		BROWN	GRAVEL	DRY	
	645114.7	4902373	234.85	25.30	Rotary (Convent.)	22.25	6	27.276	GPM	Domestic	Water Supply	6.10		BROWN	GRAVEL	SAND	
	645114.7	4902373	234.85	25.30	Rotary (Convent.)	22.25	6	27.276	GPM	Domestic	Water Supply	9.14		BROWN	SAND	CLAY	PACKED
	645114.7	4902373	234.85	25.30	Rotary (Convent.)	22.25	6	27.276	GPM	Domestic	Water Supply	16.46		GREY	CLAY	BOULDERS	HARD
	645114.7	4902373	234.85	25.30	Rotary (Convent.)	22.25	6	27.276	GPM	Domestic	Water Supply	18 .29		GREY	GRAVEL	SILT	CEMENTED
	645114.7	4902373	234.85	25.30	Rotary (Convent.)	22.25	6	27.276	GPM	Domestic	Water Supply	21.95		GREY	CLAY	STONES	HARD
	645114.7	4902373	234.85	25.30	Rotary (Convent.)	22.25	6	27.276	GPM	Domestic	Water Supply	22.86		GREY	SAND	SILT	POROUS
	645114.7	4902373	234.85	25.30	Rotary (Convent.)	22.25	6	27.276	GPM	Domestic	Water Supply	24.69		GREY	CLAY	STONES	HARD
	645114.7	4902373	234.85	25.30	Rotary (Convent.)	22.25	6	27.276	GPM	Domestic	Water Supply	25.30		GREY	LIMESTONE	HARD	

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
6915189	644514.7	4901973	234.91	17.98	Rotary (Convent.)	17.98	9	40.914	GPM	Domestic	Water Supply	3.05	B	BROWN	GRAVEL	LOOSE	
	644514.7	4901973	234.91	17.98	Rotary (Convent.)	17.98	9	40.914	GPM	Domestic	Water Supply	9.14		GREY	CLAY	STONES	HARD
	644514.7	4901973	234.91	17.98	Rotary (Convent.)	17.98	9	40.914	GPM	Domestic	Water Supply	17.07		GREY	SILT	CLAY	HARD
	644514.7	4901973	234.91	17.98	Rotary (Convent.)	17.98	9	40.914	GPM	Domestic	Water Supply	17.98		GREY	LIMESTONE	SHALY	
6915526	644964.7	4902173	234.00	13.72	Cable Tool	10.67	10	45.46	GPM	Domestic	Water Supply	0.61	0	BLACK	TOPSOIL		
	644964.7	4902173	234.00	13.72	Cable Tool	10.67	10	45.46	GPM	Domestic	Water Supply	2.74		BROWN	CLAY		
	644964.7	4902173	234.00	13.72	Cable Tool	10.67	10	45.46	GPM	Domestic	Water Supply	10.67		GREY	CLAY	STONES	PACKED
	644964.7	4902173	234.00	13.72	Cable Tool	10.67	10	45.46	GPM	Domestic	Water Supply	13.72		GREY	GRAVEL	SAND	
6915642	645114.7	4902123	237.81	13.11	Cable Tool	11.58	6	27.276	GPM	Domestic	Water Supply	7.01	0	BROWN	CLAY		
	645114.7	4902123	237.81	13.11	Cable Tool	11.58	6	27.276	GPM	Domestic	Water Supply	11.58		YELLOW	SAND	GRAVEL	LAYERED
	645114.7	4902123	237.81	13.11	Cable Tool	11.58	6	27.276	GPM	Domestic	Water Supply	13.11		BROWN	SAND	GRAVEL	LAYERED
6915643	645114.7	4902123	237.81	13.41	Cable Tool	11.28	8	36.368	GPM	Domestic	Water Supply	4.88	0	BROWN	CLAY	STONES	
	645114.7	4902123	237.81	13.41	Cable Tool	11.28	8	36.368	GPM	Domestic	Water Supply	11.28		YELLOW	CLAY	SAND	
	645114.7	4902123	237.81	13.41	Cable Tool	11.28	8	36.368	GPM	Domestic	Water Supply	13.41		BROWN	SAND	GRAVEL	LAYERED
6915924	644914.7	4902023	239.39	7.01	Boring	3.66	2	9.092	GPM	Domestic	Water Supply	0.30	6915924		TOPSOIL		
	644914.7	4902023	239.39	7.01	Boring	3.66	2	9.092	GPM	Domestic	Water Supply	3.66			CLAY		
	644914.7	4902023	239.39	7.01	Boring	3.66	2	9.092	GPM	Domestic	Water Supply	7.01			HARDPAN	STONES	
6916447	644814.7	4902023	234.73	32.61	Rotary (Convent.)	27.43	3	13.638	GPM	Domestic	Water Supply	3.66	B	BROWN	CLAY	DENSE	
	644814.7	4902023	234.73	32.61	Rotary (Convent.)	27.43	3	13.638	GPM	Domestic	Water Supply	13.72		GREY	CLAY	STONES	HARD
	644814.7	4902023	234.73	32.61	Rotary (Convent.)	27.43	3	13.638	GPM	Domestic	Water Supply	14.33		GREY	GRAVEL	SILT	CEMENTED
	644814.7	4902023	234.73	32.61	Rotary (Convent.)	27.43	3	13.638	GPM	Domestic	Water Supply	22.86		GREY	CLAY	STONES	HARD
	644814.7	4902023	234.73	32.61	Rotary (Convent.)	27.43	3	13.638	GPM	Domestic	Water Supply	23.47		GREY	GRAVEL	SILT	CEMENTED
	644814.7	4902023	234.73	32.61	Rotary (Convent.)	27.43	3	13.638	GPM	Domestic	Water Supply	24.69		GREY	CLAY	HARD	
	644814.7	4902023	234.73	32.61	Rotary (Convent.)	27.43	3	13.638	GPM	Domestic	Water Supply	24.99		GREY	GRAVEL	CEMENTED	
	644814.7	4902023	234.73	32.61	Rotary (Convent.)	27.43	3	13.638	GPM	Domestic	Water Supply	32.61		GREY	LIMESTONE	HARD	
	644930.7	4902060	238.48	13.72	Cable Tool	12.80	15	68.19	GPM	Domestic	Water Supply	7.62			PREVIOUSLY DUG		

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
6917318	644930.7	4902060	238.48	13.72	Cable Tool	12.80	15	68.19	GPM	Domestic	Water Supply	12.80	0	BROWN	CLAY	STONES	HARD
	644930.7	4902060	238.48	13.72	Cable Tool	12.80	15	68.19	GPM	Domestic	Water Supply	13.72		GREY	COARSE SAND	GRAVEL	
6917602	645322	4902220	240.47	10.06	Rotary (Convent.)	9.14	12	54.552	GPM	Domestic	Water Supply	0.30	0	BROWN	TOPSOIL		
	645322	4902220	240.47	10.06	Rotary (Convent.)	9.14	12	54.552	GPM	Domestic	Water Supply	2.44		BROWN	CLAY		
	645322	4902220	240.47	10.06	Rotary (Convent.)	9.14	12	54.552	GPM	Domestic	Water Supply	4.57		BROWN	GRAVEL	HARD	
	645322	4902220	240.47	10.06	Rotary (Convent.)	9.14	12	54.552	GPM	Domestic	Water Supply	5.49		BROWN	SAND	HARD	
	645322	4902220	240.47	10.06	Rotary (Convent.)	9.14	12	54.552	GPM	Domestic	Water Supply	8.53		BROWN	GRAVEL	HARD	
	645322	4902220	240.47	10.06	Rotary (Convent.)	9.14	12	54.552	GPM	Domestic	Water Supply	10.06		BROWN	SAND	HARD	
	645322	4902220	240.47	10.06	Rotary (Convent.)	9.14	12	54.552	GPM	Domestic	Water Supply	10.06		BROWN	SAND	HARD	
6918213	644903	4902293	234.36	31.70	Rotary (Convent.)	31.70	20	90.92	GPM	Domestic	Water Supply	3.66	B	BROWN	SAND	DRY	
	644903	4902293	234.36	31.70	Rotary (Convent.)	31.70	20	90.92	GPM	Domestic	Water Supply	8.53		BROWN	COARSE GRAVEL	SAND	
	644903	4902293	234.36	31.70	Rotary (Convent.)	31.70	20	90.92	GPM	Domestic	Water Supply	28.65		YELLOW	CLAY	STONES	HARD
	644903	4902293	234.36	31.70	Rotary (Convent.)	31.70	20	90.92	GPM	Domestic	Water Supply	31.70		GREY	LIMESTONE		
6918221	645004.7	4902035	240.74	12.19	Cable Tool	10.97	8	36.368	GPM	Domestic	Water Supply	0.61	0	BROWN	FILL	STONES	
	645004.7	4902035	240.74	12.19	Cable Tool	10.97	8	36.368	GPM	Domestic	Water Supply	5.79		BROWN	SAND	CLAY	LOOSE
	645004.7	4902035	240.74	12.19	Cable Tool	10.97	8	36.368	GPM	Domestic	Water Supply	10.97		BLUE	CLAY	STONES	
	645004.7	4902035	240.74	12.19	Cable Tool	10.97	8	36.368	GPM	Domestic	Water Supply	12.19		BROWN	SAND	CLAY	LAYERED
6918583	644960	4902131	234.99	26.52	Cable Tool	24.38	7	31.822	GPM	Domestic	Water Supply	7.62	B	BROWN	CLAY	SAND	STONES
	644960	4902131	234.99	26.52	Cable Tool	24.38	7	31.822	GPM	Domestic	Water Supply	24.38		GREY	CLAY	STONEY	
	644960	4902131	234.99	26.52	Cable Tool	24.38	7	31.822	GPM	Domestic	Water Supply	26.52			LIMESTONE		
6919127	645294.7	4902244	237.51	22.86	Cable Tool	21.95	30	136.38	GPM	Domestic	Water Supply	0.61	0		TOPSOIL		
	645294.7	4902244	237.51	22.86	Cable Tool	21.95	30	136.38	GPM	Domestic	Water Supply	3.66			SAND	GRAVEL	
	645294.7	4902244	237.51	22.86	Cable Tool	21.95	30	136.38	GPM	Domestic	Water Supply	10.06		BROWN	CLAY	STONEY	SANDY
	645294.7	4902244	237.51	22.86	Cable Tool	21.95	30	136.38	GPM	Domestic	Water Supply	21.95		GREY	CLAY	SANDY	
	645294.7	4902244	237.51	22.86	Cable Tool	21.95	30	136.38	GPM	Domestic	Water Supply	22.86		GREY	COARSE SAND		
	645258.7	4902184	238.05	10.97	Rotary (Convent.)	8.53	15	68.19	GPM	Domestic	Water Supply	0.61		BROWN	SAND	FILL	LOOSE
	645258.7	4902184	238.05	10.97	Rotary (Convent.)	8.53	15	68.19	GPM	Domestic	Water Supply	2.74		BLACK	TOPSOIL	LOOSE	

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
6919373	645258.7	4902184	238.05	10.97	Rotary (Convent.)	8.53	15	68.19	GPM	Domestic	Water Supply	4.88	0	RED	SAND	CLAY	SOFT
	645258.7	4902184	238.05	10.97	Rotary (Convent.)	8.53	15	68.19	GPM	Domestic	Water Supply	8.53		GREY	CLAY	SILT	HARD
	645258.7	4902184	238.05	10.97	Rotary (Convent.)	8.53	15	68.19	GPM	Domestic	Water Supply	10.97		RED	SAND	GRAVEL	LOOSE
6919587	645014	4902099	236.84	32.00	Rotary (Convent.)	31.39	10	45.46	GPM	Domestic	Water Supply	0.30	B	BROWN	TOPSOIL		
	645014	4902099	236.84	32.00	Rotary (Convent.)	31.39	10	45.46	GPM	Domestic	Water Supply	3.66		BROWN	SAND		
	645014	4902099	236.84	32.00	Rotary (Convent.)	31.39	10	45.46	GPM	Domestic	Water Supply	23.47		GREY	CLAY	STONES	HARDPAN
	645014	4902099	236.84	32.00	Rotary (Convent.)	31.39	10	45.46	GPM	Domestic	Water Supply	32.00		GREY	LIMESTONE	CLAY	
6919589	644439.7	4902013	233.94	18.90	Rotary (Convent.)	14.02	20	90.92	GPM	Domestic	Water Supply	0.91	B	BROWN	SAND		
	644439.7	4902013	233.94	18.90	Rotary (Convent.)	14.02	20	90.92	GPM	Domestic	Water Supply	3.66		BROWN	SAND	STONES	HARD
	644439.7	4902013	233.94	18.90	Rotary (Convent.)	14.02	20	90.92	GPM	Domestic	Water Supply	14.02		GREY	CLAY	STONES	HARD
	644439.7	4902013	233.94	18.90	Rotary (Convent.)	14.02	20	90.92	GPM	Domestic	Water Supply	18.90		GREY	LIMESTONE		
6919784	645133.7	4902146	237.22	13.72	Cable Tool	13.41	15	68.19	GPM	Domestic	Water Supply	2.13	0	BROWN	CLAY	TOPSOIL	
	645133.7	4902146	237.22	13.72	Cable Tool	13.41	15	68.19	GPM	Domestic	Water Supply	8.84		BROWN	CLAY	SAND	
	645133.7	4902146	237.22	13.72	Cable Tool	13.41	15	68.19	GPM	Domestic	Water Supply	13.41		GREY	CLAY	STONES	
	645133.7	4902146	237.22	13.72	Cable Tool	13.41	15	68.19	GPM	Domestic	Water Supply	13.72		GREY	SAND	GRAVEL	CLEAN
6919855	644419.7	4902136	233.41	10.97	Rotary (Convent.)	7.62	20	90.92	GPM	Domestic	Water Supply	0.30	0	BROWN	TOPSOIL	SAND	
	644419.7	4902136	233.41	10.97	Rotary (Convent.)	7.62	20	90.92	GPM	Domestic	Water Supply	10.97		BROWN	SAND	STONES	SANDY
6920544	644997.7	4902052	239.54	13.72	Cable Tool	12.80	6	27.276	GPM	Domestic	Water Supply	0.30	0	BROWN	TOPSOIL	SOFT	
	644997.7	4902052	239.54	13.72	Cable Tool	12.80	6	27.276	GPM	Domestic	Water Supply	2.74		BROWN	SAND	STONES	
	644997.7	4902052	239.54	13.72	Cable Tool	12.80	6	27.276	GPM	Domestic	Water Supply	10.06		GREY	CLAY	GRAVEL	
	644997.7	4902052	239.54	13.72	Cable Tool	12.80	6	27.276	GPM	Domestic	Water Supply	12.50		GREY	GRAVEL	STONES	BOULDERS
	644997.7	4902052	239.54	13.72	Cable Tool	12.80	6	27.276	GPM	Domestic	Water Supply	13.72		BLACK	COARSE SAND		
6921200	645305.7	4902238	238.54	22.56	Rotary (Air)	22.56	60	272.76	GPM	Domestic	Water Supply	11.28	0	BROWN	CLAY	SOFT	
	645305.7	4902238	238.54	22.56	Rotary (Air)	22.56	60	272.76	GPM	Domestic	Water Supply	17.37		GREY	CLAY	STONES	HARD
	645305.7	4902238	238.54	22.56	Rotary (Air)	22.56	60	272.76	GPM	Domestic	Water Supply	22.56		GREY	COARSE GRAVEL	CLEAN	
	645182.7	4902232	233.23	10.97	Rotary (Convent.)	6.10	25	113.65	GPM	Domestic	Water Supply	1.22		BLACK	PEAT	TOPSOIL	LOOSE

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
6921423	645182.7	4902232	233.23	10.97	Rotary (Convent.)	6.10	25	113.65	GPM	Domestic	Water Supply	2.13	0	BROWN	GRAVEL	SAND	LOOSE
	645182.7	4902232	233.23	10.97	Rotary (Convent.)	6.10	25	113.65	GPM	Domestic	Water Supply	6.10		BLUE	CLAY	DENSE	
	645182.7	4902232	233.23	10.97	Rotary (Convent.)	6.10	25	113.65	GPM	Domestic	Water Supply	8.53		GREY	SAND	LAYERED	
	645182.7	4902232	233.23	10.97	Rotary (Convent.)	6.10	25	113.65	GPM	Domestic	Water Supply	10.97		GREY	GRAVEL	LOOSE	
6921506	644410.7	4901914	234.01	17.37	Cable Tool	17.37	6	27.276	GPM	Domestic	Water Supply	0.30	B	BROWN	TOPSOIL		
	644410.7	4901914	234.01	17.37	Cable Tool	17.37	6	27.276	GPM	Domestic	Water Supply	5.49		BROWN	SAND		
	644410.7	4901914	234.01	17.37	Cable Tool	17.37	6	27.276	GPM	Domestic	Water Supply	12.19		GREY	CLAY		
	644410.7	4901914	234.01	17.37	Cable Tool	17.37	6	27.276	GPM	Domestic	Water Supply	17.37		BROWN	SHALE	ROCK	SAND
6921836	645303.7	4902116	243.40	25.91	Cable Tool	24.99	20	90.92	GPM	Domestic	Water Supply	0.30	0	BROWN	TOPSOIL		
	645303.7	4902116	243.40	25.91	Cable Tool	24.99	20	90.92	GPM	Domestic	Water Supply	7.01		BROWN	SAND	LOOSE	
	645303.7	4902116	243.40	25.91	Cable Tool	24.99	20	90.92	GPM	Domestic	Water Supply	16.15		BLUE	CLAY	STONES	STICKY
	645303.7	4902116	243.40	25.91	Cable Tool	24.99	20	90.92	GPM	Domestic	Water Supply	18 .29		BROWN	CLAY	SAND	LAYERED
	645303.7	4902116	243.40	25.91	Cable Tool	24.99	20	90.92	GPM	Domestic	Water Supply	19.81		GREY	CLAY		
	645303.7	4902116	243.40	25.91	Cable Tool	24.99	20	90.92	GPM	Domestic	Water Supply	24.69		GREY	GRAVEL	LOOSE	
	645303.7	4902116	243.40	25.91	Cable Tool	24.99	20	90.92	GPM	Domestic	Water Supply	24.99		GREY	CLAY		
	645303.7	4902116	243.40	25.91	Cable Tool	24.99	20	90.92	GPM	Domestic	Water Supply	25.91		BLACK	COARSE SAND		
6922020	645004.7	4902035	240.74	30.18	Cable Tool	28.04	10	45.46	GPM	Domestic	Water Supply	12.19	B		PREV. DRILLED		
	645004.7	4902035	240.74	30.18	Cable Tool	28.04	10	45.46	GPM	Domestic	Water Supply	13 .41		BROWN	CLAY	SAND	LAYERED
	645004.7	4902035	240.74	30.18	Cable Tool	28.04	10	45.46	GPM	Domestic	Water Supply	25.91		GREY	CLAY	STONES	HARD
	645004.7	4902035	240.74	30.18	Cable Tool	28.04	10	45.46	GPM	Domestic	Water Supply	26.21		GREY	CLAY	SOFT	
	645004.7	4902035	240.74	30.18	Cable Tool	28.04	10	45.46	GPM	Domestic	Water Supply	28.04		GREY	LIMESTONE	HARD	
	645004.7	4902035	240.74	30.18	Cable Tool	28.04	10	45.46	GPM	Domestic	Water Supply	30.18		WHITE	LIMESTONE		
6922039	645281.7	4902183	239.79	13.72	Cable Tool	12.19	7	31.822	GPM	Domestic	Water Supply	1.22	0	BLACK	MUCK	SOFT	
	645281.7	4902183	239.79	13.72	Cable Tool	12.19	7	31.822	GPM	Domestic	Water Supply	2.44		BROWN	SAND		
	645281.7	4902183	239.79	13.72	Cable Tool	12.19	7	31.822	GPM	Domestic	Water Supply	12.19		GREY	CLAY	SOFT	
	645281.7	4902183	239.79	13.72	Cable Tool	12.19	7	31.822	GPM	Domestic	Water Supply	13 .72			COARSE SAND	LOOSE	

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
6922256	644971	4902097	236.68	17.68	Rotary (Air)	16.15	10	45.46	GPM	Domestic	Water Supply	5.18	0	BROWN	CLAY	STONES	HARD
	644971	4902097	236.68	17.68	Rotary (Air)	16.15	10	45.46	GPM	Domestic	Water Supply	13 .72		GREY	CLAY	BOULDERS	HARD
	644971	4902097	236.68	17.68	Rotary (Air)	16.15	10	45.46	GPM	Domestic	Water Supply	14.33		GREY	CLAY	DENSE	
	644971	4902097	236.68	17.68	Rotary (Air)	16.15	10	45.46	GPM	Domestic	Water Supply	17.68		BLACK	FINE SAND	CLEAN	
6922931	644382	4901885	234.04	21.34	Rotary (Air)	21.34	10	45.46	GPM	Domestic	Water Supply	4.57	B	BROWN	SAND	PACKED	
	644382	4901885	234.04	21.34	Rotary (Air)	21.34	10	45.46	GPM	Domestic	Water Supply	15.85		GREY	CLAY	GRAVEL	SOFT
	644382	4901885	234.04	21.34	Rotary (Air)	21.34	10	45.46	GPM	Domestic	Water Supply	21.34		GREY	LIMESTONE	HARD	
6923916	644395	4902151	233.25	19.81	Rotary (Convent.)	12.50	10	45.46	GPM	Domestic	Water Supply	3.96	B	BROWN	SAND	STONES	LOOSE
	644395	4902151	233.25	19.81	Rotary (Convent.)	12.50	10	45.46	GPM	Domestic	Water Supply	11.58		BLUE	CLAY	SILT	LAYERED
	644395	4902151	233.25	19.81	Rotary (Convent.)	12.50	10	45.46	GPM	Domestic	Water Supply	12.19		GREY	CLAY	STONES	CEMENTED
	644395	4902151	233.25	19.81	Rotary (Convent.)	12.50	10	45.46	GPM	Domestic	Water Supply	13 .41		GREY	LIMESTONE	SHALE	FILL
	644395	4902151	233.25	19.81	Rotary (Convent.)	12.50	10	45.46	GPM	Domestic	Water Supply	19.81		GREY	LIMESTONE	FRACTURED	
6924775	644876	4902397	233.03	25.91	Rotary (Convent.)	25.91	10	45.46	GPM	Domestic	Water Supply	5.18	0	BROWN	GRAVEL	CLAY	LOOSE
	644876	4902397	233.03	25.91	Rotary (Convent.)	25.91	10	45.46	GPM	Domestic	Water Supply	7.62		BROWN	STONES	CLAY	HARD
	644876	4902397	233.03	25.91	Rotary (Convent.)	25.91	10	45.46	GPM	Domestic	Water Supply	9.75		BLUE	CLAY	SOFT	
	644876	4902397	233.03	25.91	Rotary (Convent.)	25.91	10	45.46	GPM	Domestic	Water Supply	22.86		BROWN	SILT	GRAVEL	LOOSE
	644876	4902397	233.03	25.91	Rotary (Convent.)	25.91	10	45.46	GPM	Domestic	Water Supply	25.91			LIMESTONE		
	644876	4902397	233.03	25.91	Rotary (Convent.)	25.91	10	45.46	GPM	Domestic	Water Supply	25.91		GREY	CLAY	SAND	STONES
6924929	644977	4901980	244.13	23.47	Rotary (Air)	23.47	8	36.368	GPM	Domestic	Water Supply	3.66	B	BROWN	SAND	GRAVEL	LOOSE
	644977	4901980	244.13	23.47	Rotary (Air)	23.47	8	36.368	GPM	Domestic	Water Supply	17.68		GREY	CLAY	HARD	STONES
	644977	4901980	244.13	23.47	Rotary (Air)	23.47	8	36.368	GPM	Domestic	Water Supply	23.47		GREY	LIMESTONE	HARD	
	645244	4902199	236.30	28.90	Rotary (Convent.)		36	36	LPM	Domestic	Water Supply	0.60		BROWN	TOPSOIL	SOFT	
	645244	4902199	236.30	28.90	Rotary (Convent.)		36	36	LPM	Domestic	Water Supply	2.40		RED	SAND		LOOSE
	645244	4902199	236.30	28.90	Rotary (Convent.)		36	36	LPM	Domestic	Water Supply	5.70		BROWN	SAND	STONES	LOOSE
	645244	4902199	236.30	28.90	Rotary (Convent.)		36	36	LPM	Domestic	Water Supply	7.30		BROWN	CLAY	SAND	SOFT
	645244	4902199	236.30	28.90	Rotary (Convent.)		36	36	LPM	Domestic	Water Supply	15.40		GREY	CLAY	DENSE	DENSE

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
6928377	645244	4902199	236.30	28.90	Rotary (Convent.)		36	36	LPM	Domestic	Water Supply	17.30	B	BROWN	SAND	GRAVEL	LAYERED
	645244	4902199	236.30	28.90	Rotary (Convent.)		36	36	LPM	Domestic	Water Supply	24.60		GREY	GRAVEL	CEMENTED	
	645244	4902199	236.30	28.90	Rotary (Convent.)		36	36	LPM	Domestic	Water Supply	28.90		GREY	LIMESTONE	ROCK	HARD
6929631	645005	4902103	236.52	11.28	Rotary (Air)	11.00	38	38	LPM	Domestic	Water Supply	5.19	0	BROWN	SAND		
	645005	4902103	236.52	11.28	Rotary (Air)	11.00	38	38	LPM	Domestic	Water Supply	11.28		BROWN	SAND	GRAVEL	
6929653	645317.5	4902132	244.39	19.20	Cable Tool	17.98	90	409.14	GPM	Domestic	Water Supply	0.30	0	BLACK	TOPSOIL		
	645317.5	4902132	244.39	19.20	Cable Tool	17.98	90	409.14	GPM	Domestic	Water Supply	8.23		BROWN	CLAY		
	645317.5	4902132	244.39	19.20	Cable Tool	17.98	90	409.14	GPM	Domestic	Water Supply	8.53		BROWN	GRAVEL	CLAY	
	645317.5	4902132	244.39	19.20	Cable Tool	17.98	90	409.14	GPM	Domestic	Water Supply	15 .85		BLUE	CLAY	STONES	
	645317.5	4902132	244.39	19.20	Cable Tool	17.98	90	409.14	GPM	Domestic	Water Supply	17.98		GREY	GRAVEL	CLAY	
	645317.5	4902132	244.39	19.20	Cable Tool	17.98	90	409.14	GPM	Domestic	Water Supply	19.20		GREY	SAND	GRAVEL	
6929882	644976	4902127	235.04	14.02	Cable Tool	14.00	22.7	22.7	LPM	Domestic	Water Supply	0.30	0	BLACK	TOPSOIL		
	644976	4902127	235.04	14.02	Cable Tool	14.00	22.7	22.7	LPM	Domestic	Water Supply	12.81			HARDPAN		
	644976	4902127	235.04	14.02	Cable Tool	14.00	22.7	22.7	LPM	Domestic	Water Supply	14.02			SAND	GRAVEL	
6931097	644493	4901921	234.64	21.60	Rotary (Convent.)		22	22	LPM	Domestic	Water Supply	1.80	B	RED	SAND	LOOSE	
	644493	4901921	234.64	21.60	Rotary (Convent.)		22	22	LPM	Domestic	Water Supply	7.00		GREY	CLAY	SOFT	
	644493	4901921	234.64	21.60	Rotary (Convent.)		22	22	LPM	Domestic	Water Supply	11.80		GREY	STONES	CLAY	HARD
	644493	4901921	234.64	21.60	Rotary (Convent.)		22	22	LPM	Domestic	Water Supply	15 .80		GREY	SAND	STONES	CLAY
	644493	4901921	234.64	21.60	Rotary (Convent.)		22	22	LPM	Domestic	Water Supply	17.00		GREY	LIMESTONE	CLAY	FRACTURED
	644493	4901921	234.64	21.60	Rotary (Convent.)		22	22	LPM	Domestic	Water Supply	21.60		GREY	LIMESTONE	HARD	
	644972	4901654	260.36	32.61	Rotary (Air)	31.39	3	13.638	GPM	Domestic	Water Supply	0.30		BLACK	TOPSOIL		
	644972	4901654	260.36	32.61	Rotary (Air)	31.39	3	13.638	GPM	Domestic	Water Supply	4.88		BROWN	SAND	SILTY	GRAVEL
	644972	4901654	260.36	32.61	Rotary (Air)	31.39	3	13.638	GPM	Domestic	Water Supply	13.41		GREY	CLAY	SANDY	GRAVEL
	644972	4901654	260.36	32.61	Rotary (Air)	31.39	3	13.638	GPM	Domestic	Water Supply	17.37		GREY	CLAY	SANDY	GRAVEL
	644972	4901654	260.36	32.61	Rotary (Air)	31.39	3	13.638	GPM	Domestic	Water Supply	31.39		GREY	GRAVEL	CLAY	SANDY
	644972	4901654	260.36	32.61	Rotary (Air)	31.39	3	13.638	GPM	Domestic	Water Supply	32.61		GREY	SAND	GRAVEL	

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
7041217	644972	4901654	260.36	32.61	Rotary (Air)	31.39	3	13.638	GPM	Domestic	Water Supply		0	GREY	GRAVEL	SANDY	CLAY
7041233	644941	4901609	260.75	39.01	Rotary (Air)	37.80	4	18.184	GPM	Domestic	Water Supply	6.10	0	BROWN	CLAY	SANDY	GRAVEL
	644941	4901609	260.75	39.01	Rotary (Air)	37.80	4	18.184	GPM	Domestic	Water Supply	27.13		GREY	CLAY	SANDY	GRAVEL
	644941	4901609	260.75	39.01	Rotary (Air)	37.80	4	18.184	GPM	Domestic	Water Supply	37.80		GREY	CLAY	SANDY	GRAVEL
	644941	4901609	260.75	39.01	Rotary (Air)	37.80	4	18.184	GPM	Domestic	Water Supply	39.01		GREY	SAND	SILT	GRAVEL
	644941	4901609	260.75	39.01	Rotary (Air)	37.80	4	18.184	GPM	Domestic	Water Supply			GREY	CLAY	SANDY	GRAVEL
7041243	644972	4901654	260.36	53.64	Rotary (Air)					Domestic	Abandoned-Supply	0.30	7041243	BLACK	TOPSOIL		
	644972		260.36	53.64	Rotary (Air)					Domestic	Abandoned-Supply	5.18		BROWN	SAND	SILTY	GRAVEL
	644972		260.36	53.64	Rotary (Air)					Domestic	Abandoned-Supply	6.10		BROWN	SAND	SILTY	GRAVEL
	644972		260.36	53.64	Rotary (Air)					Domestic	Abandoned-Supply	20.73		GREY	CLAY	SANDY	GRAVEL
	644972		260.36	53.64	Rotary (Air)					Domestic	Abandoned-Supply	24.99		GREY	GRAVEL	CLAY	SANDY
	644972		260.36	53.64	Rotary (Air)					Domestic	Abandoned-Supply	39.01		GREY	CLAY	SANDY	GRAVEL
	644972		260.36	53.64	Rotary (Air)					Domestic	Abandoned-Supply	42.98		GREY	CLAY	GRAVEL	
	644972		260.36	53.64	Rotary (Air)					Domestic	Abandoned-Supply	53.64		GREY	LIMESTONE		
7049148	644789	4901490	258.63	42.97	Rotary (Convent.)	40.00	18.92	18.92	LPM	Domestic	Water Supply	1.82	B	BROWN	SAND	STONES	
	644789	4901490	258.63	42.97	Rotary (Convent.)	40.00	18.92	18.92	LPM	Domestic	Water Supply	3.35		GREY	CLAY	TILL	STONES
	644789	4901490	258.63	42.97	Rotary (Convent.)	40.00	18.92	18.92	LPM	Domestic	Water Supply	10.05		GREY	CLAY	TILL	
	644789	4901490	258.63	42.97	Rotary (Convent.)	40.00	18.92	18.92	LPM	Domestic	Water Supply	21.03		GREY	CLAY	TILL	BOULDERS
	644789	4901490	258.63	42.97	Rotary (Convent.)	40.00	18.92	18.92	LPM	Domestic	Water Supply	26.21		GREY	CLAY	TILL	STONES
	644789	4901490	258.63	42.97	Rotary (Convent.)	40.00	18.92	18.92	LPM	Domestic	Water Supply	39.62		GREY	CLAY	TILL	SAND
	644789	4901490	258.63	42.97	Rotary (Convent.)	40.00	18.92	18.92	LPM	Domestic	Water Supply	42.97		GREY	LIMESTONE	HARD	
	644817	4901404	261.24	47.54	Rotary (Convent.)	44.00	11.35	11.35	LPM	Domestic	Water Supply	5.48		BROWN	CLAY	TILL	STONES
	644817	4901404	261.24	47.54	Rotary (Convent.)	44.00	11.35	11.35	LPM	Domestic	Water Supply	17.06		GREY	CLAY	TILL	STONES
	644817	4901404	261.24	47.54	Rotary (Convent.)	44.00	11.35	11.35	LPM	Domestic	Water Supply	29.56		GREY	CLAY		
	644817	4901404	261.24	47.54	Rotary (Convent.)	44.00	11.35	11.35	LPM	Domestic	Water Supply	33.22		GREY	CLAY	STONES	DENSE
	644817	4901404	261.24	47.54	Rotary (Convent.)	44.00	11.35	11.35	LPM	Domestic	Water Supply	43.89		GREY	CLAY	TILL	SAND

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
7049149	644817	4901404	261.24	47.54	Rotary (Convent.)	44.00	11.35	11.35	LPM	Domestic	Water Supply	47.54	B	GREY	LIMESTONE	HARD	
7049373	644750	4901548	254.11	39.01	Rotary (Air)	37.80	6	27.276	GPM	Domestic	Water Supply	2.74	0	BROWN	SILT	GRAVEL	
	644750	4901548	254.11	39.01	Rotary (Air)	37.80	6	27.276	GPM	Domestic	Water Supply	5.79		BROWN	SAND	SILT	
	644750	4901548	254.11	39.01	Rotary (Air)	37.80	6	27.276	GPM	Domestic	Water Supply	15.24		BROWN	GRAVEL	SANDY	CLAY
	644750	4901548	254.11	39.01	Rotary (Air)	37.80	6	27.276	GPM	Domestic	Water Supply	18.59		GREY	GRAVEL	SANDY	CLAY
	644750	4901548	254.11	39.01	Rotary (Air)	37.80	6	27.276	GPM	Domestic	Water Supply	21.03		GREY	SILT	CLAY	GRAVEL
	644750	4901548	254.11	39.01	Rotary (Air)	37.80	6	27.276	GPM	Domestic	Water Supply	22.25		GREY	SILT	SAND	CLAY
	644750	4901548	254.11	39.01	Rotary (Air)	37.80	6	27.276	GPM	Domestic	Water Supply	23.16		GREY	CLAY	GRAVEL	
	644750	4901548	254.11	39.01	Rotary (Air)	37.80	6	27.276	GPM	Domestic	Water Supply	39.01		GREY	GRAVEL	CLAYEY	
7049388	644837	4901572	258.65	47.85	Rotary (Convent.)	21.95	1.5	6.819	GPM	Domestic	Water Supply	6.10	B	BROWN	SAND	CLAY	GRAVEL
	644837	4901572	258.65	47.85	Rotary (Convent.)	21.95	1.5	6.819	GPM	Domestic	Water Supply	20.42		GREY	SAND	CLAY	GRAVEL
	644837	4901572	258.65	47.85	Rotary (Convent.)	21.95	1.5	6.819	GPM	Domestic	Water Supply	21.95		GREY	SAND	CLAY	GRAVEL
	644837	4901572	258.65	47.85	Rotary (Convent.)	21.95	1.5	6.819	GPM	Domestic	Water Supply	24.99		GREY	SAND	CLAY	GRAVEL
	644837	4901572	258.65	47.85	Rotary (Convent.)	21.95	1.5	6.819	GPM	Domestic	Water Supply	26.21		GREY	SAND	CLAY	GRAVEL
	644837	4901572	258.65	47.85	Rotary (Convent.)	21.95	1.5	6.819	GPM	Domestic	Water Supply	29.87		GREY	GRAVEL		
	644837	4901572	258.65	47.85	Rotary (Convent.)	21.95	1.5	6.819	GPM	Domestic	Water Supply	34.14		GREY	SAND	CLAY	GRAVEL
	644837	4901572	258.65	47.85	Rotary (Convent.)	21.95	1.5	6.819	GPM	Domestic	Water Supply	41.30		GREY	SAND	CLAY	GRAVEL
7049432	644794	4901555	256.52	60.20	Rotary (Air)	40.54	2	9.092	GPM	Domestic	Water Supply	5.49	B	BROWN	SILT	GRAVEL	
	644794	4901555	256.52	60.20	Rotary (Air)	40.54	2	9.092	GPM	Domestic	Water Supply	25.60		GREY	CLAY	GRAVEL	
	644794	4901555	256.52	60.20	Rotary (Air)	40.54	2	9.092	GPM	Domestic	Water Supply	35.97		GREY	SILT	GRAVEL	
	644794	4901555	256.52	60.20	Rotary (Air)	40.54	2	9.092	GPM	Domestic	Water Supply	39.01		GREY	CLAY	GRAVEL	
	644794	4901555	256.52	60.20	Rotary (Air)	40.54	2	9.092	GPM	Domestic	Water Supply	40.54		GREY	GRAVEL	SAND	
	644794	4901555	256.52	60.20	Rotary (Air)	40.54	2	9.092	GPM	Domestic	Water Supply	60.20		GREY	LIMESTONE		
	644943	4901926	249.55	42.07	Rotary (Air)	33.00	24	24	LPM	Domestic	Water Supply	9.15		BROWN	CLAY	GRAVEL	HARD
	644943	4901926	249.55	42.07	Rotary (Air)	33.00	24	24	LPM	Domestic	Water Supply	33.84		GREY	CLAY	STONES	HARD

Table A-1 MECP Wells
Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
7054419	644943	4901926	249.55	42.07	Rotary (Air)	33.00	24	24	LPM	Domestic	Water Supply	42.07	B	GREY	LIMESTONE		HARD
7106763	644836	4901346	261.24	47.86	Rotary (Air)	25.00	40	40	LPM	Domestic	Water Supply	5.19	B	BROWN	CLAY		HARD
	644836	4901346	261.24	47.86	Rotary (Air)	25.00	40	40	LPM	Domestic	Water Supply	24.38		GREY	CLAY	STONES	HARD
	644836	4901346	261.24	47.86	Rotary (Air)	25.00	40	40	LPM	Domestic	Water Supply	25.91		GREY	SAND		LOOSE
	644836	4901346	261.24	47.86	Rotary (Air)	25.00	40	40	LPM	Domestic	Water Supply	39.01		GREY	CLAY		DENSE
	644836	4901346	261.24	47.86	Rotary (Air)	25.00	40	40	LPM	Domestic	Water Supply	42.37		GREY	GRAVEL	CLAY	LAYERED
	644836	4901346	261.24	47.86	Rotary (Air)	25.00	40	40	LPM	Domestic	Water Supply	47.86		GREY	LIMESTONE		HARD
7108812	644800	4901463	260.24	46.02	Rotary (Convent.)	42.37	8	36.368	GPM	Domestic	Water Supply	3.35	B	GREY	SAND		LOOSE
	644800	4901463	260.24	46.02	Rotary (Convent.)	42.37	8	36.368	GPM	Domestic	Water Supply	7.01		GREY	CLAY	TILL	STONES
	644800	4901463	260.24	46.02	Rotary (Convent.)	42.37	8	36.368	GPM	Domestic	Water Supply	14.02		GREY	CLAY	TILL	STONES
	644800	4901463	260.24	46.02	Rotary (Convent.)	42.37	8	36.368	GPM	Domestic	Water Supply	17.07		GREY	CLAY	TILL	SAND
	644800	4901463	260.24	46.02	Rotary (Convent.)	42.37	8	36.368	GPM	Domestic	Water Supply	27.74		GREY	CLAY	TILL	HARD
	644800	4901463	260.24	46.02	Rotary (Convent.)	42.37	8	36.368	GPM	Domestic	Water Supply	41.76		GREY	CLAY	TILL	FINE GRAVEL
	644800	4901463	260.24	46.02	Rotary (Convent.)	42.37	8	36.368	GPM	Domestic	Water Supply	46.02		GREY	LIMESTONE		HARD
7109162	644338	4901827	234.25	18.80	Cable Tool	18.80	40	40	LPM	Domestic	Water Supply	0.30	B	BLACK	TOPSOIL		SOFT
	644338	4901827	234.25	18.80	Cable Tool	18.80	40	40	LPM	Domestic	Water Supply	3.60		BROWN	SAND	CLAY	
	644338	4901827	234.25	18.80	Cable Tool	18.80	40	40	LPM	Domestic	Water Supply	14.60		GREY	CLAY	STONES	MEDIUM-GRAINED
	644338	4901827	234.25	18.80	Cable Tool	18.80	40	40	LPM	Domestic	Water Supply	18.80		GREY	LIMESTONE	CLAY	HARD
7115000	644871	4901578	260.04	48.16	Rotary (Convent.)	48.16	4	18.184	GPM	Domestic	Water Supply	10.67	B	BROWN	CLAY		HARD
	644871	4901578	260.04	48.16	Rotary (Convent.)	48.16	4	18.184	GPM	Domestic	Water Supply	35.66		GREY	CLAY	SAND	HARD
	644871	4901578	260.04	48.16	Rotary (Convent.)	48.16	4	18.184	GPM	Domestic	Water Supply	42.06		GREY	CLAY		DENSE
	644871	4901578	260.04	48.16	Rotary (Convent.)	48.16	4	18.184	GPM	Domestic	Water Supply	48.16		GREY	LIMESTONE		HARD
	644829	4902301	233.44	18.80	Cable Tool	18.00	16	16	LPM	Domestic	Water Supply	0.30		BLACK	TOPSOIL		LOOSE
	644829	4902301	233.44	18.80	Cable Tool	18.00	16	16	LPM	Domestic	Water Supply	3.60		BROWN	SAND	CLAY	MEDIUM SAND
	644829	4902301	233.44	18.80	Cable Tool	18.00	16	16	LPM	Domestic	Water Supply	12.10		GREY	CLAY	STONES	
	644829	4902301	233.44	18.80	Cable Tool	18.00	16	16	LPM	Domestic	Water Supply	13.70		BROWN	SAND		LOOSE

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
7115881	644829	4902301	233.44	18.80	Cable Tool	18.00	16	16	LPM	Domestic	Water Supply	16.40	0	GREY	CLAY		SOFT
	644829	4902301	233.44	18.80	Cable Tool	18.00	16	16	LPM	Domestic	Water Supply	18.80		BROWN	SAND	CLAY	PACKED
7115882	644824	4902312	232.91	31.30	Cable Tool	31.00	8	8	LPM	Domestic	Water Supply	0.30	B	BLACK	TOPSOIL		LOOSE
	644824	4902312	232.91	31.30	Cable Tool	31.00	8	8	LPM	Domestic	Water Supply	1.80		BROWN	SAND	CLAY	MEDIUM SAND
	644824	4902312	232.91	31.30	Cable Tool	31.00	8	8	LPM	Domestic	Water Supply	21.30		GREY	CLAY	STONES	MEDIUM-GRAINED
	644824	4902312	232.91	31.30	Cable Tool	31.00	8	8	LPM	Domestic	Water Supply	31.30		GREY	LIMESTONE	CLAY	HARD
7135152	644750	4901824	244.42	42.67	Rotary (Convent.)		2	9.092	GPM	Domestic	Water Supply	2.74	B	BROWN	SAND	STONES	
	644750	4901824	244.42	42.67	Rotary (Convent.)		2	9.092	GPM	Domestic	Water Supply	10.36		BROWN	CLAY	STONES	
	644750	4901824	244.42	42.67	Rotary (Convent.)		2	9.092	GPM	Domestic	Water Supply	10.67		GREY	CLAY	STONES	
	644750	4901824	244.42	42.67	Rotary (Convent.)		2	9.092	GPM	Domestic	Water Supply	12.50		GREY	GRAVEL	SAND	
	644750	4901824	244.42	42.67	Rotary (Convent.)		2	9.092	GPM	Domestic	Water Supply	24.38		GREY	CLAY	STONES	SILTY
	644750	4901824	244.42	42.67	Rotary (Convent.)		2	9.092	GPM	Domestic	Water Supply	29.57		BROWN	LIMESTONE		
	644750	4901824	244.42	42.67	Rotary (Convent.)		2	9.092	GPM	Domestic	Water Supply	42.67		GREY	LIMESTONE		
7139353	644679	4901706	243.50	21.34	Rotary (Convent.)	20.12	10	45.46	GPM	Domestic	Water Supply	3.05	0	BROWN	SAND	CLAY	STONES
	644679	4901706	243.50	21.34	Rotary (Convent.)	20.12	10	45.46	GPM	Domestic	Water Supply	5.18		GREY	CLAY	STONES	
	644679	4901706	243.50	21.34	Rotary (Convent.)	20.12	10	45.46	GPM	Domestic	Water Supply	6.40		GREY	GRAVEL	SAND	
	644679	4901706	243.50	21.34	Rotary (Convent.)	20.12	10	45.46	GPM	Domestic	Water Supply	20.12		GREY	CLAY	STONES	SILTY
	644679	4901706	243.50	21.34	Rotary (Convent.)	20.12	10	45.46	GPM	Domestic	Water Supply	21.34		GREY	COARSE SAND		
7181940	645171	4902072	239.93	21.90	Cable Tool	21.00	24	24	LPM	Domestic	Water Supply	0.30	0	BLACK	TOPSOIL		MEDIUM-GRAINED
	645171	4902072	239.93	21.90	Cable Tool	21.00	24	24	LPM	Domestic	Water Supply	2.10		BROWN	SAND		MEDIUM-GRAINED
	645171	4902072	239.93	21.90	Cable Tool	21.00	24	24	LPM	Domestic	Water Supply	12.80		BROWN	CLAY	SAND	SOFT
	645171	4902072	239.93	21.90	Cable Tool	21.00	24	24	LPM	Domestic	Water Supply	20.70		GREY	CLAY	STONES	MEDIUM-GRAINED
	645171	4902072	239.93	21.90	Cable Tool	21.00	24	24	LPM	Domestic	Water Supply	21.90		BROWN	SAND	GRAVEL	LOOSE
	644513	4901889	234.69	21.34	Rotary (Convent.)	21.34	10	45.46	GPM	Domestic	Water Supply	1.52		BROWN	SAND	GRAVEL	LOOSE
	644513	4901889	234.69	21.34	Rotary (Convent.)	21.34	10	45.46	GPM	Domestic	Water Supply	3.66		BROWN	SAND	CLAY	
	644513	4901889	234.69	21.34	Rotary (Convent.)	21.34	10	45.46	GPM	Domestic	Water Supply	14.63		GREY	CLAY	STONES	HARD

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
7199420	644513	4901889	234.69	21.34	Rotary (Convent.)	21.34	10	45.46	GPM	Domestic	Water Supply	15.85	B	BROWN	SAND	CLAY	LAYERED
	644513	4901889	234.69	21.34	Rotary (Convent.)	21.34	10	45.46	GPM	Domestic	Water Supply	16.15		GREY	CLAY		HARD
	644513	4901889	234.69	21.34	Rotary (Convent.)	21.34	10	45.46	GPM	Domestic	Water Supply	21.34		GREY	LIMESTONE		HARD
7217107	644925	4902181	235.09	27.43	Rotary (Convent.)	27.43	6	27.276	GPM	Domestic	Water Supply	7.62	B	BROWN	SAND	PACKED	
	644925	4902181	235.09	27.43	Rotary (Convent.)	27.43	6	27.276	GPM	Domestic	Water Supply	21.34		GREY	CLAY	SOFT	
	644925	4902181	235.09	27.43	Rotary (Convent.)	27.43	6	27.276	GPM	Domestic	Water Supply	21.95		GREY	GRAVEL	SILT	LOOSE
	644925	4902181	235.09	27.43	Rotary (Convent.)	27.43	6	27.276	GPM	Domestic	Water Supply	27.43		GREY	LIMESTONE		HARD
7225617	644902	4901340	261.71	39.62	Rotary (Air)	41.15	10	45.46	GPM	Domestic	Water Supply	5.49	0	BROWN	SAND		SOFT
	644902	4901340	261.71	39.62	Rotary (Air)	41.15	10	45.46	GPM	Domestic	Water Supply	6.10		GREY	GRAVEL	SAND	LOOSE
	644902	4901340	261.71	39.62	Rotary (Air)	41.15	10	45.46	GPM	Domestic	Water Supply	12.19		BROWN	SILT	SANDY	SOFT
	644902	4901340	261.71	39.62	Rotary (Air)	41.15	10	45.46	GPM	Domestic	Water Supply	32.61		GREY	CLAY	TILL	DENSE
	644902	4901340	261.71	39.62	Rotary (Air)	41.15	10	45.46	GPM	Domestic	Water Supply	33.22		GREY	SILT	FINE SAND	SILT
	644902	4901340	261.71	39.62	Rotary (Air)	41.15	10	45.46	GPM	Domestic	Water Supply	38.10		GREY	CLAY	TILL	DENSE
	644902	4901340	261.71	39.62	Rotary (Air)	41.15	10	45.46	GPM	Domestic	Water Supply	39.62		GREY	SAND	GRAVEL	SILT
7226011	644932	4901335	261.74	41.10	Rotary (Convent.)	41.00	40	40	LPM	Domestic	Water Supply	5.40	B	BROWN	CLAY	SAND	
	644932	4901335	261.74	41.10	Rotary (Convent.)	41.00	40	40	LPM	Domestic	Water Supply	11.20		GREY	CLAY		SOFT
	644932	4901335	261.74	41.10	Rotary (Convent.)	41.00	40	40	LPM	Domestic	Water Supply	13.70		BROWN	GRAVEL	SAND	LOOSE
	644932	4901335	261.74	41.10	Rotary (Convent.)	41.00	40	40	LPM	Domestic	Water Supply	36.50		GREY	CLAY	BOULDERS	
	644932	4901335	261.74	41.10	Rotary (Convent.)	41.00	40	40	LPM	Domestic	Water Supply	39.60		GREY	CLAY		HARD
	644932	4901335	261.74	41.10	Rotary (Convent.)	41.00	40	40	LPM	Domestic	Water Supply	40.20		GREY	GRAVEL	SAND	PACKED
	644932	4901335	261.74	41.10	Rotary (Convent.)	41.00	40	40	LPM	Domestic	Water Supply	41.10		GREY	LIMESTONE	CLAY	HARD
7227616	644941	4902197	235.18	27.00	Rotary (Convent.)	25.00	16	16	LPM	Domestic	Water Supply	4.60	B	BROWN	SAND	CLAY	
	644941	4902197	235.18	27.00	Rotary (Convent.)	25.00	16	16	LPM	Domestic	Water Supply	8.80		GREY	CLAY		
	644941	4902197	235.18	27.00	Rotary (Convent.)	25.00	16	16	LPM	Domestic	Water Supply	10.60		GREY	SAND	CLAY	LOOSE
	644941	4902197	235.18	27.00	Rotary (Convent.)	25.00	16	16	LPM	Domestic	Water Supply	22.50		GREY	CLAY	STONES	
	644941	4902197	235.18	27.00	Rotary (Convent.)	25.00	16	16	LPM	Domestic	Water Supply	27.00		GREY	LIMESTONE	CLAY	HARD

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
7231878	645040	4901686	258.31	48.46	Rotary (Convent.)	48.46	20	90.92	GPM	Domestic	Water Supply	5.79	B	BROWN	CLAY		TILL
	645040	4901686	258.31	48.46	Rotary (Convent.)	48.46	20	90.92	GPM	Domestic	Water Supply	35.66		GREY	CLAY	STONES	HARD
	645040	4901686	258.31	48.46	Rotary (Convent.)	48.46	20	90.92	GPM	Domestic	Water Supply	39.93		GREY	CLAY	SILT	LAYERED
	645040	4901686	258.31	48.46	Rotary (Convent.)	48.46	20	90.92	GPM	Domestic	Water Supply	48.46		GREY	LIMESTONE		HARD
7242530	645006	4901370	261.22	41.15	Rotary (Air)	41.15	5	22.73	GPM	Domestic	Water Supply	7.62	0	GREY	SAND	CLAY	LAYERED
	645006	4901370	261.22	41.15	Rotary (Air)	41.15	5	22.73	GPM	Domestic	Water Supply	11.28		BROWN	SAND		SOFT
	645006	4901370	261.22	41.15	Rotary (Air)	41.15	5	22.73	GPM	Domestic	Water Supply	28.96		GREY	CLAY	TILL	DENSE
	645006	4901370	261.22	41.15	Rotary (Air)	41.15	5	22.73	GPM	Domestic	Water Supply	37.19		GREY	CLAY		STICKY
	645006	4901370	261.22	41.15	Rotary (Air)	41.15	5	22.73	GPM	Domestic	Water Supply	41.15		BROWN	SAND	SILT	STONES
1909049	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	0.30	0		TOPSOIL		
	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	1.22		BROWN	FINE SAND		
	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	4.27			CLAY	STONES	GRAVEL
	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	6.40		GREY	CLAY	GRAVEL	STONES
	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	10.67			COARSE GRAVEL	CLAY	STONES
	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	19.81			COARSE GRAVEL	SILTY	STONES
	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	20.73		GREY	CLAY		
	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	23.77			FINE SAND	CLAY	GRAVEL
	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	24.69		GREY	MEDIUM SAND		
	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	26.21		GREY	MEDIUM SAND	CLAY	
	645218	4901359	264.82	29.26	Rotary (Reverse)	23.77	3	13.638	GPM	Livestock	Water Supply	29.26		GREY	CLAY	SAND	GRAVEL
4602451	645079.7	4901397	261.10	47.55	Cable Tool	45.72	4	18.184	GPM	Livestock	Water Supply	6.10	B	BROWN	CLAY		
	645079.7	4901397	261.10	47.55	Cable Tool	45.72	4	18.184	GPM	Livestock	Water Supply	37.19			HARDPAN		
	645079.7	4901397	261.10	47.55	Cable Tool	45.72	4	18.184	GPM	Livestock	Water Supply	37.49			MEDIUM		
	645079.7	4901397	261.10	47.55	Cable Tool	45.72	4	18.184	GPM	Livestock	Water Supply	45.42		BLUE	CLAY		
	645079.7	4901397	261.10	47.55	Cable Tool	45.72	4	18.184	GPM	Livestock	Water Supply	45.72			MEDIUM SAND	GRAVEL	
	645079.7	4901397	261.10	47.55	Cable Tool	45.72	4	18.184	GPM	Livestock	Water Supply	47.55			LIMESTONE		

Table A-1 MECP Wells

Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
SAND																	
4602473	645351.7	4901442	263.47	32.00	Cable Tool	32.00	9	40.914	GPM	Livestock	Water Supply	5.49	0	RED	CLAY		
	645351.7	4901442	263.47	32.00	Cable Tool	32.00	9	40.914	GPM	Livestock	Water Supply	25.30		BLUE	CLAY	STONES	
	645351.7	4901442	263.47	32.00	Cable Tool	32.00	9	40.914	GPM	Livestock	Water Supply	27.43			GRAVEL	CLAY	SILT
	645351.7	4901442	263.47	32.00	Cable Tool	32.00	9	40.914	GPM	Livestock	Water Supply	30.48			HARDPAN		
	645351.7	4901442	263.47	32.00	Cable Tool	32.00	9	40.914	GPM	Livestock	Water Supply	32.00			MEDIUM SAND	GRAVEL	
	644774.7	4901823	247.09	21.03	Cable Tool	20.73	8	36.368	GPM	Livestock	Water Supply	5.49		RED	MEDIUM SAND	CLAY	
	644774.7	4901823	247.09	21.03	Cable Tool	20.73	8	36.368	GPM	Livestock	Water Supply	20.73			HARDPAN		
	644774.7	4901823	247.09	21.03	Cable Tool	20.73	8	36.368	GPM	Livestock	Water Supply	21.03			GRAVEL		
6901068	644968.7	4902325	234.77	9.75	Boring	9.14	10	45.46	GPM	Livestock	Water Supply	9.14	6901068	BLUE	CLAY	STONES	
	644968.7	4902325	234.77	9.75	Boring	9.14	10	45.46	GPM	Livestock	Water Supply	9.75			GRAVEL		
7281698	644947	4901704	259.87		Boring					Monitoring	Test Hole		7281698				
7281699	644967	4901864	252.69		Boring					Monitoring	Test Hole		7281699				
7281700	644834	4901797	252.12		Boring					Monitoring	Test Hole		7281700				
1917544	645030	4901625	258.78	9.14	Other Method					Not Used	Observation Wells	4.57	1917544	BROWN	SAND	SILT	
	645030		258.78	9.14	Other Method					Not Used	Observation Wells	7.62		BROWN	SILT	SAND	
	645030		258.78	9.14	Other Method					Not Used	Observation Wells	9.14		GREY	SILT	SAND	
6919246	644881.7	4902114	235.97	28.65	Rotary (Convent.)	22.25	7	31.822	GPM	Public	Water Supply	0.61	B	BROWN	SAND	TOPSOIL	SOFT
	644881.7	4902114	235.97	28.65	Rotary (Convent.)	22.25	7	31.822	GPM	Public	Water Supply	4.88		BROWN	CLAY	STONES	HARD
	644881.7	4902114	235.97	28.65	Rotary (Convent.)	22.25	7	31.822	GPM	Public	Water Supply	18.90		GREY	CLAY	STONES	HARD
	644881.7	4902114	235.97	28.65	Rotary (Convent.)	22.25	7	31.822	GPM	Public	Water Supply	21.34		GREY	GRAVEL	SAND	SILT
	644881.7	4902114	235.97	28.65	Rotary (Convent.)	22.25	7	31.822	GPM	Public	Water Supply	22.25		GREY	CLAY	STONES	HARD
	644881.7	4902114	235.97	28.65	Rotary (Convent.)	22.25	7	31.822	GPM	Public	Water Supply	28.65		GREY	LIMESTONE	HARD	
	644736		244.61	30.48	Rotary (Convent.)				GPM	Test Hole	Abandoned-Supply	2.13		BROWN	SAND	GRAVEL	SILT
	644736		244.61	30.48	Rotary (Convent.)				GPM	Test Hole	Abandoned-Supply	9.14		BROWN	CLAY	STONES	SILT
	644736		244.61	30.48	Rotary (Convent.)				GPM	Test Hole	Abandoned-Supply	10.67		GREY	SAND	FINE SAND	

Table A-1 MECP Wells
Project : J&J Developments, Udora Water Balance Evaluation (22012.00)

Well ID	X	y	Elevation (m)	Well Depth (m)	Construction Method	Water Level (m)	Water Yield	LPM	Units of Measurement	Water Use	Water Status	Formation Depth(m)	Overburden or Bedrock?	Material Colour	Material 1	Material 2	Material 3
7145922	644736	4901785	244.61	30.48	Rotary (Convent.)				GPM	Test Hole	Abandoned-Supply	24.08	7145922	GREY	CLAY	STONES	
	644736		244.61	30.48	Rotary (Convent.)				GPM	Test Hole	Abandoned-Supply	30.48		GREY	LIMESTONE		HARD

Table A-2 Water Well Reconnaissance Survey
Project: J&J Developments Udora Water Balance Evaluation (22012.00)
Hamlet of Udora, Durham Region

1- Taken either at the well or at the middle of the drive way

[illegible]

Table A-2 Water Well Reconnaissance Survey
Project: J&J Developments Udora Water Balance Evaluation (22012.00)
Hamlet of Udora, Durham Region

Address	Owner Present at Time of Site Visit (y/n)	Conduct Inspection (CI) or Left Letters (LL)	Well Types	Well Depth (ft)	Well Depth (m)	GPS Coordinate NAD 83 ¹			Consent to Monitor	Water Level			Well Age (years)	Diameter (inch)	Type of Casing	Casing Condition	Stick Up (m)	Comments
						Zone	Easting	Northing		2018-09-25	2018-09-27	2018-03-10						
										(m bTOP)	(m bTOP)	(m bTOP)						
9 Victoria Rd	y	LL	Unknown			17 T	0644970	4902073	No									Dog barking aggressively, owner not present, Left Information Packet with son wanted to wait for wife
10 Victoria Rd	y	LL	Unknown			17 T	0644968	4902038					>30					
14 Victoria Rd	n	LL	Unknown			17 T	0644947	4902087										
16 Victoria Rd	n	LL	Unknown			17 T	0644952	4902107										
20 Victoria Rd	n	LL	Unknown			17 T	0644933	4902116										
22 Victoria Rd	n	LL	Unknown			17 T	0644927	4902129										
23 Victoria Rd	n	LL	Drilled			17 T	0644958	4902141										
25 Victoria Rd	y	LL	Unknown			17 T	0644942	4902167										Left Information Packet, underground well, will discuss with husband
28 Victoria Rd	n	LL	Unknown			17 T	0644924	4902194										
31 Victoria Rd	y	CI	Drilled	27	8.2	17 T	0644945	4902204	No	3.345			3	10				would not sign to give consent
32 Victoria Rd	y	LL	Dug			17 T	0644919	4902202					>50					Good water pressure
36 Victoria Rd	y	LL	Dug			17 T	0644913	4902221										Good water pressure, concrete sealed
37 Victoria Rd	n	LL	Unknown			17 T	0644913	4902268										
38 Victoria Rd	n	LL	Unknown			17 T	064886	4902259										
40 Victoria Rd	n	LL	Unknown			17 T	0644890	4902270										
46 Victoria Rd	n	LL	Unknown			17 T	0644878	4902306										
48 Victoria Rd	n	LL	Drilled	100	30.5	17 T	0644864	4902343										2 wells, active =100ft, one dry
52 Victoria Rd	y	-	Dug			17 T	0644832	4902335	Yes				>60	10	Concrete		0.69	sealed concrete, low water pressure
6 York	y	CI	Drilled				-	-	Yes	3.84								
7 York	n	LL	Drilled			17 T	0645016	4902096										
9 York	n	LL	Unknown			17 T	0645057	4902129										
10 York	n	LL	Unknown			17 T	0645038	4901124										
16 York	n	LL	Unknown			17 T	0645056	4902126										
19 York	y	LL	Unknown			17 T	0645097	4902141										
21 York	n	LL	Unknown			17 T	0645114	4902153										in a rush, will read over and send documents
25 York	y	CI	Drilled			17 T	0645123	4902153	Yes		1.79		>40	8			0.28	no water pressure issues
27 York	n	LL	Drilled			17 T	0645148	4902154										
28 York	y	LL	Unknown			17 T	0645105	4902164										
32 York	y	LL	Drilled			17 T	0645150	4902176										Does not want to consent because of impending change of ownership
33 York	n	LL	Drilled			17 T	0645190	4902181										
35 York	n	LL	Unknown			17 T	0645221	4902194										
36 York	n	LL	Unknown			17 T	0648196	4902178										
37 York	n	LL	Unknown			17 T	0645229	4902201										
40 York	n	LL	Unknown			17 T	0645237	4902242										
43 York	y	LL	Drilled			17 T	0645265	4902186										angry we did not provide envelopes, will review information
45 York	n	LL	Drilled			17 T	0645288	4902210										
49 York	y	LL	Drilled			17 T	0645302	4902224										will review information, does not believe the study will make a differene in the end
39/41 York	n	LL	Unknown			17 T	0645247	4902204										
Community Center, Lions Club	n	LL	Unknown			17 T	0644938	4902168										



Measurements recorded in: ☐ Metric ☒ Imperial

Tag #: A 230052

Page of

Well Owner's Information

First Name: Last Name / Organization: E-mail Address: ☐ Well Constructed by Well Owner
Mailing Address (Street Number/Name): Municipality: Province: Postal Code: Telephone No. (inc. area code):

Well Location

Address of Well Location (Street Number/Name): Township: Lot: Concession:
County/District/Municipality: City/Town/Village: Province: Postal Code:
UTM Coordinates: Zone: Easting: Northing: Municipal Plan and Sublot Number: Other:

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From To
	Top Soil			0 1
Brown	Sand + Gravel	Seams Brown Clay	Cobbles	1 19
Grey	Clay Till	Stones + Boulders	Hard	19 84
Grey	Coarse Sand + Fine Gravel	Layers of Broken Limestone		84 99

Annular Space		
Depth Set at (m/ft) From To	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
0 20	Bentonite Slurry	

Method of Construction		Well Use	
☐ Cable Tool ☒ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Other, specify	☐ Diamond ☐ Jetting ☐ Driving ☐ Digging	☐ Public ☒ Domestic ☐ Livestock ☐ Irrigation ☐ Industrial ☐ Other, specify	☐ Not used ☐ Dewatering ☐ Monitoring ☐ Cooling & Air Conditioning

Construction Record - Casing			Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From To	☐ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☐ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality ☐ Abandoned, other, specify ☐ Other, specify
6 1/4	Steel	.188	+3 88	
5 1/2	Steel		86 1/2 97	
5	1 1/2 Fr. Slotted, Open Hole		97 99	

Construction Record - Screen		
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify	Depth (m/ft) From To	Diameter (cm/in)
96-99		0 20	10
		20 88	7 1/8
		88 99	6 1/8

Well Contractor and Well Technician Information			
Business Name of Well Contractor		Well Contractor's Licence No.	
Business Address (Street Number/Name)		Municipality	
Province	Postal Code	Business E-mail Address	
Bus. Telephone No. (inc. area code)		Name of Well Technician (Last Name, First Name)	
Well Technician's Licence No.		Signature of Technician and/or Contractor	
Date Submitted		Contractor's Copy	

Results of Well Yield Testing			
After test of well yield, water was:	Draw Down		Recovery
☒ Clear and sand free ☐ Other, specify _____	Time (min)	Water Level (m/ft)	Time (min)
If pumping discontinued, give reason:	Static Level	36' 9"	
	1		1
	2		2
	3		3
	4		4
	5		5
Pump intake set at (m/ft)			
Pumping rate (l/min / GPM)			
Duration of pumping			
_____ hrs + _____ min			
Final water level end of pumping (m/ft)			
If flowing give rate (l/min / GPM)	15		15
	20		20
	25		25
Recommended pump depth (m/ft)			
Recommended pump rate (l/min / GPM)	30		30
	40	62' 10"	40
	50		50
Well production (l/min / GPM)			
Disinfected?			
☒ Yes ☐ No	60	67' 6"	60

Map of Well Location	
Please provide a map below following instructions on the back.	
Ravenshoe Road	
0.1 Km	
Durham Regional Rd. 1	

Comments: Test Well TW1	
Well owner's information package delivered	Date Package Delivered
☐ Yes ☒ No	Date Work Completed
Ministry Use Only	
Audit No. 2264126	
Received	



A257079

Measurements recorded in: ☐ Metric ☒ Imperial

Tag#: A257079

Page ____ of ____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	Capris Investments Inc.		
Mailing Address (Street Number/Name)	Municipality	Province	Postal Code
161 Oxford Street	Richmond Hill	ON	L4C4L6
Telephone No. (inc. area code)			
416 948 8659			

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Birdie Smith Cres.	Uxbridge	34	6
County/District/Municipality	City/Town/Village	Province	Postal Code
Durham	Uxbridge	Ontario	L4P0A9
UTM Coordinates Zone	Easting	Northing	Municipal Plan and Subplot Number
NAD 83	17644981	4901754	

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)
Brown	Clay	Pebbles	Hard	0 38
Grey	Clay	Stones	Hard	38 90
Grey	Gravel	Silt Sand	Mixed	90 117
Grey	Gravel	Clay Sand	Layered	117 137
Grey	Limestone		Fractured	137 149
Grey	Limestone		Hard	149 159

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
0 20	Benseal	
Method of Construction		
☐ Cable Tool	☐ Diamond	☐ Public
☒ Rotary (Conventional)	☐ Jetting	☐ Commercial
☐ Rotary (Reverse)	☐ Driving	☐ Not used
☐ Boring	☐ Digging	☐ Domestic
☐ Air percussion		☐ Livestock
☐ Other, specify		☐ Municipal
		☐ Test Hole
		☐ Cooling & Air Conditioning
		☐ Industrial
		☐ Other, specify

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	☒ Water Supply	
6 1/4	Steel	188	+2 137	☒ Replacement Well	
6 1/8	Open Hole		137 159	☐ Test Hole	
				☐ Recharge Well	
				☐ Dewatering Well	
				☐ Observation and/or Monitoring Hole	
				☐ Alteration (Construction)	
				☐ Abandoned, Insufficient Supply	
				☐ Abandoned, Poor Water Quality	
				☐ Abandoned, other, specify	
				☐ Other, specify	

Construction Record - Screen			
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)
			From To

Water Details		Hole Diameter	
Water found at Depth	Kind of Water: ☒ Fresh ☐ Untested	Depth (m/ft)	Diameter (cm/in)
159 (m/ft)	☐ Gas ☐ Other, specify	From To	
		0 20	10
Water found at Depth	Kind of Water: ☐ Fresh ☐ Untested		
(m/ft)	☐ Gas ☐ Other, specify	+2 137	6 5/8
Water found at Depth	Kind of Water: ☐ Fresh ☐ Untested	137 159	6 1/8
(m/ft)	☐ Gas ☐ Other, specify		

Well Contractor and Well Technician Information			
Business Name of Well Contractor	Well Contractor's Licence No.		
Roger Broadway Est. Ltd.	114113		
Business Address (Street Number/Name)	Municipality		
P.O. Box 397 Sutton W	York		
Province	Postal Code	Business E-mail Address	
ON	L0E1R0	broadwaywells@bellnet.ca	
Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)		
905 722 5362	Broadway Grant		
Well Technician's Licence No.	Signature of Technician and/or Contractor		
00029			
Date Submitted	Y Y Y Y M M D D		

Results of Well Yield Testing				
After test of well yield, water was: ☐ Clear and sand free ☐ Other, specify	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason:	Static Level	46		
	1	63	1	74
Pump intake set at (m/ft)	2	65	2	71.5
	107			
Pumping rate (l/min / GPM)	3	67	3	70
	10			
Duration of pumping	4	68	4	68
	1 hrs + min			
Final water level end of pumping (m/ft)	5	69	5	67
	77			
If flowing give rate (l/min / GPM)	10	70	10	63
	15	71	15	61
Recommended pump depth (m/ft)	20	72	20	
	107			
Recommended pump rate (l/min / GPM)	25	73	25	
	8			
Well production (l/min / GPM)	30	74	30	
	15			
Disinfected?	40	75	40	
	☐ Yes ☐ No	50	76	50
	60	77	60	

Map of Well Location	
Please provide a map below following instructions on the back.	
Comments: Test Well TW19-1	
Well owner's information package delivered ☒ Yes ☐ No	Date Package Delivered 20190319
Date Work Completed 20190319	Ministry Use Only
	Audit No. 2304737
	Received

APPENDIX B

BOREHOLE LOGS

reviewer | DAO

[illegible]

(continued next page)

Sheet No. 2 of 3

LOG OF BOREHOLE MW1



project | PART OF LOT 35 CONCESSION 6, UDORA, ONTARIO

client | TONI RISI, CAPRIS INVESTMENT LTD.

location | UDORA, ONTARIO

position | E: 644831 N: 4901800 (17T, Geodetic)

rig type | CME 75, track-mounted

method | Hollow stem augers, 215 mm dia.

coring | n/a

project no. | 161-09454-00

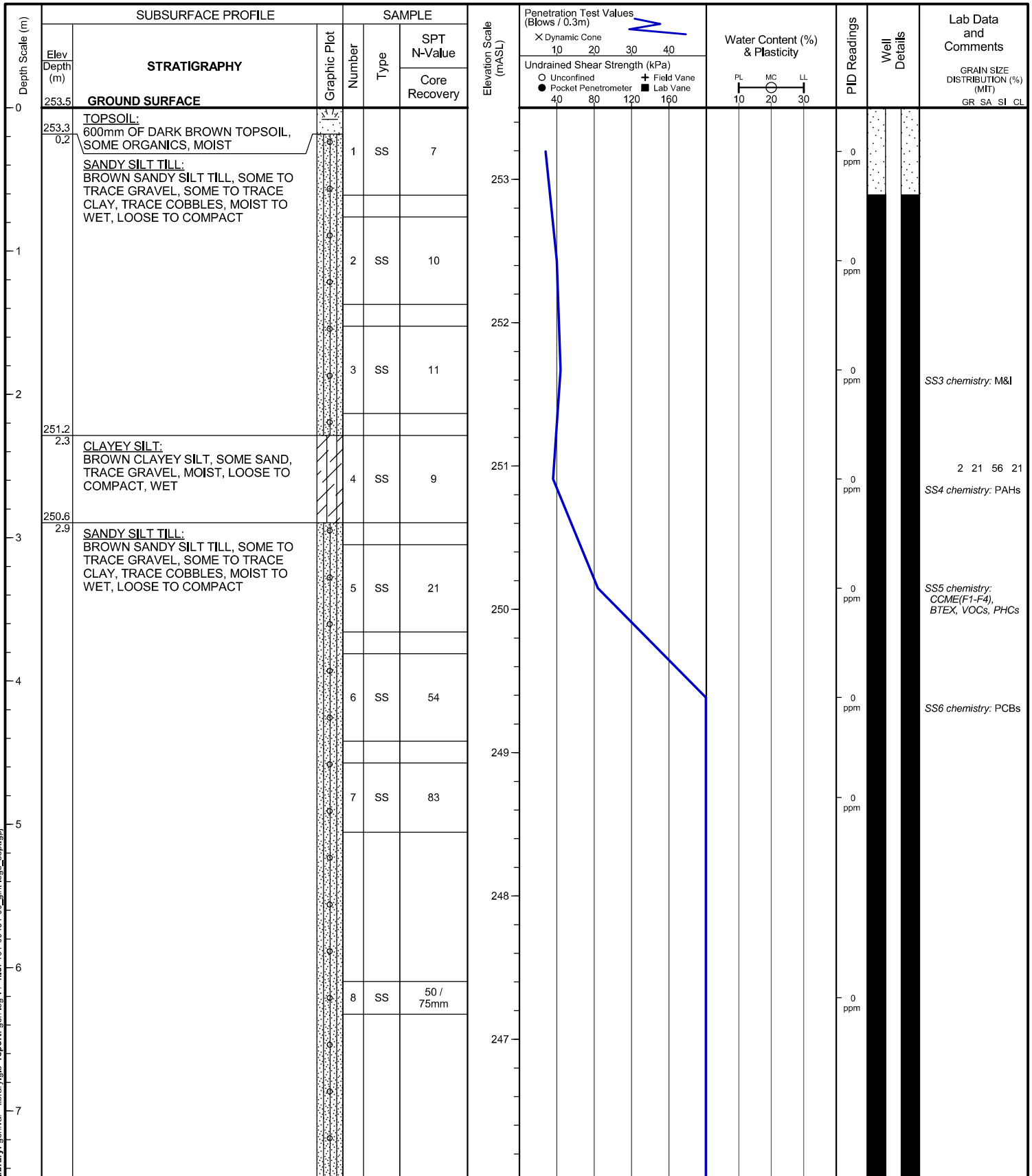
date started | 2016/07/25

supervisor | EJP

reviewer | DAO

SUBSURFACE PROFILE				SAMPLE			Elevation Scale (mASL)	Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) O Unconfined ● Pocket Penetrometer 40 80 120 160 + Field Vane ■ Lab Vane	Water Content (%) & Plasticity PL MC LL 10 20 30	PID Readings	Well Details	Lab Data and Comments GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL
Depth Scale (m)	Elev Depth (m)	STRATIGRAPHY	Graphic Plot	Number	Type	SPT N-Value Core Recovery						
15		(continued)										
237.4 15.3		BOREHOLE TERMINATED AT 15.3m BELOW GROUND SURFACE IN SANDY SILT TILL.		14	SS	50 / 50mm				0 ppm		
END OF BOREHOLE Borehole was dry and open upon completion. 50 mm monitoring well installed. No. 10 screen installed. WATER LEVEL MONITORING Date Aug 3, 2016 Depth (m) 10.3 Elevation (m) 242.4												

reviewer | DAO



Sheet No. 1 of 3

LOG OF BOREHOLE MW2



project | PART OF LOT 35 CONCESSION 6, UDORA, ONTARIO

client | TONI RISI, CAPRIS INVESTMENT LTD.

location | UDORA, ONTARIO

position | E: 644966 N: 4901867 (17T, Geodetic)

rig type | CME 75, track-mounted

method | Hollow stem augers, 215 mm dia.

coring | n/a

project no. | 161-09454-00

date started | 2016/07/26

supervisor | EJP

reviewer | DAO

Depth Scale (m)	SUBSURFACE PROFILE			SAMPLE			Elevation Scale (mASL)	Penetration Test Values (Blows / 0.3m)			Water Content (%) & Plasticity	PID Readings	Well Details	Lab Data and Comments
	Elev Depth (m)	STRATIGRAPHY	Graphic Plot	Number	Type	SPT N-Value Core Recovery		X Dynamic Cone	Undrained Shear Strength (kPa)	Field Vane				
		(continued)						10 20 30 40	40 80 120 160	PL MC LL				GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL
		SANDY SILT TILL; BROWN SANDY SILT TILL, SOME TO TRACE GRAVEL, SOME TO TRACE CLAY, TRACE COBBLES, MOIST TO WET, LOOSE TO COMPACT (continued)		9	SS	50 / 25mm	246					0 ppm		
8														
				10	SS	50 / 25mm	245					0 ppm		
9														
				11	SS	50 / 75mm	244					0 ppm		
10														
				12	SS	50 / 50mm	243					0 ppm		
11														
				13	SS	50 / 25mm	242					0 ppm		
12														
		...at 12.7 m, brown medium to coarse grained sand, some gravel, very dense, wet to 12.8 m					241					0 ppm		
13				13	SS	50 / 25mm	240					0 ppm		
14							239							
	239.2 14.3	SAND; BROWN MEDIUM TO COARSE GRAINED SAND, SOME GRAVEL, VERY DENSE, WET												...at 14.3m, slight odour in soil sample to 16.9m

(continued next page)

project no. | 161-09454-00

rig type | CME 75, track-mounted

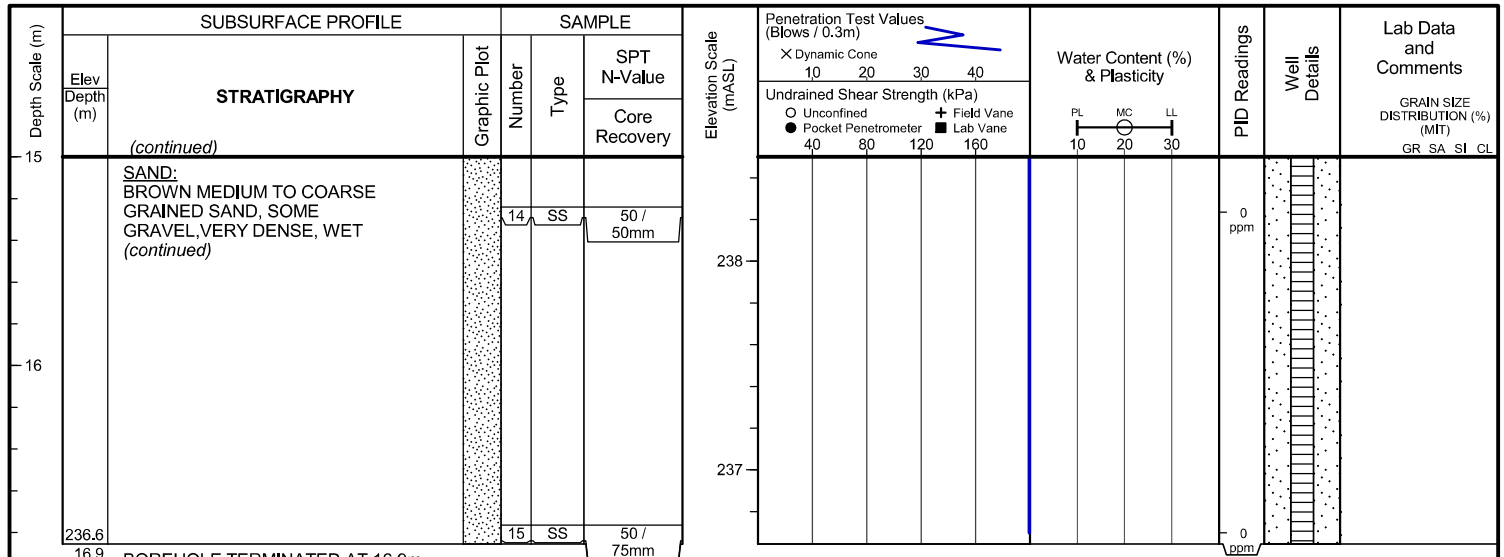
date started | 2016/07/26

method | Hollow stem augers, 215 mm dia.

supervisor | EJP

coring | *n/a*

reviewer | DAO



END OF BOREHOLE

Borehole was dry and open upon completion.

50 mm monitoring well installed.
No. 10 screen installed.

WATER LEVEL MONITORING

Date	Depth (m)	Elevation (m)
Aug 3, 2016	13.2	240.3
Aug 10, 2016	13.6	239.9

LOG OF BOREHOLE MW3



project | PART OF LOT 35 CONCESSION 6, UDORA, ONTARIO

project no. | 161-09454-00

client | TONI RISI, CAPRIS INVESTMENT LTD.

rig type | CME 75, track-mounted

date started | 2016/07/25

location | UDORA, ONTARIO

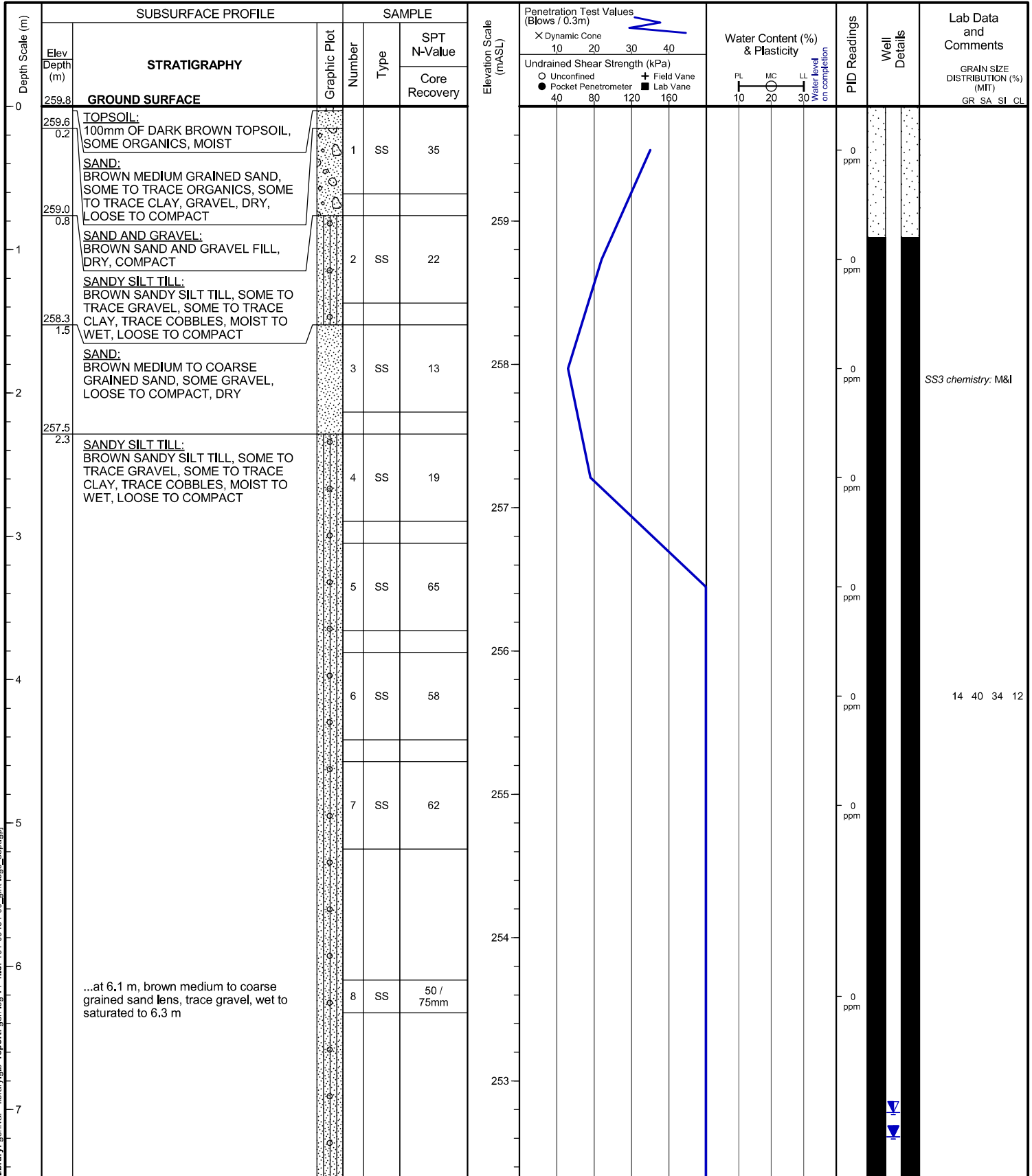
method | Hollow stem augers, 215 mm dia.

supervisor | EJP

position | E: 644953 N: 4901706 (17T, Geodetic)

coring | n/a

reviewer | DAO



(continued next page)

Sheet No. 1 of 3

LOG OF BOREHOLE MW3



project | PART OF LOT 35 CONCESSION 6, UDORA, ONTARIO

client | TONI RISI, CAPRIS INVESTMENT LTD.

location | UDORA, ONTARIO

position | E: 644953 N: 4901706 (17T, Geodetic)

rig type | CME 75, track-mounted

method | Hollow stem augers, 215 mm dia.

coring | n/a

project no. | 161-09454-00

date started | 2016/07/25

supervisor | EJP

reviewer | DAO

Depth Scale (m)	SUBSURFACE PROFILE			SAMPLE		Elevation Scale (mASL)	Penetration Test Values (Blows / 0.3m)		Water Content (%) & Plasticity		PID Readings	Well Details	Lab Data and Comments
	Elev Depth (m)	STRATIGRAPHY	Graphic Plot	Number	Type		Dynamic Cone	Undrained Shear Strength (kPa)	PL	MC			
		(continued)					10 20 30 40	40 80 120 160	10	20	30		GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL
8		SANDY SILT TILL; BROWN SANDY SILT TILL, SOME TO TRACE GRAVEL, SOME TO TRACE CLAY, TRACE COBBLES, MOIST TO WET, LOOSE TO COMPACT (continued) ...at 7.7 m, brown medium to coarse grained sand lens, trace silt, trace clay, saturated to 8.0 m		9	SS	252					0 ppm		
9		...at 9.1 m, brown medium to coarse grained sand lens, trace silt, trace clay, saturated to 9.4 m		10	SS	251					0 ppm		
10						250							
11		...at 10.7 m, greyish brown medium to coarse grained sand lens, trace silt, trace clay, saturated to 10.8 m		11	SS	249					0 ppm		
12						248							
13				12	SS	247					0 ppm		
14						246					0 ppm		
				13	SS	245					0 ppm		

(continued next page)

LOG OF BOREHOLE MW3



project | PART OF LOT 35 CONCESSION 6, UDORA, ONTARIO

project no. | 161-09454-00

client | TONI RISI, CAPRIS INVESTMENT LTD.

rig type | CME 75, track-mounted

date started | 2016/07/25

location | UDORA, ONTARIO

method | Hollow stem augers, 215 mm dia.

supervisor | EJP

position | E: 644953 N: 4901706 (17T, Geodetic)

coring | n/a

reviewer | DAO

Depth Scale (m)	SUBSURFACE PROFILE			SAMPLE			Elevation Scale (mASL)	Penetration Test Values (Blows / 0.3m)		Water Content (%) & Plasticity		PID Readings	Well Details	Lab Data and Comments
	Elev Depth (m)	STRATIGRAPHY	Graphic Plot	Number	Type	SPT N-Value Core Recovery		10 20 30 40	40 80 120 160	PL MC LL	Water level on completion			
15		(continued)												
		SANDY SILT TILL; BROWN SANDY SILT TILL, SOME TO TRACE GRAVEL, SOME TO TRACE CLAY, TRACE COBBLES, MOIST TO WET, LOOSE TO COMPACT (continued)		14	SS	74								
244.0														

BOREHOLE TERMINATED AT 15.8m BELOW GROUND SURFACE IN SANDY SILT TILL.

END OF BOREHOLE

Unstabilized water level at 15.5 m below ground surface; borehole was open upon completion.

50 mm monitoring well installed.
No. 10 screen installed.

WATER LEVEL MONITORING

Date	Depth (m)	Elevation (m)
Aug 3, 2016	7.0	252.8
Aug 10, 2016	7.2	252.6



BOREHOLE NO. MW17-1

PAGE 1 of 1

PROJECT NAME: UDORA PHASE TWO ESA

PROJECT NO.: 161-09454-00

CLIENT: CAPRIS INV. INC.

DATE COMPLETED: Sep 20, 2017

BOREHOLE TYPE: SPLIT SPOON / HOLLOW STEM AUGER

SUPERVISOR: DAO / JW

GROUND ELEVATION: 250.2 mASL

REVIEWER: SJD

DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	SAMPLE					CONE PENETRATION		WATER CONTENT %		REMARKS
				TYPE	N VALUE	% WATER	% RECOVERY	PILOTOV (ppm)	"N" VALUE 10 20 30	SHEAR STRENGTH 50 100 150 200	10 20 30		
0.0													
0.4	SAND TOPSOIL: DARK BROWN SAND TOPSOIL, TRACE TO SOME SILT, TRACE ROOTLETS / ORGANICS, MOIST.			SS1	4		0	0.0					WATER LEVEL AT 0.82 mBGS ON SEPT. 20, 2017
1.0	SAND FILL: ORANGY BROWN, SAND FILL, TRACE TO NO SILT, TRACE ROOTLETS, MOIST, LOOSE.			SS2	13		1	0.0					
1.2	SILTY SAND TILL: GREYISH BROWN SILTY SAND TILL, TRACE GRAVEL, TRACE CLAY, MOIST TO WET, LOOSE.			SS3	8		0	0.0					WATER LEVEL AT 2.04 mBGS ON SEPT. 22, 2017
2.0													
2.3	SILTY SAND TILL: GREYISH BROWN SILTY SAND TILL, SOME COBBLES, TRACE TO SOME CLAY, MOIST TO WET, LOOSE TO DENSE.			SS4	17		1	0.0					
3.0	- 0.1 m OF COBBLES FROM 2.63 m TO 2.74 m			SS5	26		1	0.0					
4.0													
4.6	SAND AND GRAVEL: BROWN, SAND AND FINE GRAVEL, SOME COBBLES, VERY DENSE, SATURATED.			SS6	50 for 3'		0	0.0					
5.0													
6.0													
6.7	BOREHOLE TERMINATED AT 6.7 m IN SAND AND GRAVEL.			SS7	50 for 2'		0	0.0					
7.0													
8.0													
9.0													
10.0													

WSP GEOTECH (METRIC) 161-09454-00 MW LOGS.GPJ WSP_ENV_V1.GDT 10/31/17



BOREHOLE NO. MW17-2

PAGE 1 of 1

PROJECT NAME: UDORA PHASE TWO ESA

PROJECT NO.: 161-09454-00

CLIENT: CAPRIS INV. INC.

DATE COMPLETED: Sep 21, 2017

BOREHOLE TYPE: SPLIT SPOON / HOLLOW STEM AUGER

SUPERVISOR: DAO / JW

GROUND ELEVATION: 251.8 mASL

REVIEWER: SJD

DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	SAMPLE					CONE PENETRATION		WATER CONTENT %		REMARKS
				TYPE	N VALUE	% WATER	% RECOVERY	PILOT/TOV (ppm)	"N" VALUE 10 20 30	SHEAR STRENGTH 50 100 150 200	10 20 30		
0.0	SAND TOPSOIL: SOME SILT, TRACE ORGANICS.												
0.2	SAND: DARK BROWN, SAND, SOME SILT, TRACE TO SOME ORGANICS, MOIST, LOOSE.			SS1	5		0	0.0					
1.0													
1.1	SILTY SAND TILL: BROWN, SILTY SAND TILL, TRACE CLAY, TRACE GRAVEL, TRACE ORGANICS, MOIST, LOOSE.			SS2	9		0	0.0					
1.5	SILTY SAND / SANDY SILT TILL: BROWN TO GREYISH BROWN, SILTY SAND TO SANDY SILT TILL, TRACE CLAY, TRACE GRAVEL, TRACE COBBLES, MOIST TO WET, LOOSE TO COMPACT.			SS3	12		0	0.0					
2.0													
3.0				SS4	12		1	0.0					
4.0													
4.6				SS5	11		1	0.0					
5.0	SANDY SILT TILL: SANDY SILT TILL, VARVED CLAY LAYERS, SOME CLAY, TRACE COBBLES, TRACE GRAVEL, VERY DENSE			SS6	20		1	0.0					
5.67				SS7	59		1	0.0					WATER LEVEL AT 5.67 mBGS ON SEPT. 21, 2017
6.0													
6.1	SANDY SILT TILL: LIGHT BROWN TO GREY SANDY SILT TILL, TRACE TO SOME GRAVEL, TRACE COBBLES, MOIST, VERY DENSE.			SS8	60 for 3"		0						
6.7	BOREHOLE TERMINATED AT 6.7 m IN SANDY SILT TILL.												WATER LEVEL AT 2.75 mBGS ON SEPT. 22, 2017
7.0													
8.0													
9.0													
10.0													

WSP GEOTECH (METRIC) 161-09454-00 MW LOGS.GPJ WSP_ENV_V1.GDT 10/31/17



BOREHOLE NO. MW17-3

PAGE 1 of 1

PROJECT NAME: UDORA PHASE TWO ESA

PROJECT NO.: 161-09454-00

CLIENT: CAPRIS INV. INC.

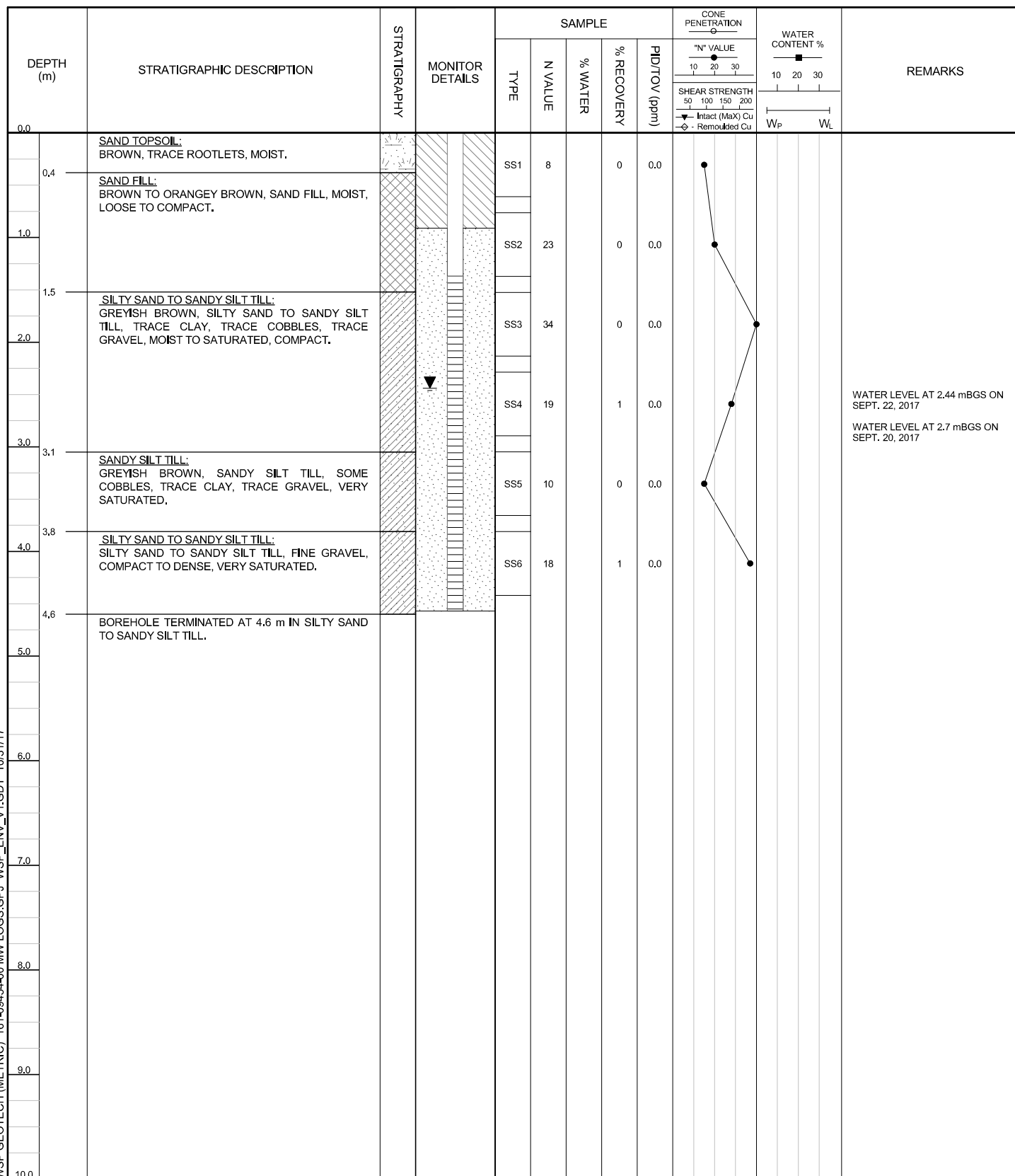
DATE COMPLETED: Sep 20, 2017

BOREHOLE TYPE: SPLIT SPOON / HOLLOW STEM AUGER

SUPERVISOR: DAO / JW

GROUND ELEVATION: 250.8 mASL

REVIEWER: SJD



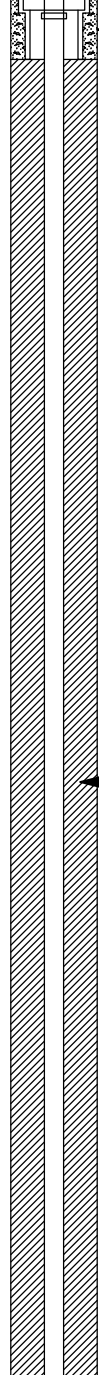


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: MW1-22
DATE COMPLETED: 31 October 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITOR INSTALLATION	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
0.06	TOPSOIL, organic	0.06	 Concrete	1	X	45	2	0.4
0.30	SANDY SILT, trace organics, brown, dry	0.30		2	X	75	14	0.3
0.5	SANDY SILT, trace gravel, brown, dry			3	X	100	24	0.2
1.0				4	X	100	21	0.9
1.5				5	X	100	50	0.7
2.0				6	X	100	57	0.8
2.5				7	X	100	81	0.6
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



File: \\GHDNET\GHD\CA\TORONTO\PROJECTS\662\12585643\TECH\GINT\12585643.MLGPJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: MW1-22
DATE COMPLETED: 31 October 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITOR INSTALLATION	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
7.5								
8.0				8		100	58	0.6
8.5								
9.0								
9.5				9		100	85	0.6
10.0								
10.5								
11.0	SAND, trace silt, grey, wet	10.97		10		100	70	0.9
11.5								
12.0	END OF BOREHOLE @ 12.19m BGS	12.19						
12.5								
13.0								
13.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



File: \\GHDNET\GHD\CAIT\TORONTO\PROJECTS\662\12585643\TECH\GINT\12585643.MLGPJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22

WELL DETAILS

Screened interval:

9.14 to 12.19m BGS

Length: 3.05m

Diameter: 51mm

Slot Size: #10

Material: PVC

Sand Pack:

7.62 to 12.19m BGS

Material: Silica



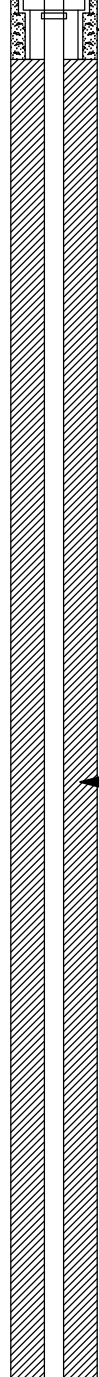
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: MW2-22
DATE COMPLETED: 24 October 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

File: \\GHDNET\GHD\CAITON\PROJECTS\662\12585643\TECH\GINT\12585643.MLG.PJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITOR INSTALLATION	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
0.06	TOPSOIL, organic	0.06	 Concrete Bentonite	1	X	45	10	0.3
0.46	SILTY SAND, trace gravel, brown, dry, trace organics	0.46		2	X	75	17	0.4
0.53	SAND, brown, dry	0.53		3	X	100	40	0.4
1.52	SAND, trace gravel, brown, dry	1.52		4	X	100	24	
1.98	SILTY SAND, trace gravel, trace organics, brown, dry	1.98		5	X	100	50	0.7
6.10	SILT, trace sand, trace gravel, brown, dry	6.10		6	X	100	50/5	0.7
				7	X	100	50/5	0.4

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: MW2-22
DATE COMPLETED: 24 October 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITOR INSTALLATION	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
7.5	- grey at 7.62m BGS			8		100	50/5	0.9
8.0								
8.5								
9.0				9		100	50/5	0.8
9.5								
10.0								
10.5								
11.0	SAND, trace silt, brown, wet	10.67		10		100	50/5	1.0
11.5								
12.0								
12.5	END OF BOREHOLE @ 12.19m BGS	12.19						
13.0								
13.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



File: \\GHDNET\GHD\CA\TORONTO\PROJECTS\662\12585643\TECH\GINT\12585643.MLGPJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22

WELL DETAILS

Screened interval:

9.14 to 12.19m BGS

Length: 3.05m

Diameter: 51mm

Slot Size: #10

Material: PVC

Sand Pack:

7.62 to 12.19m BGS

Material: Silica



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: BH3-22
DATE COMPLETED: 31 October 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
0.06	TOPSOIL, organic, brown, wet	0.06		1	X	60	8	0
0.23	SAND, brown, wet	0.23		2	X	60	9	0
0.5	SANDY SILT, trace gravel, brown, moist			3	X	100	10	0
2.0	- dry at 2.29m BGS			4	X	55	23	0
3.5	- grey/brown at 3.81m BGS			5	X	100	34	0
4.0	- boulder at 4.27m BGS			6	X	100	69	0
4.57	END OF BOREHOLE @ 4.57m BGS	4.57						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



File: \\GHDNET\GHD\CA\TORONTO\PROJECTS\6621\2585643\TECH\GINT\12585643.MLG.PJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22

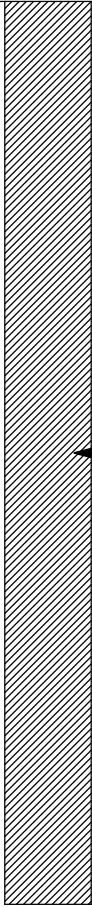


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: BH4-22
DATE COMPLETED: 1 November 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
0.5	TOPSOIL, organic	0.12		1	X	45	15	0
1.0	SANDY SILT, trace gravel, brown, dry			2	X	100	15	0.2
1.5				3	X	20	21	0
2.0					X			
2.5	- wet at 2.29m BGS			4	X	80	8	0.2
3.0					X			
3.5	- dry at 3.35m BGS			5	X	80	17	0
4.0					X			
4.5	- sand lens, dry at 4.27m BGS			6	X	100	19	0
4.57	END OF BOREHOLE @ 4.57m BGS	4.57						
5.0								
5.5								
6.0								
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



File: \\GHDNET\GHD\CA\TORONTO\PROJECTS\662\12585643\TECH\GINT\12585643.MLG.PJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: BH5-22
DATE COMPLETED: 31 October 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
0.06	TOPSOIL, organic, brown, dry SANDY SILT, trace gravel, brown, dry	0.06		1		55	12	0
0.5				2		100	17	0
1.0				3		95	10	0
1.5				4		80	21	0
2.0				5		100	13	0
2.5	- boulder at 2.44m BGS			6		70	19	0
3.0	- grey/brown at 3.05m BGS							
3.5								
4.0								
4.27	SAND, trace silt, grey, wet	4.27						
4.57	END OF BOREHOLE @ 4.57m BGS	4.57						
5.0								
5.5								
6.0								
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



File: \\GHDNET\GHD\CA\TORONTO\PROJECTS\6621\2585643\TECH\GINT\12585643.MLGPJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22

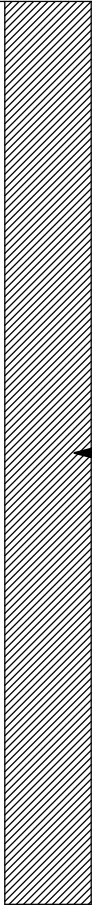


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: BH6-22
DATE COMPLETED: 1 November 2022
DRILLING METHOD: SSA
FIELD PERSONNEL: D. Blair

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
0.5	TOPSOIL, organic	0.67		1	X	55	2	0.2
1.0	SANDY SILT, trace gravel, brown, dry			2	X	75	14	0.1
1.5				3	X	25	24	0.1
2.0					X			
2.5	SAND, trace silt, brown, wet	2.29		4	X	55	34	0.2
3.0	- boulder at 2.90m BGS			5	X	75	27	0.4
3.5					X			
4.0	- boulder at 3.96m BGS			6	X	95	64	0.1
4.5	END OF BOREHOLE @ 4.57m BGS	4.57						
5.0								
5.5								
6.0								
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



File: \\GHDNET\GHD\CA\TORONTO\PROJECTS\662\12585643\TECH\GINT\12585643.MLG.PJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22

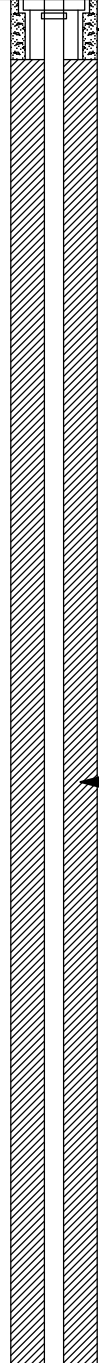


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: MW1-22
DATE COMPLETED: 31 October 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITOR INSTALLATION	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
0.5	TOPSOIL, organic	0.06	 Concrete Bentonite	1	X	45	2	0.4
1.0	SANDY SILT, trace organics, brown, dry	0.30		2	X	75	14	0.3
1.5	SANDY SILT, trace gravel, brown, dry			3	X	100	24	0.2
2.0				4	X	100	21	0.9
2.5				5	X	100	50	0.7
3.0				6	X	100	57	0.8
3.5				7	X	100	81	0.6
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



File: \\GHDNET\GHD\CA\TORONTO\PROJECTS\662\12585643\TECH\GINT\12585643.MLGPJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: MW1-22
DATE COMPLETED: 31 October 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITOR INSTALLATION	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
7.5								
8.0				8		100	58	0.6
8.5								
9.0								
9.5				9		100	85	0.6
10.0								
10.5								
11.0	SAND, trace silt, grey, wet	10.97		10		100	70	0.9
11.5								
12.0	END OF BOREHOLE @ 12.19m BGS	12.19						
12.5								
13.0								
13.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



File: \\GHDNET\GHD\CA\TORONTO\PROJECTS\6621\12585643\TECH\GINT\12585643.MLGPJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22

WELL DETAILS

Screened interval:

9.14 to 12.19m BGS

Length: 3.05m

Diameter: 51mm

Slot Size: #10

Material: PVC

Sand Pack:

7.62 to 12.19m BGS

Material: Silica



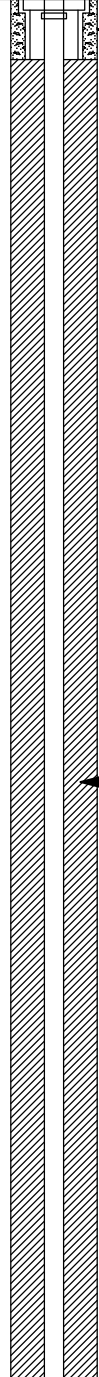
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: MW2-22
DATE COMPLETED: 24 October 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

File: \\GHDNET\GHD\CAIT\TORONTO\PROJECTS\6621\2585643\TECH\GINT\12585643.MLGPJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITOR INSTALLATION	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
0.5	TOPSOIL, organic	0.06	 Concrete Bentonite	1	X	45	10	0.3
	SILTY SAND, trace gravel, brown, dry, trace organics	0.46			X			
	SAND, brown, dry	0.53		2	X	75	17	0.4
1.0	SILTY SAND, trace gravel, trace organics, brown, dry				X			
1.5	SAND, trace gravel, brown, dry	1.52		3	X	100	40	0.4
2.0	SILTY SAND, trace gravel, brown, dry	1.98		4	X	100	24	
2.5				5	X	100	50	0.7
3.0					X			
3.5				6	X	100	50/5	0.7
4.0					X			
4.5					X			
5.0					X			
5.5					X			
6.0	SILT, trace sand, trace gravel, brown, dry	6.10		7	X	100	50/5	0.4
6.5					X			

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: Phase Two Environmental Site Assessment
PROJECT NUMBER: 12585643
CLIENT: 2695867 Ontario Inc.
LOCATION: Part of Lot 35, Conc. 6, Udora, Ontario

HOLE DESIGNATION: MW2-22
DATE COMPLETED: 24 October 2022
DRILLING METHOD: HSA
FIELD PERSONNEL: D. Blair

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITOR INSTALLATION	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
7.5	- grey at 7.62m BGS			8		100	50/5	0.9
8.0								
8.5								
9.0				9		100	50/5	0.8
9.5								
10.0								
10.5								
11.0	SAND, trace silt, brown, wet	10.67		10		100	50/5	1.0
11.5								
12.0								
12.5	END OF BOREHOLE @ 12.19m BGS	12.19						
13.0								
13.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



File: \\GHDNET\GHD\CA\TORONTO\PROJECTS\6621\2585643\TECH\GINT\12585643.MLGPJ Library File: GHD_ENVIRO_V07.GLB Report: OVERBURDEN LOG Date: 16/11/22

WELL DETAILS

Screened interval:

9.14 to 12.19m BGS

Length: 3.05m

Diameter: 51mm

Slot Size: #10

Material: PVC

Sand Pack:

7.62 to 12.19m BGS

Material: Silica

PROJECT: Capris Subdivision Udora										REF. NO.: 22-0223a									
CLIENT: J&J Development Group										ENCL NO.:									
PROJECT LOCATION: Udora, ON										Method: Hollow Stem Auger									
DATUM: Geodetic										Diameter: 152 mm									
BH LOCATION: N 4901797.173 E 644983.609										Date: Mar-08-2024 to Mar-08-2024									
										Equipment: Pontil Drilling CME									
										ORIGINATED BY SH									
										COMPILED BY PD									
										CHECKED BY RB									
SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors			PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m ³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)		
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (ppm)										
256.2	Ground Surface																		
256.2	TOPSOIL: 76 mm																		
256.1	SANDY SILT: trace gravel, brown, moist, loose		1	SS															
255.2			2	SS															
253.2	SANDY SILT TILL: trace gravel, light brown, moist		3	SS	40														
251.7	SILTY SAND TILL: some gravel, light brown, moist		4	SS	59														
250.1	SANDY SILT TILL: trace gravel, brown, moist		5	SS	99/ 275mm														
248.6	SILTY SAND: brown, wet		6	SS	100/ 225mm														
247.1	SILTY SAND: trace clay, grey, wet		7	SS	76														

PROJECT: Capris Subdivision Udora										REF. NO.: 22-0223a									
CLIENT: J&J Development Group										Method: Hollow Stem Auger									
PROJECT LOCATION: Udora, ON										Diameter: 152 mm									
DATUM: Geodetic										Date: Mar-08-2024 to Mar-08-2024									
BH LOCATION: N 4901797.173 E 644983.609										Equipment: Pontil Drilling CME									
										ORIGINATED BY SH									
										COMPILED BY PD									
										CHECKED BY RB									
SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m ³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL				
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (ppm)										
Continued																			
245.6	SILTY SAND: trace clay, grey, wet(Continued)						246												
10.7	END OF BOREHOLE Notes: 1) 50 mm dia. monitoring well was installed upon completion of drilling, screened from 7.62 m to 10.67 m. Water Level Readings: Date W.L. Depth (mbgs) March 8, 2024 5.15																		

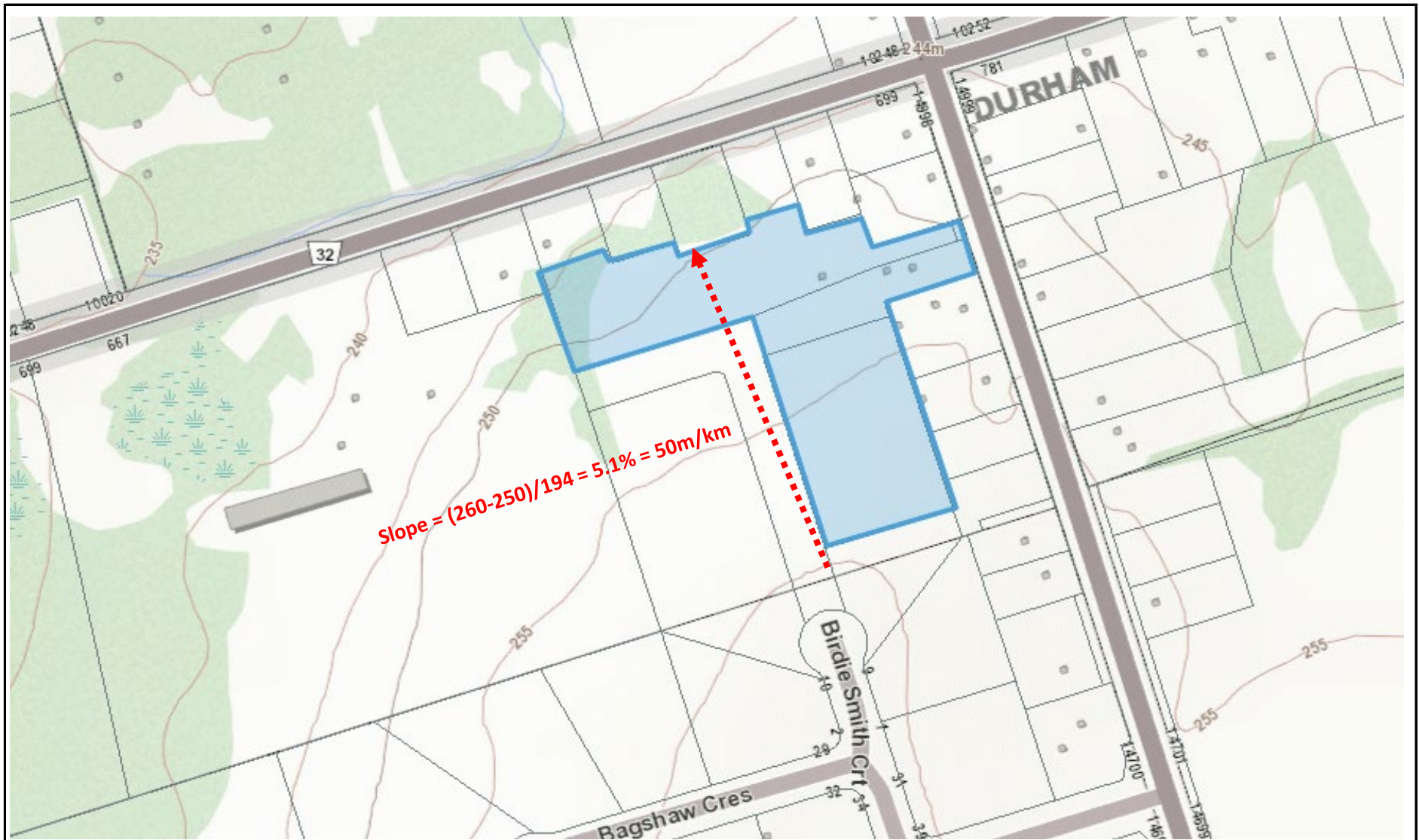
ENVISION-SOIL-ROCK-APRIL-5-2022-GLB
ENV-RO-HB-UMJ-AND-CGP-PMJ-2016-REV 22-0223A - BH/MW24-1 - MARCH 2024-GPJ 24-44

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, x 3: Numbers refer to Sensitivity
○ s=3% Strain at Failure

APPENDIX C

WATER BUDGET



NOTES

Site Location

Topography Infiltration Factor

Udora Estates Water Balance Evaluation,
Part Lot 35, Con. 6, TWP Uxbridge
For 2695867 Ontario Inc.

Date:	Jan-25	Scale:	AS SHOWN
Project:	22012.00	Ref No:	

GAMAN Consultants Inc.

Figure

C-1

TABLE C-1: INFILTRATION FACTORS**Project: Udora Estates Water Balance Evaluation Part Lots 24 & 35, Con. 6 TWP Uxbridge (22012.00)**

MOECC 1995 Hydrogeological Technical Information Requirements (page 4-62)

Desription of Area/Development Site		Pre-development		Post-development	
TOPOGRAPHY	Factor	Description	Factor	Description	Factor
Flat lying, average slope < 0.6m/km	0.3	Hilly land	0.1	Hilly land	0.1
Rolling land average slope of 2.8-3.8m	0.2				
Hilly land, average slopes of 28-47 metres	0.1				
SOILS					
Tight impervious Clay	0.1	Medium Loam to Sandy Loam	0.35	Med. Loam - Sandy Loam	0.35
Medium combinations of clay and loam	0.2			Impermeable Surfaces	0
open sandy loam	0.4				
COVER					
Cultivated land	0.1	Shrubs	0.15	Urban Lawn	0.15
Woodland	0.2				
Total Infiltration factor for pervious areas with medium loam to sandy loam pre-development and post-development.			0.6	Med. Loam to Sandy Loam	0.6
Total Infiltration factor for impermeable surfaces			Not applicable	Driveways and Rooftops	0

TABLE C-2: PRE-DEVELOPMENT AND POST-DEVELOPMENT WATER BUDGETS

Project: Udora Estates Water Balance Evaluation Part Lots 24 & 35, Con. 6 TWP Uxbridge (22012.00)

PRE-DEVELOPMENT WATER BUDGET	
Water Surplus (mm/yr) Average Silt Loam to F.Sandy Loam)	315.0
Infiltration Areas (m2)	17,055
Pre-Development Infiltration Factor	0.6
Infiltration Rate (mm/yr)	189
A Total Recharge m3/yr	3,223
Total Recharge mm/yr	189
Runoff m3/year	2,149

POST-DEVELOPMENT RECHARGE RATES	Urban Lawn	7 Roof tops	Seven Driveways	Totals
Total Precipitation (mm/yr)	897	897		897
Water Surplus (mm/yr) (Avg Silt Loam to Fine Sandy Loam)	321			
Areas (m2)	14,751	1931	370	17,052
Infiltration Factor	0.6	0	0	
Infiltration Rate (mm/yr)	193			
B Recharge m3/yr	2,841	-	-	2,841
Runoff m3/year = 90% Total Precipitation for driveways/Rooftops or difference between water surplus and infiltration for permeable areas	1,894	1,559	370	3,823
C Recharge Deficit (A-B) m3/year				382

Assumptions:

*Impervious areas include: Driveways and Dwellings, Runoff from Driveways not be used for mitigation

Table C-3: Recharge Mitigation

	Area (m2)	Flash Evaporation	Total Precip (mm/yr)	Available Recharge from source (m3/year)
Source of Recharge				
D Total Recharge from Rooftop Runoff on Lots 1-2 only.	594	0.9	897	480
E=D-C Excess Surplus in Recharge from Rooftops (m3/year) after mitigation				97

APPENDIX D

GROUNDWATER CHEMISTRY

TABLE D-1: SHALLOWS GROUNDWATER QUALITY RESULTS
PROEJECT: Udora Estates Water Balance Evaluation (22012.00)

Parameters	UNIT	ODWQS ⁽¹⁾	MW17-1	MW17-2	MW17-3
Sample Date			20-Feb-19	20-Feb-19	20-Feb-19
Calculated Parameters					
Anion Sum	me/L	-	8.92	7.55	8.92
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	510	436	517
Calculated TDS	mg/L	500	473	451	531
Carb. Alkalinity (calc. as CaCO3)	mg/L	30-500	<10	<10	<10
Cation Sum	me/L	-	7.58	8.81	10.6
Hardness (CaCO3)	mg/L	80-100	369	430	517
Ion Balance (% Difference)	%	-	85	117	119
Langelier Index	N/A	-	0.7	0.6	0.6
Saturation pH	N/A	-	6.66	6.65	6.54
Inorganics					
Total Ammonia-N	mg/L	-	0.01	<0.010	0.014
Conductivity	umho/cm	-	600	710	824
Dissolved Organic Carbon	mg/L	5	7.04	6.38	7.31
Orthophosphate (P)	mg/L	-	<0.0030	0.019	<0.0030
pH	pH	6.5-8.5	7.35	7.25	7.12
Dissolved Sulphate (SO4)	mg/L	500	14.1	7.91	14.1
Alkalinity (Total as CaCO3)	mg/L	30-500	510	436	517
Dissolved Chloride (Cl)	mg/L	250	8.05	2.52	4.14
Nitrite (N)	mg/L	1 ¹	0.01	<0.010	<0.010
Nitrate (N)	mg/L	10 ¹	0.302	2.12	0.201
Nitrate + Nitrite (N)	mg/L	10	0.312	2.12	0.201
Metals					
Dissolved Aluminum (Al)	mg/L	0.1	<0.0050	<0.0050	<0.0050
Dissolved Antimony (Sb)	mg/L	0.006 ¹	<0.00010	<0.00010	<0.00010
Dissolved Arsenic (As)	mg/L	0.01 ¹	0.00013	0.00039	0.00025
Dissolved Barium (Ba)	mg/L	1 ¹	0.0518	0.0532	0.0536
Dissolved Beryllium (Be)	mg/L	0.004	<0.00010	<0.00010	<0.00010
Dissolved Boron (B)	mg/L	5 ¹	0.03	0.1	0.051
Dissolved Cadmium (Cd)	mg/L	0.05 ¹	<0.000010	<0.000010	0.000032
Dissolved Calcium (Ca)	mg/L	-	125	153	174
Dissolved Chromium (Cr)	mg/L	0.05 ¹	0.00051	0.00097	<0.00050
Dissolved Cobalt (Co)	mg/L	0.0038	<0.00010	<0.00010	<0.00010
Dissolved Copper (Cu)	mg/L	1	0.00326	0.00103	0.00463
Dissolved Iron (Fe)	mg/L	0.3	<0.010	<0.010	<0.010
Dissolved Lead (Pb)	mg/L	0.01	0.00015	<0.000050	0.000108
Dissolved Magnesium (Mg)	mg/L	-	14	11.7	20.1
Dissolved Manganese (Mn)	mg/L	0.05	<0.00050	0.0005	0.00071
Dissolved Molybdenum (Mo)	mg/L	0.07	0.00008	0.000144	0.000067

TABLE D-1: SHALLOWS GROUNDWATER QUALITY RESULTS
PROEJECT: Udora Estates Water Balance Evaluation (22012.00)

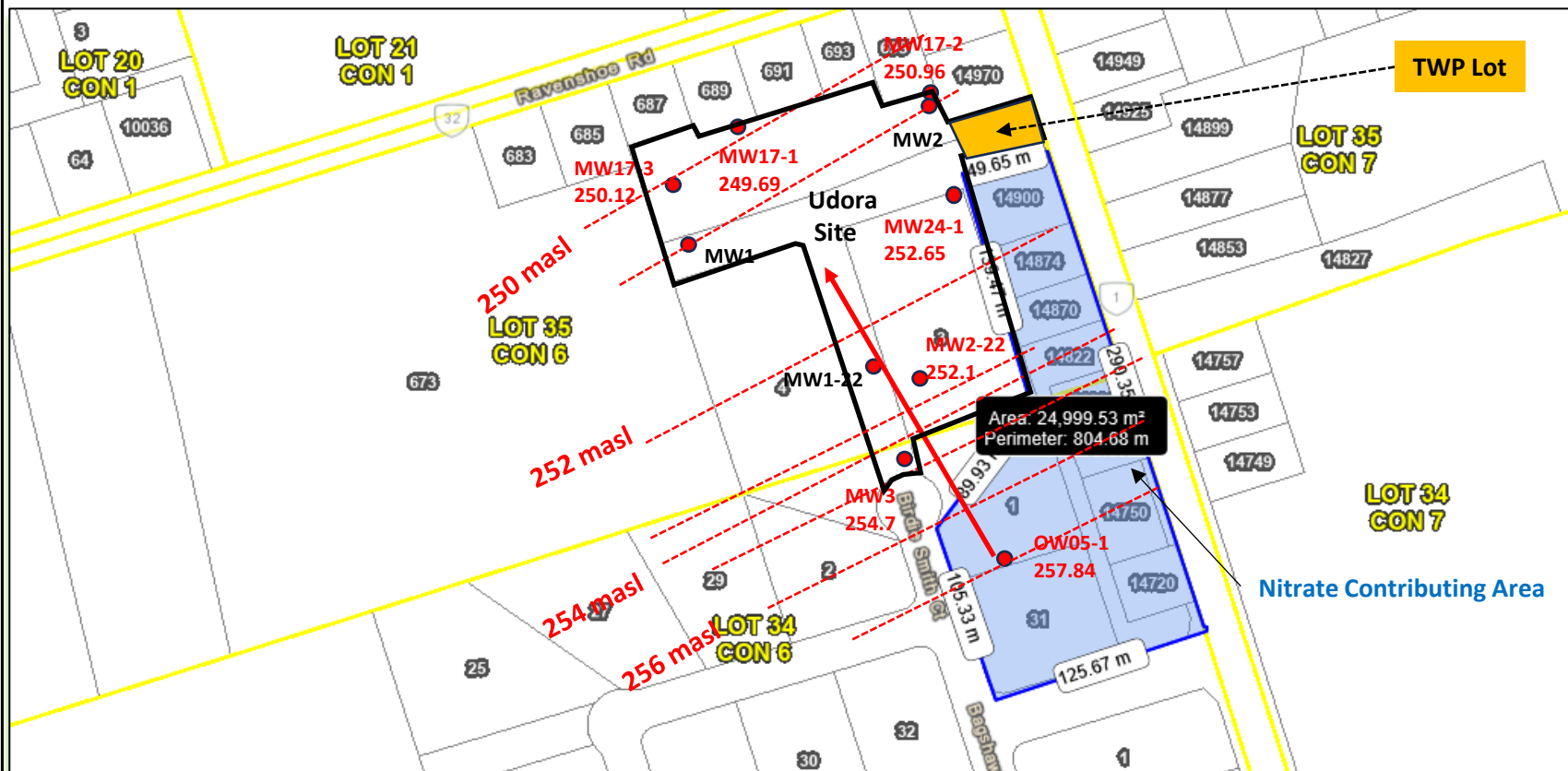
Parameters	UNIT	ODWQS ⁽¹⁾	MW17-1	MW17-2	MW17-3
Sample Date			20-Feb-19	20-Feb-19	20-Feb-19
Calculated Parameters					
Dissolved Nickel (Ni)	mg/L	0.1	<0.00050	<0.00050	0.00075
Dissolved Phosphorus (P)	mg/L	-	<0.050	<0.050	<0.050
Dissolved Potassium (K)	mg/L	-	0.728	0.855	0.819
Dissolved Selenium (Se)	mg/L	0.05 ¹	0.000261	0.00062	0.000205
Dissolved Silicon (Si)	mg/L	-	6.34	6.93	7.67
Dissolved Silver (Ag)	mg/L	0.0015	<0.000050	<0.000050	<0.000050
Dissolved Sodium (Na)	mg/L	200	4.24	4.52	6.55
Dissolved Strontium (Sr)	mg/L	-	0.244	0.278	0.327
Dissolved Thallium (Tl)	mg/L	0.002	<0.000010	<0.000010	<0.000010
Dissolved Titanium (Ti)	mg/L	-	<0.00030	<0.00030	<0.00030
Dissolved Uranium (U)	mg/L	0.02 ¹	0.000305	0.000362	0.000342
Dissolved Vanadium (V)	mg/L	0.0062	<0.00050	0.00075	<0.00050
Dissolved Zinc (Zn)	mg/L	5	0.003	0.0012	0.0146

NOTES

- 1) Superscript indicated a MAC, other values are AO.
- 2) Yellow shading indicates parameter reportable detection limit exceeds ODWQS
- 3) Ontario Drinking Water Quality Standard for use under O.Reg. 169/03 of the Safe Drinking Water Act (2002).

APPENDIX E

SHALLOW SOILS AND GROUNDWATER



NOTES

→ Interpreted direction shallow groundwater

255.1 Groundwater monitor location, designation, and water level
MW3 ● elevation on April 9, 2024.

----- Interpreted Groundwater Contour

MW1 & MW2 & MW1-22 Deep Monitors

Interpreted Shallow Groundwater Table (April 9, 2024)

Udora Estates Water Balance Evaluation,
 Part Lot 35, Con. 6, TWP Uxbridge
 For 2695867 Ontario Inc.

Date: Jan-25 Scale: AS SHOWN

Project: 22012.00 Ref No:

GAMAN Consultants Inc.

Figure

E-1



Slug Test Analysis Report

Project: Hydrgeological Investigation

Number: 181-12360-00

Client: Capris Investments Inc.

Location: Udora Subdivision

Slug Test: MW17-1 DL

Test Well: MW17-1

Test Conducted by: HEC

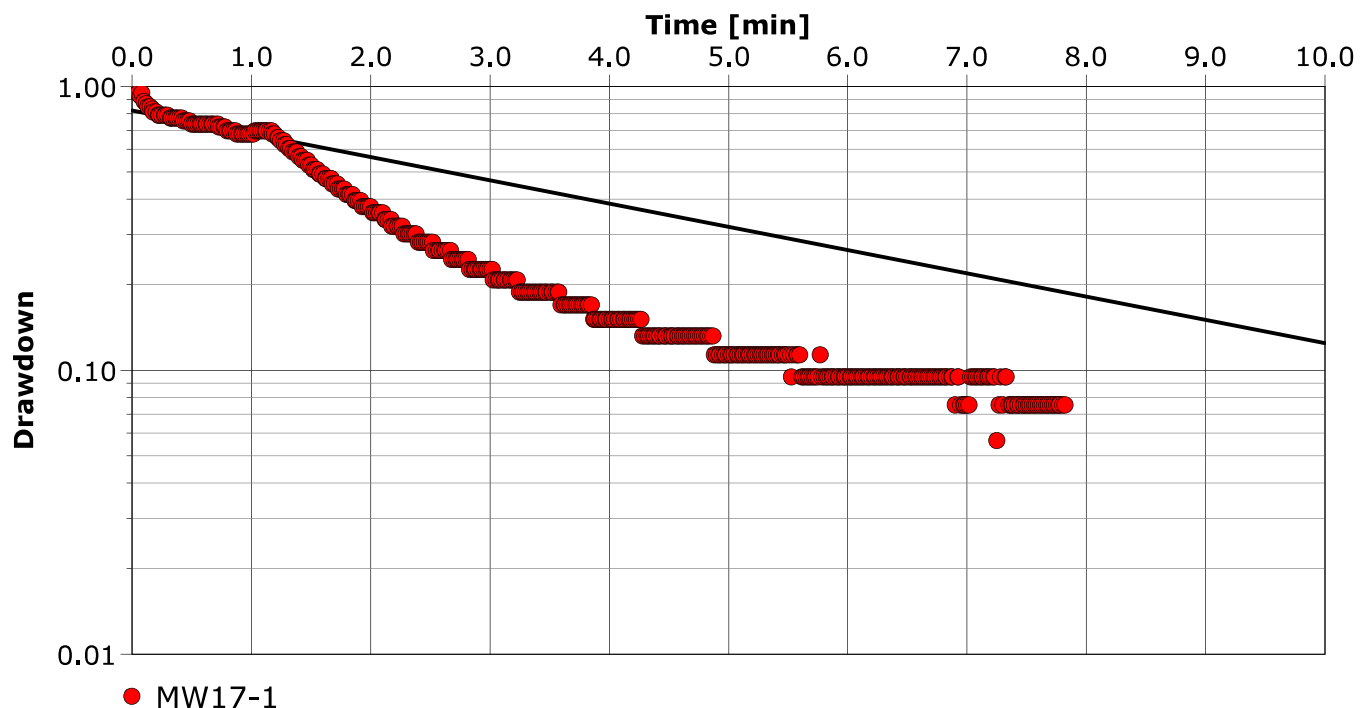
Test Date: 2/20/2019

Analysis Performed by: KJA

MW17-1

Analysis Date: 5/9/2019

Aquifer Thickness: 4.04 m



Calculation using Hvorslev

Observation Well

Hydraulic
Conductivity
[m/s]

MW17-1

1.56×10^{-6}



Slug Test Analysis Report

Project: Hydrgeological Investigation

Number: 181-12360-00

Client: Capris Investments Inc.

Location: Udora Subdivision

Slug Test: MW17-2 Manuals

Test Well: MW17-2

Test Conducted by: HEC

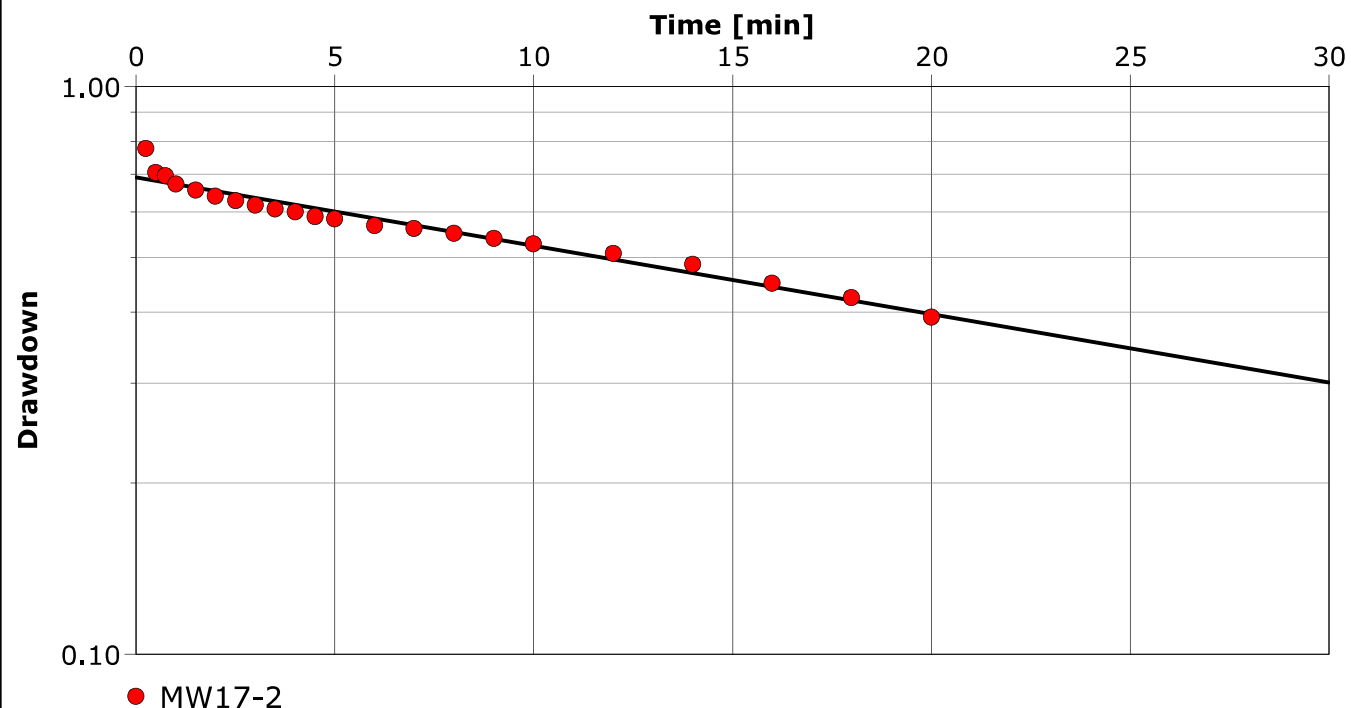
Test Date: 2/20/2019

Analysis Performed by: KJA

MW17-2

Analysis Date: 5/9/2019

Aquifer Thickness: 3.26 m



Calculation using Hvorslev

Observation Well

Hydraulic
Conductivity
[m/s]

MW17-2

2.28×10^{-7}



Slug Test Analysis Report

Project: Hydrgeological Investigation

Number: 181-12360-00

Client: Capris Investments Inc.

Location: Udora Subdivision

Slug Test: MW17-2 DL

Test Well: MW17-2

Test Conducted by: HEC

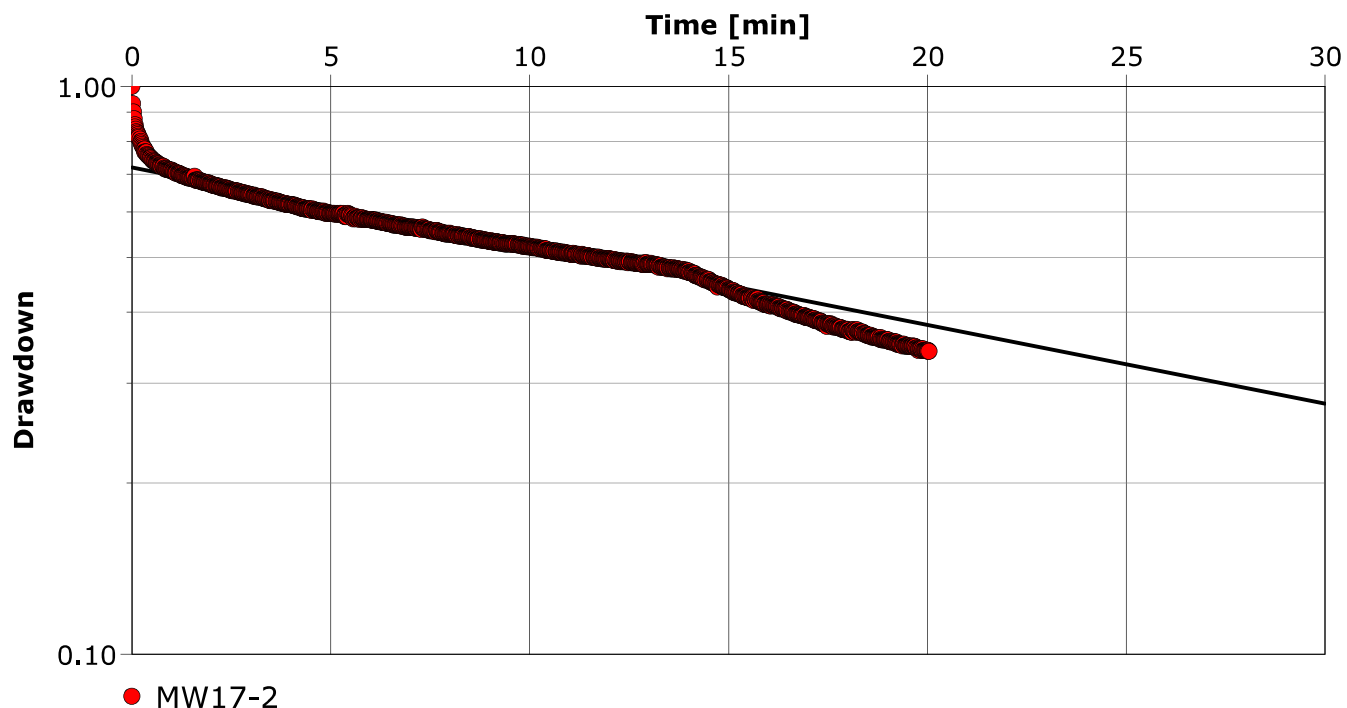
Test Date: 2/9/2019

Analysis Performed by: KJA

MW17-2

Analysis Date: 5/9/2019

Aquifer Thickness: 3.26 m



Calculation using Hvorslev

Observation Well

Hydraulic
Conductivity
[m/s]

MW17-2

2.64×10^{-7}



Slug Test Analysis Report

Project: Hydrgeological Investigation

Number: 181-12360-00

Client: Capris Investments Inc.

Location: Udora Subdivision

Slug Test: MW17-3 Manuals

Test Well: MW17-3

Test Conducted by: HEC

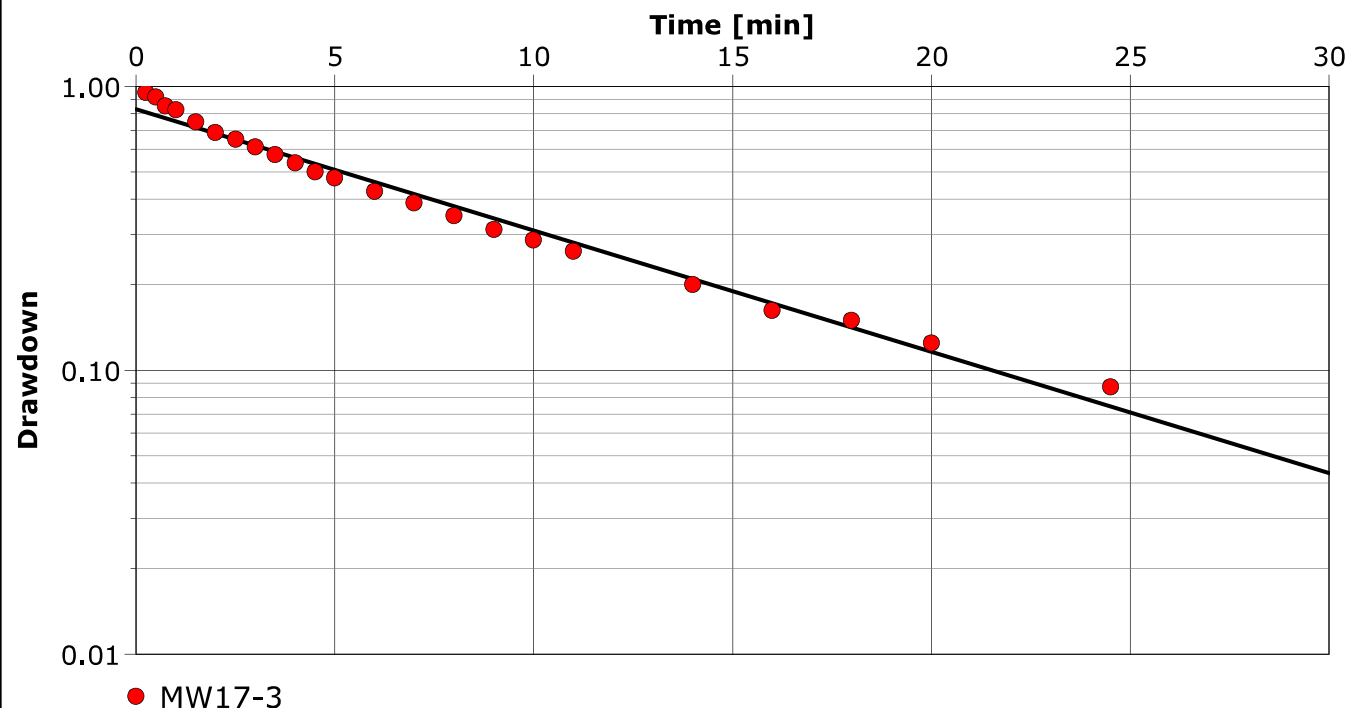
Test Date: 2/20/2019

Analysis Performed by: KJA

MW17-3

Analysis Date: 5/9/2019

Aquifer Thickness: 1.90 m



Calculation using Hvorslev

Observation Well

Hydraulic
Conductivity
[m/s]

MW17-3

8.13×10^{-7}



Slug Test Analysis Report

Project: Hydrgeological Investigation

Number: 181-12360-00

Client: Capris Investments Inc.

Location: Udora Subdivision

Slug Test: MW17-3 DL

Test Well: MW17-3

Test Conducted by: HEC

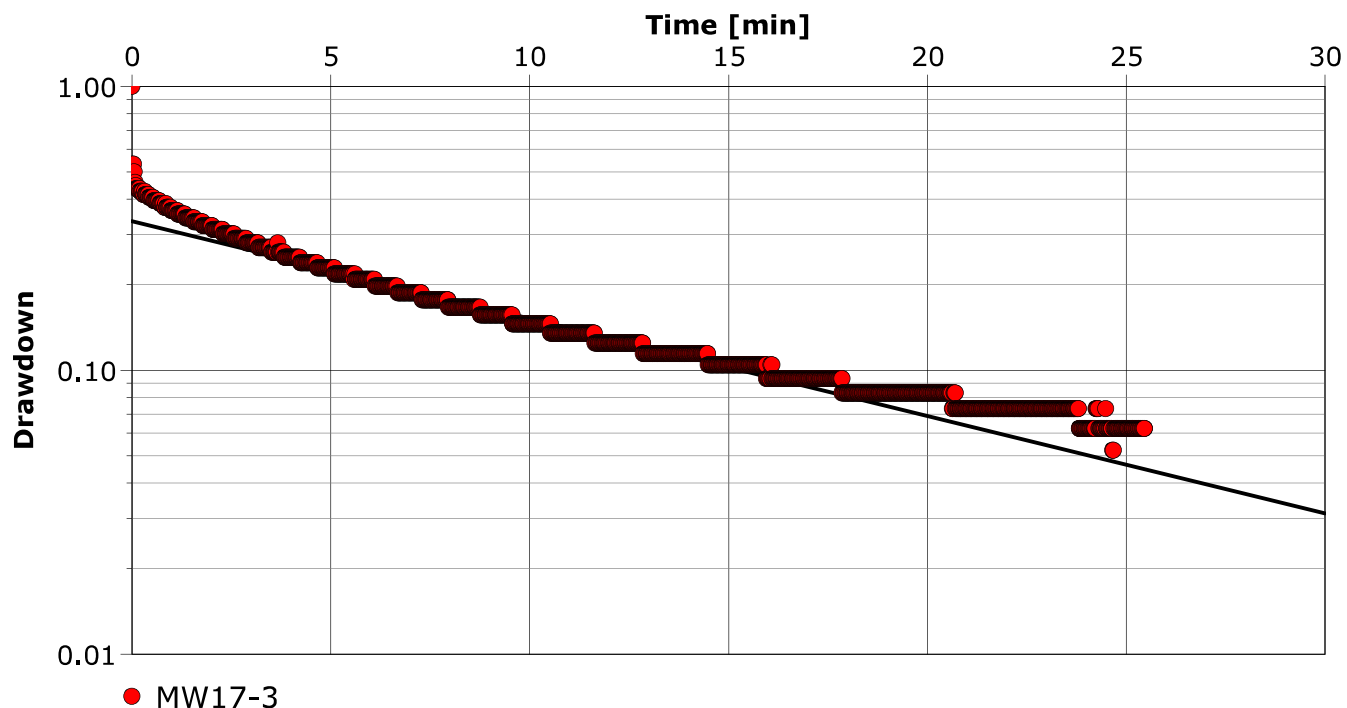
Test Date: 2/20/2019

Analysis Performed by: KJA

MW17-3

Analysis Date: 5/9/2019

Aquifer Thickness: 1.90 m



Calculation using Hvorslev

Observation Well

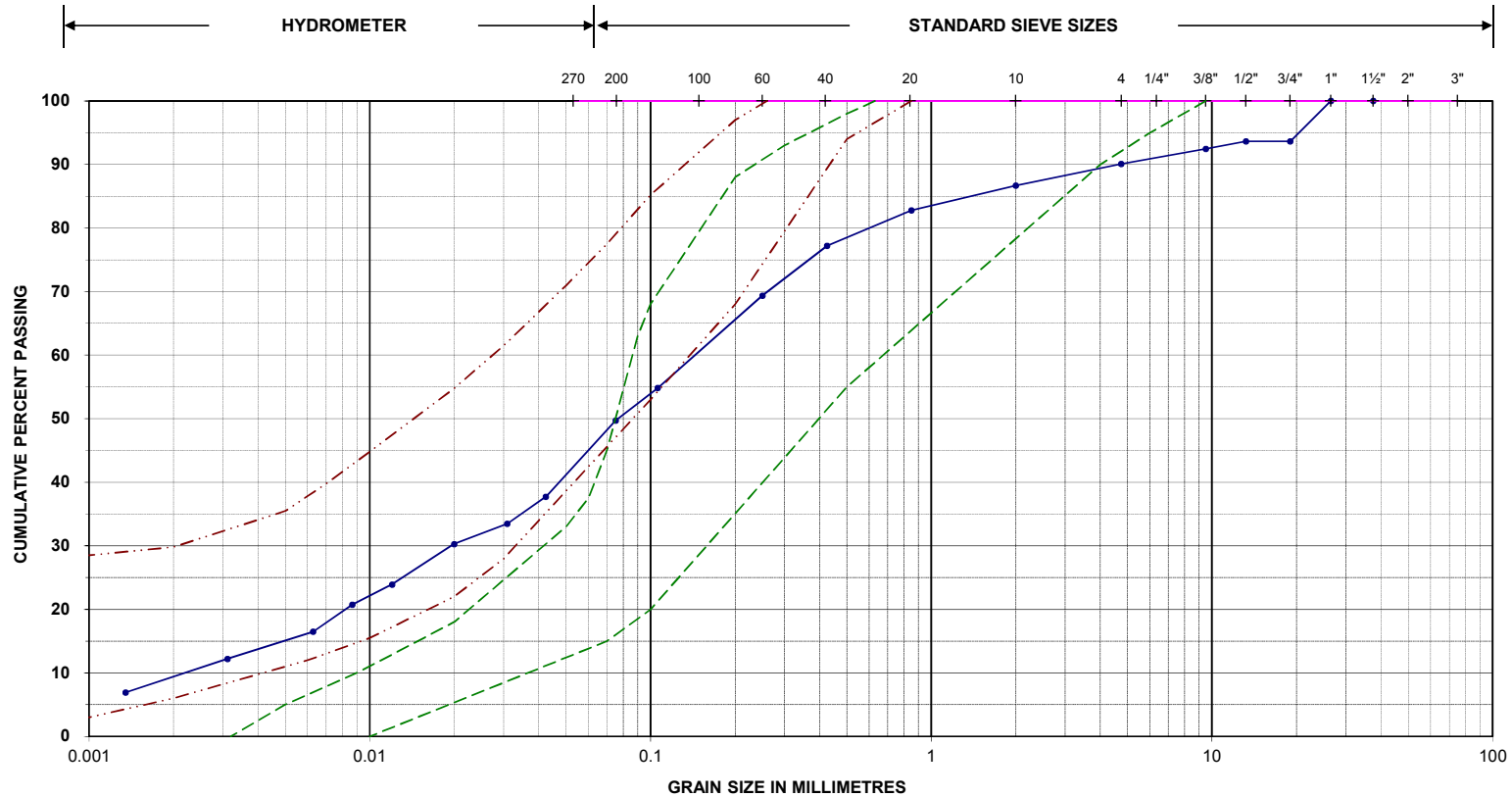
Hydraulic
Conductivity
[m/s]

MW17-3

6.53×10^{-7}



PARTICLE SIZE DISTRIBUTION ASTM D422



Unified Classification System

SILT AND CLAY	SAND	GRAVEL
---------------	------	--------

----- sm envelope T = 8 - 20 min/cm

----- ml envelope T = 20 - 50 min/cm

Estimated T = 25 min/cm

GRAVEL	10	%
SAND	40	%
SILT	43	%
CLAY	7	%

Project Name: Udora Subdivision

Location ID.: TP19-1

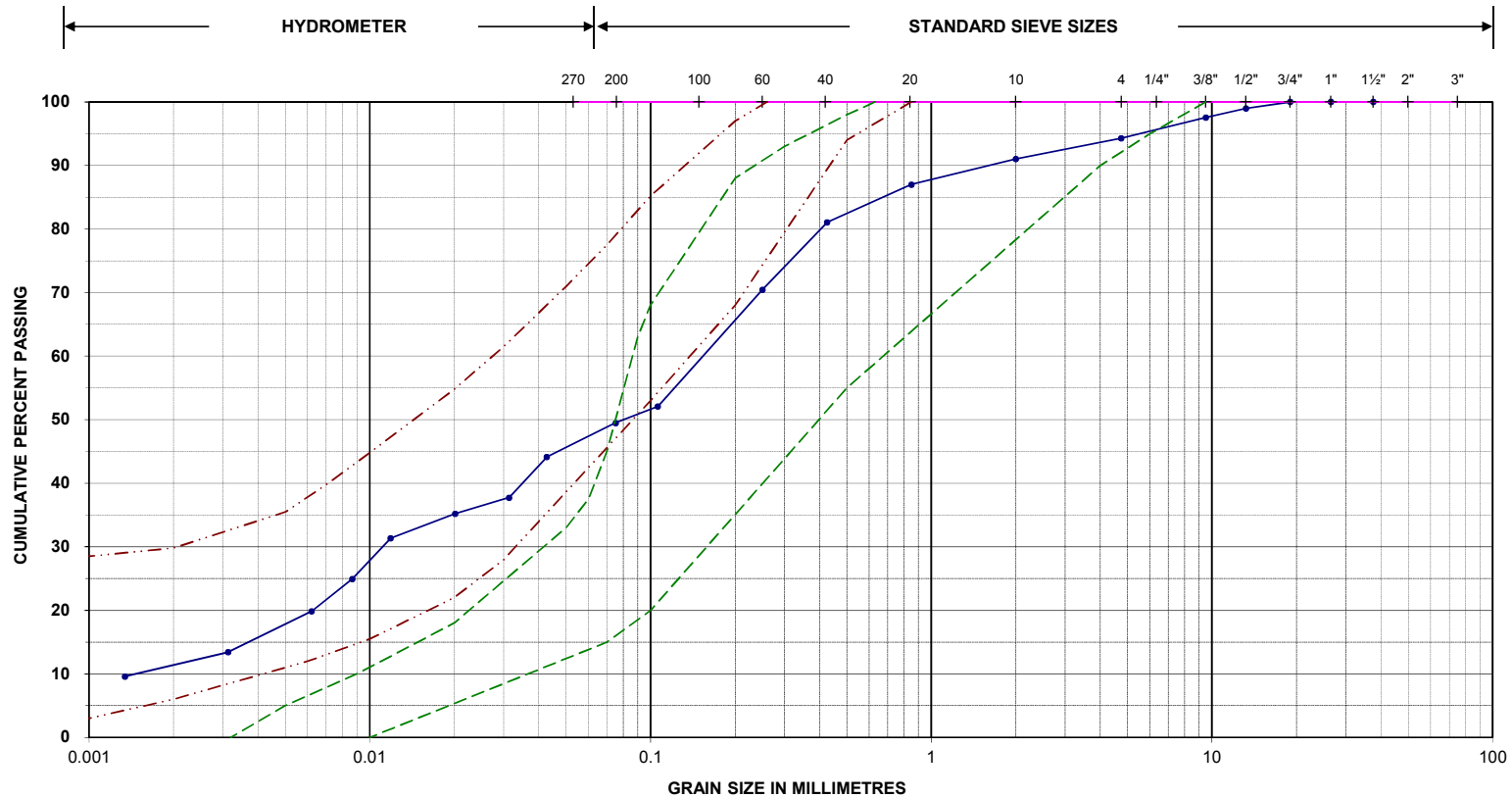
Project No.: 181-12360-00

Sample No./Depth: SS2

Sieve Size	% Passing Coarse	Sieve Size	% Passing Fine	Hydrometer (mm)	% Passing
37.5 mm	100.0	2.00 mm	86.67	0.042	37.7
26.5 mm	100.0	0.850 mm	82.8	0.020	30.3
19.0 mm	93.7	0.425 mm	77.2	0.009	20.7
13.2 mm	93.7	0.250 mm	69.4	0.003	12.2
9.50 mm	92.4	0.106 mm	54.9	0.001	6.9
4.75 mm	90.1	0.075 mm	49.7		



PARTICLE SIZE DISTRIBUTION ASTM D422



Unified Classification System

SILT AND CLAY	SAND	GRAVEL
---------------	------	--------

----- sm envelope T = 8 - 20 min/cm
----- ml envelope T = 20 - 50 min/cm

Estimated T = 25 min/cm

GRAVEL	6	%
SAND	45	%
SILT	40	%
CLAY	10	%

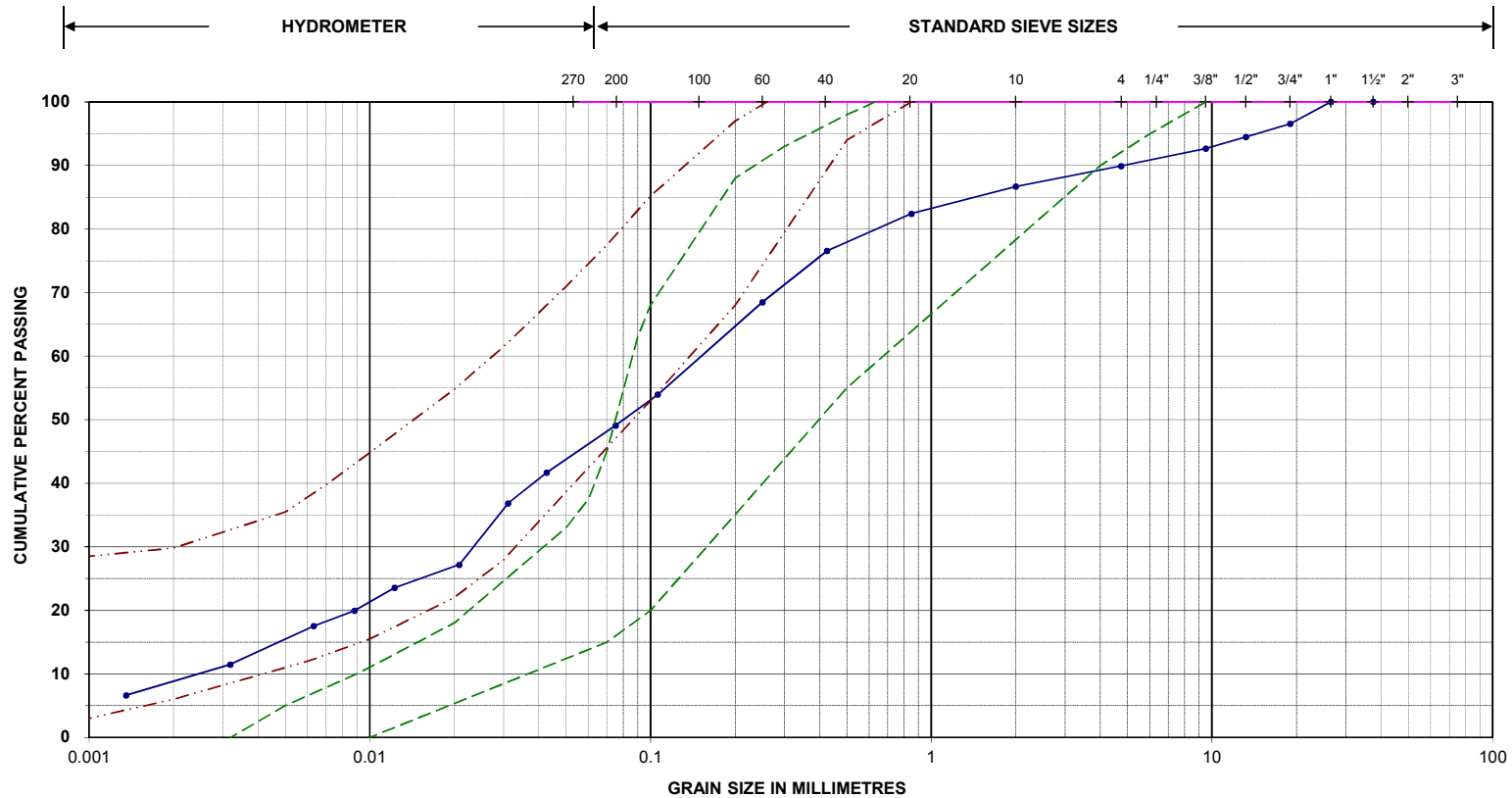
Project Name: Udora Subdivision
Location ID.: TP19-2

Project No.: 181-12360-00
Sample No./Depth: SS1

Sieve Size	% Passing Coarse	Sieve Size	% Passing Fine	Hydrometer (mm)	% Passing
37.5 mm	100.0	2.00 mm	91.02	0.043	44.1
26.5 mm	100.0	0.850 mm	87.0	0.020	35.2
19.0 mm	100.0	0.425 mm	81.1	0.009	24.9
13.2 mm	99.0	0.250 mm	70.4	0.003	13.4
9.50 mm	97.6	0.106 mm	52.1	0.001	9.6
4.75 mm	94.3	0.075 mm	49.5		



PARTICLE SIZE DISTRIBUTION ASTM D422



Unified Classification System

SILT AND CLAY	SAND	GRAVEL
---------------	------	--------

----- sm envelope T = 8 - 20 min/cm
----- ml envelope T = 20 - 50 min/cm

Estimated T = 25 min/cm

GRAVEL	10	%
SAND	41	%
SILT	42	%
CLAY	7	%

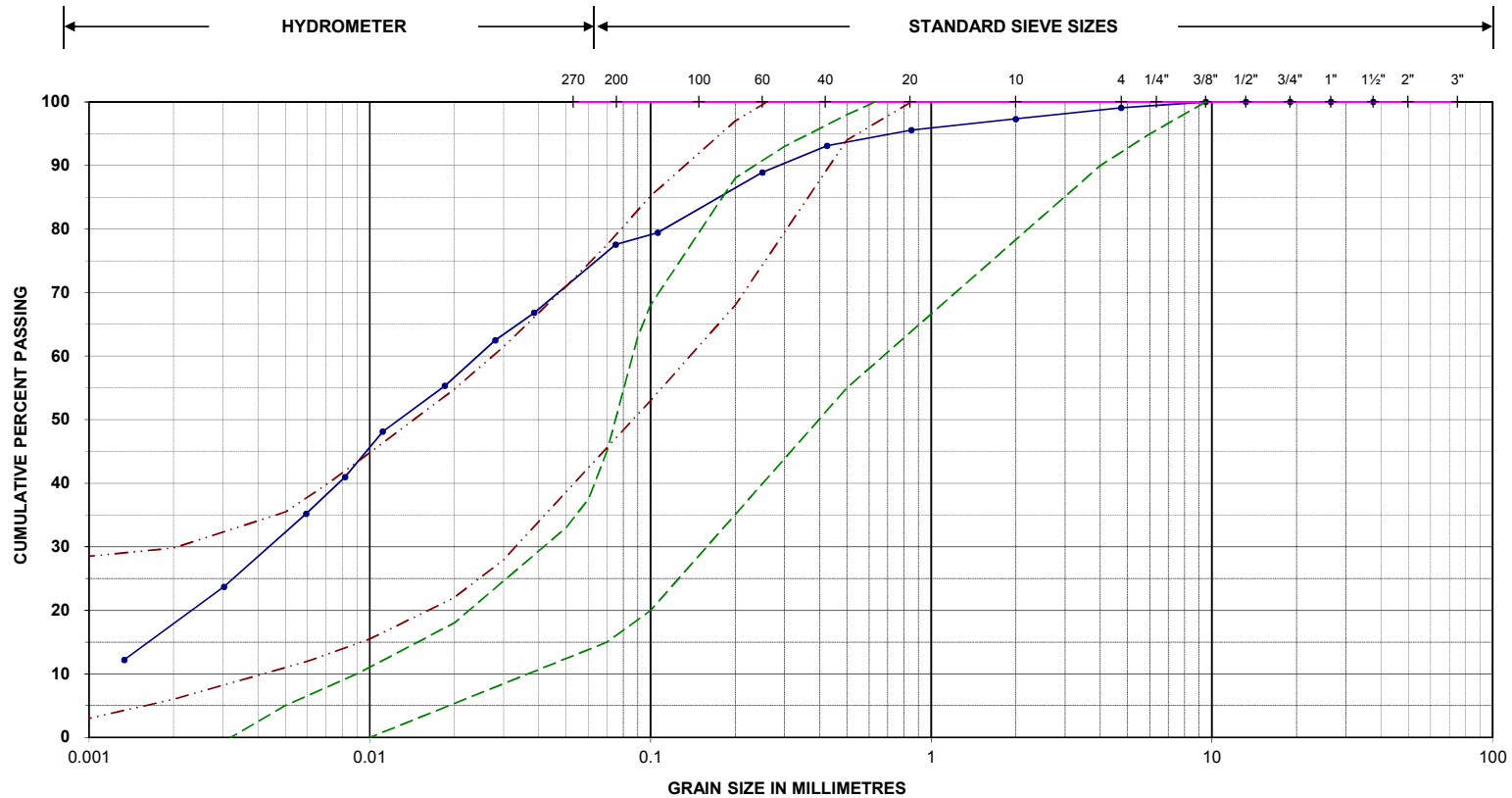
Project Name: Udora Subdivision
Location ID.: TP19-3

Project No.: 181-12360-00
Sample No./Depth: SS1

Sieve Size	% Passing Coarse	Sieve Size	% Passing Fine	Hydrometer (mm)	% Passing
37.5 mm	100.0	2.00 mm	86.69	0.043	41.7
26.5 mm	100.0	0.850 mm	82.4	0.021	27.2
19.0 mm	96.6	0.425 mm	76.6	0.009	19.9
13.2 mm	94.5	0.250 mm	68.5	0.003	11.5
9.50 mm	92.7	0.106 mm	53.9	0.001	6.6
4.75 mm	89.9	0.075 mm	49.1		



PARTICLE SIZE DISTRIBUTION ASTM D422



Unified Classification System

SILT AND CLAY	SAND	GRAVEL
---------------	------	--------

----- sm envelope T = 8 - 20 min/cm

----- ml envelope T = 20 - 50 min/cm

Estimated T = 45 min/cm

GRAVEL	1	%
SAND	22	%
SILT	65	%
CLAY	12	%

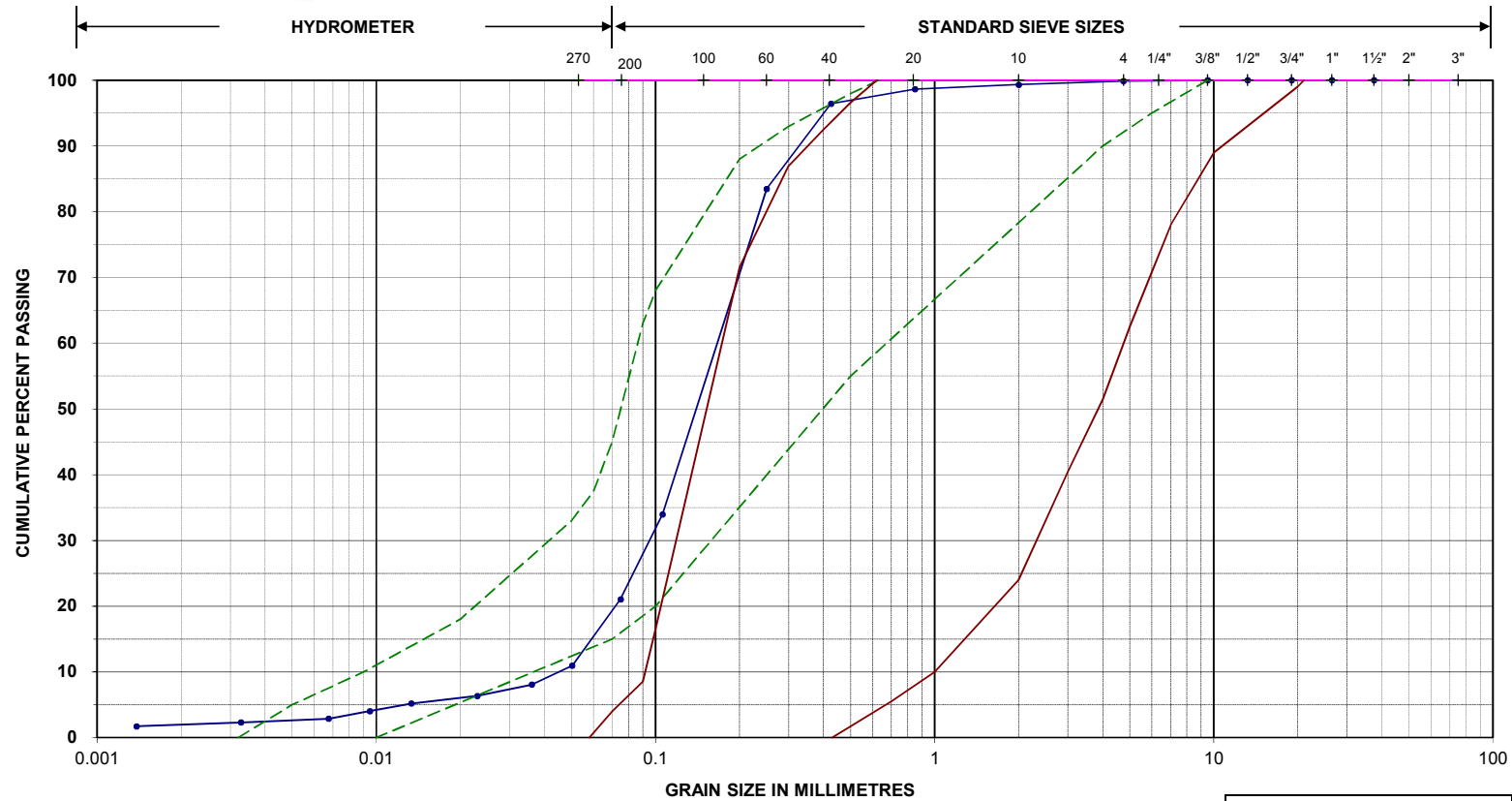
Project Name: Udora Subdivision
Location ID.: TP19-4

Project No.: 181-12360-00
Sample No./Depth: SS1

Sieve Size	% Passing Coarse	Sieve Size	% Passing Fine	Hydrometer (mm)	% Passing
37.5 mm	100.0	2.00 mm	97.32	0.038	66.8
26.5 mm	100.0	0.850 mm	95.6	0.018	55.3
19.0 mm	100.0	0.425 mm	93.1	0.008	41.0
13.2 mm	100.0	0.250 mm	88.9	0.003	23.7
9.50 mm	100.0	0.106 mm	79.4	0.001	12.2
4.75 mm	99.1	0.075 mm	77.6		



PARTICLE SIZE DISTRIBUTION ASTM D422



Unified Classification System

SILT AND CLAY	SAND	GRAVEL
----------------------	-------------	---------------

----- sm envelope T = 8 - 20 min/cm

_____ sp envelope T = 2 - 8 min/cm

Estimated T = 10 min/cm

GRAVEL	0 %
SAND	79 %
SILT	19 %
CLAY	2 %

Project Name: Udora Subdivision

Project No.: 181-12360-00

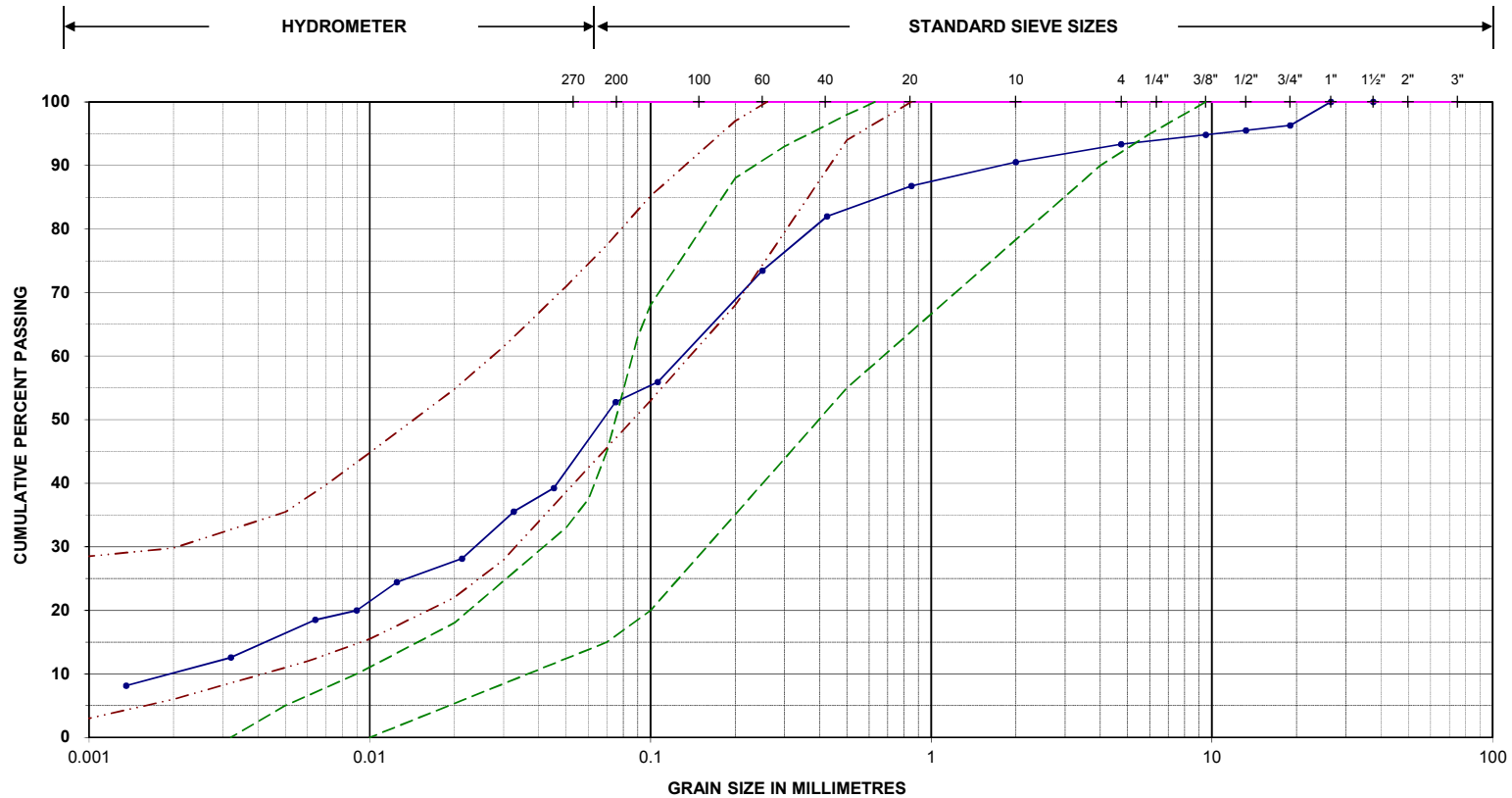
Location ID.: TP19-5

Sample No./Depth: SS2

Sieve Size	% Passing Coarse	Sieve Size	% Passing Fine	Hydrometer (mm)	% Passing
37.5 mm	100.0	2.00 mm	99.33	0.050	10.9
26.5 mm	100.0	0.850 mm	98.6	0.023	6.3
19.0 mm	100.0	0.425 mm	96.4	0.009	4.0
13.2 mm	100.0	0.250 mm	83.5	0.003	2.3
9.50 mm	100.0	0.106 mm	34.0	0.000	1.7
4.75 mm	99.9	0.075 mm	21.1		



PARTICLE SIZE DISTRIBUTION ASTM D422



Unified Classification System

SILT AND CLAY	SAND	GRAVEL
---------------	------	--------

----- sm envelope T = 8 - 20 min/cm
----- ml envelope T = 20 - 50 min/cm

Estimated T = 25 min/cm

GRAVEL	7	%
SAND	41	%
SILT	45	%
CLAY	8	%

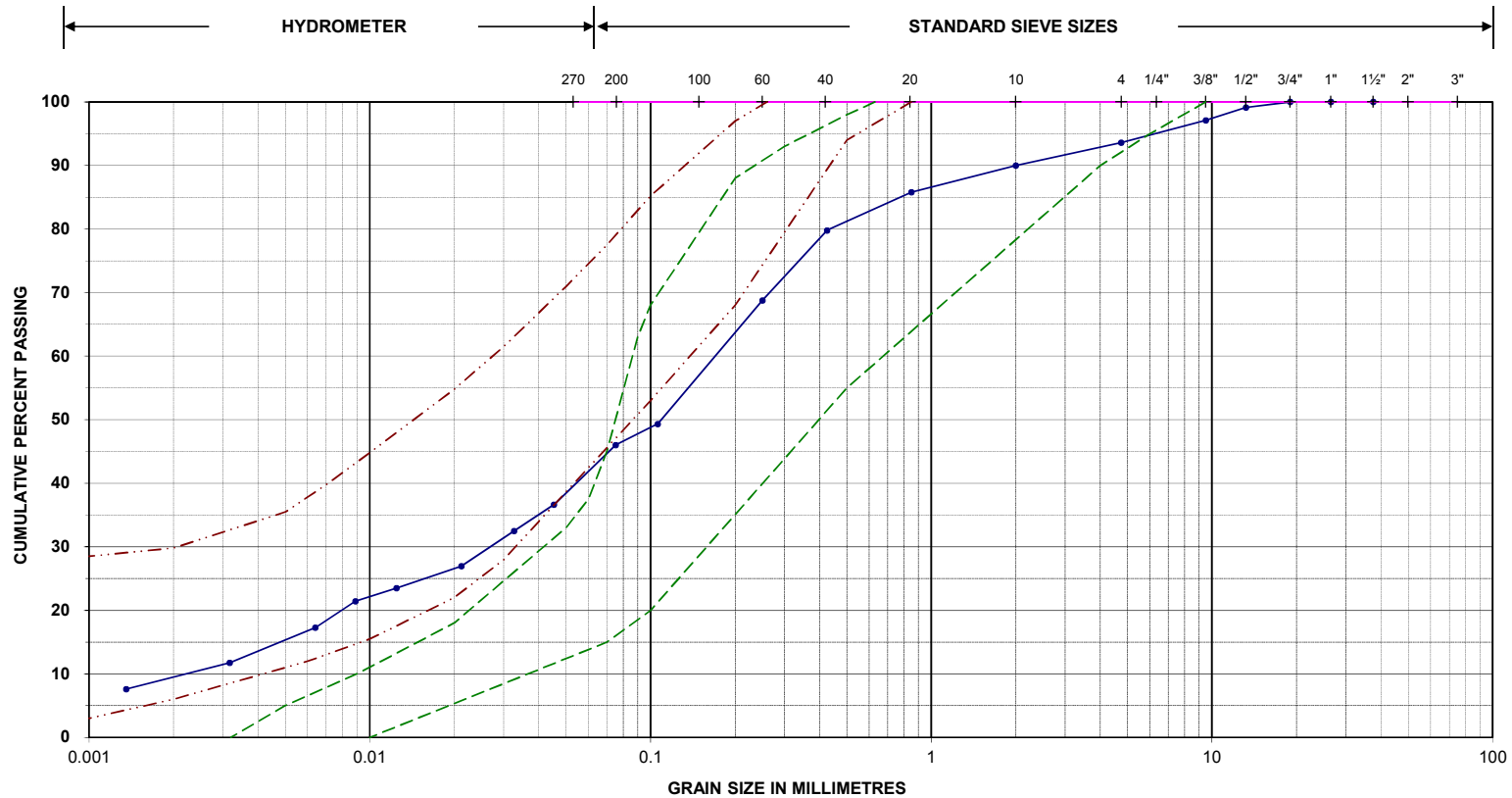
Project Name: Udora Subdivision
Location ID.: TP19-6

Project No.: 181-12360-00
Sample No./Depth: SS1

Sieve Size	% Passing Coarse	Sieve Size	% Passing Fine	Hydrometer (mm)	% Passing
37.5 mm	100.0	2.00 mm	90.52	0.045	39.2
26.5 mm	100.0	0.850 mm	86.8	0.021	28.1
19.0 mm	96.3	0.425 mm	82.0	0.009	20.0
13.2 mm	95.5	0.250 mm	73.4	0.003	12.6
9.50 mm	94.8	0.106 mm	55.9	0.001	8.1
4.75 mm	93.4	0.075 mm	52.8		



PARTICLE SIZE DISTRIBUTION ASTM D422



Unified Classification System

SILT AND CLAY	SAND	GRAVEL
---------------	------	--------

----- sm envelope T = 8 - 20 min/cm

----- ml envelope T = 20 - 50 min/cm

Estimated T = 25 min/cm

GRAVEL	6 %
SAND	48 %
SILT	38 %
CLAY	8 %

Project Name: Udora Subdivision

Location ID.: TP19-7

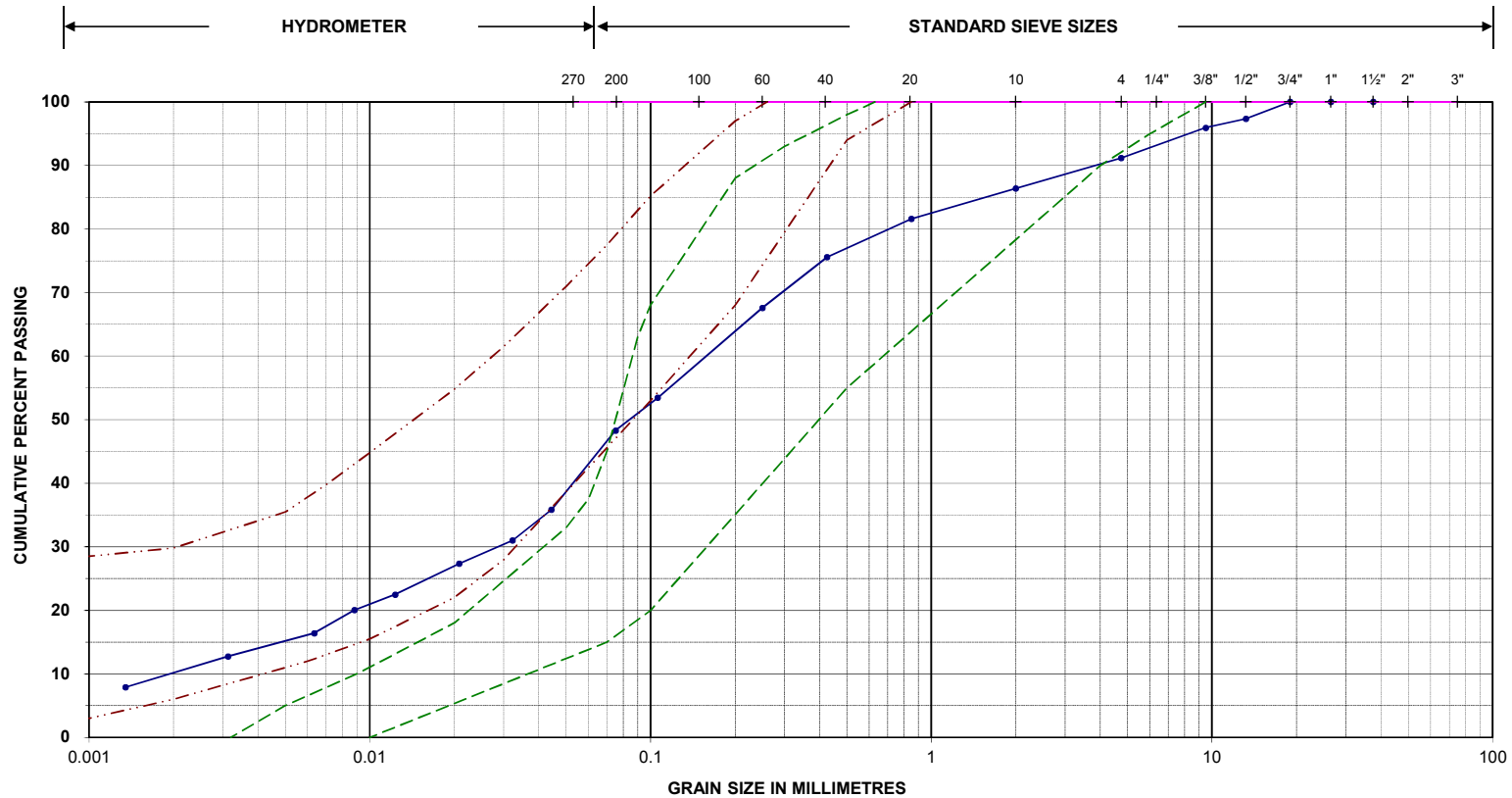
Project No.: 181-12360-00

Sample No./Depth: SS1

Sieve Size	% Passing Coarse	Sieve Size	% Passing Fine	Hydrometer (mm)	% Passing
37.5 mm	100.0	2.00 mm	90.00	0.045	36.6
26.5 mm	100.0	0.850 mm	85.8	0.021	26.9
19.0 mm	100.0	0.425 mm	79.8	0.009	21.4
13.2 mm	99.1	0.250 mm	68.8	0.003	11.7
9.50 mm	97.1	0.106 mm	49.3	0.001	7.6
4.75 mm	93.6	0.075 mm	46.0		



PARTICLE SIZE DISTRIBUTION ASTM D422



Unified Classification System

SILT AND CLAY	SAND	GRAVEL
---------------	------	--------

----- sm envelope T = 8 - 20 min/cm
----- ml envelope T = 20 - 50 min/cm

Estimated T = 25 min/cm

GRAVEL	9 %
SAND	43 %
SILT	40 %
CLAY	8 %

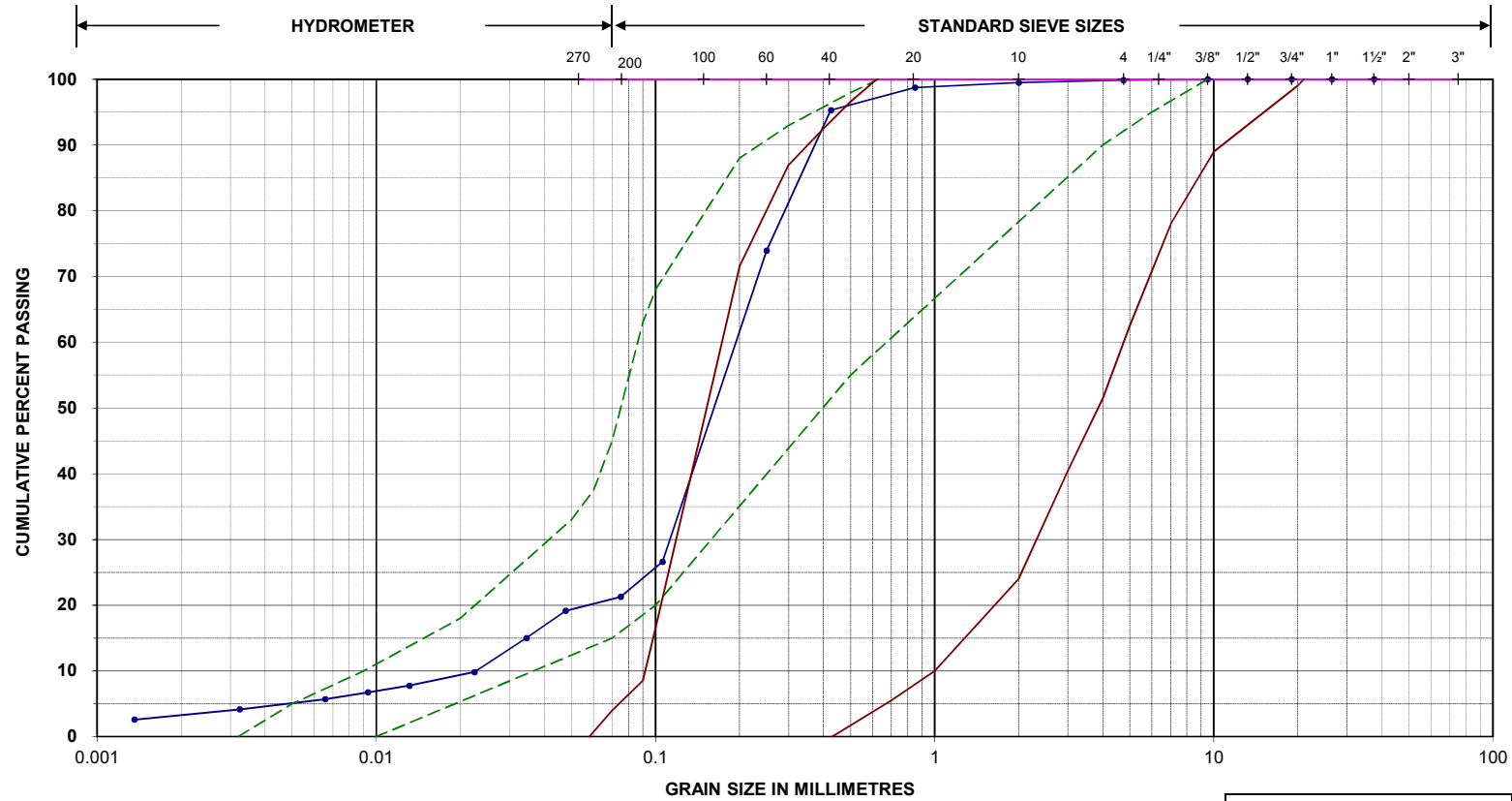
Project Name: Udora Subdivision
Location ID.: TP19-8

Project No.: 181-12360-00
Sample No./Depth: SS1

Sieve Size	% Passing Coarse	Sieve Size	% Passing Fine	Hydrometer (mm)	% Passing
37.5 mm	100.0	2.00 mm	86.39	0.044	35.8
26.5 mm	100.0	0.850 mm	81.6	0.021	27.3
19.0 mm	100.0	0.425 mm	75.6	0.009	20.0
13.2 mm	97.4	0.250 mm	67.6	0.003	12.8
9.50 mm	95.9	0.106 mm	53.5	0.001	7.9
4.75 mm	91.2	0.075 mm	48.3		



PARTICLE SIZE DISTRIBUTION ASTM D422



Unified Classification System

SILT AND CLAY	SAND	GRAVEL
----------------------	-------------	---------------

----- sm envelope T = 8 - 20 min/cm

_____ sp envelope T = 2 - 8 min/cm

Estimated T = 15 min/cm

GRAVEL	0 %
SAND	79 %
SILT	19 %
CLAY	3 %

Project Name: Udora Subdivision

Project No.: 181-12360-00

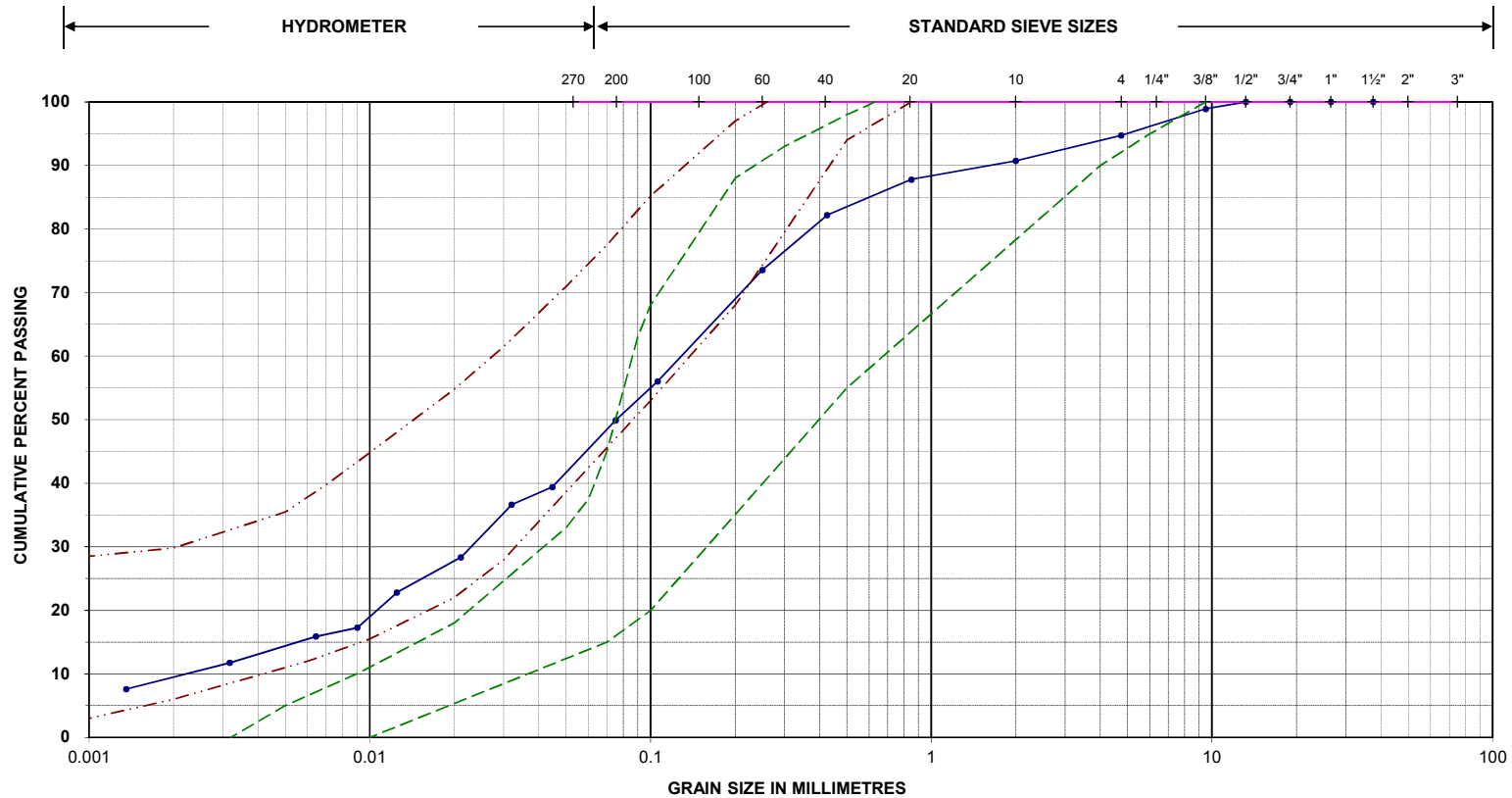
Location ID.: TP19-9

Sample No./Depth: SS1

Sieve Size	% Passing Coarse	Sieve Size	% Passing Fine	Hydrometer (mm)	% Passing
37.5 mm	100.0	2.00 mm	99.48	0.048	19.2
26.5 mm	100.0	0.850 mm	98.7	0.022	9.8
19.0 mm	100.0	0.425 mm	95.3	0.009	6.7
13.2 mm	100.0	0.250 mm	73.9	0.003	4.1
9.50 mm	100.0	0.106 mm	26.6	0.000	2.6
4.75 mm	99.9	0.075 mm	21.3		



PARTICLE SIZE DISTRIBUTION ASTM D422



Unified Classification System

SILT AND CLAY	SAND	GRAVEL
---------------	------	--------

----- sm envelope T = 8 - 20 min/cm

----- ml envelope T = 20 - 50 min/cm

Estimated T = 25 min/cm

GRAVEL	5 %
SAND	45 %
SILT	42 %
CLAY	8 %

Project Name: Udora Subdivision

Location ID.: TP19-10

Project No.: 181-12360-00

Sample No./Depth: SS1

Sieve Size	% Passing Coarse	Sieve Size	% Passing Fine	Hydrometer (mm)	% Passing
37.5 mm	100.0	2.00 mm	90.74	0.045	39.4
26.5 mm	100.0	0.850 mm	87.8	0.021	28.3
19.0 mm	100.0	0.425 mm	82.2	0.009	17.3
13.2 mm	100.0	0.250 mm	73.5	0.003	11.8
9.50 mm	98.9	0.106 mm	56.1	0.001	7.6
4.75 mm	94.7	0.075 mm	49.9		



TABLE E-1: TEST PIT LOGS

181-12360-00
Udora Subdivision
Capris Investments Inc.
May 3, 2019

<u>Depth</u>	<u>Description</u>
TP19-1	
0.00 – 0.20 m	Black topsoil, silt, some sand, trace gravel, with organic material, compact, and wet.
0.20 – 0.50 m	Grey sandy silt fill, some clay and gravel, compact and wet.
0.50 – 0.80 m	Black topsoil, silt, some sand, trace gravel, with organic material, compact, and wet.
0.80 – 2.00 m	Silt and sand, some gravel and clay, boulders, compact and wet. — Sample SS1 taken at 0.40 m — Sample SS2 taken at 2.00 m — Test pit open and wet at 2.00 m — Groundwater seepage encountered at 1.80 m
TP19-2	
0.00 – 0.50 m	Black topsoil, trace gravel and boulders, with organic material, wet and loose.
0.50 – 1.20 m	Grey sand and silt, some clay and gravel, orange mottling, compact and wet.
1.20 – 2.00 m	Grey, silty gravel, some boulders, wet and loose. — Sample SS1 taken at 1.00 m — Sample SS2 taken at 2.00 m — Test pit caving and wet at 2.00 m — Groundwater seepage encountered at 0.70 m

Unit 2
126 Don Hillock Drive
Aurora, ON, Canada L4G 0G9

T: 905 750-3080
wsp.com

TP19-3

0.00 – 1.00 m	Black topsoil, silt, trace sand, with organic material, wet, loose, some debris present.
1.00 – 1.10 m	Concrete slab.
1.10 – 2.00 m	Grey silt and sand, some gravel and clay, trace boulders, orange mottling, compact and wet.
	— Sample SS1 taken 2.00 m — Test pit caving and wet at 2.00 m — Groundwater seepage encountered at 1.00 m

TP19-4

0.00 – 0.20 m	Black topsoil, silt, trace sand, with organic material, compact and wet.
0.20 – 2.00 m	Grey silt and sand, some gravel and clay, orange mottling, compact and wet, debris encountered at top of layer.
	— Sample SS1 taken at 2.00 m — Test pit caving and wet at 2.00 m — Groundwater seepage encountered at 0.30 m — Car debris encountered at 0.30 m

TP19-5

0.00 – 0.25 m	Dark brown topsoil, silty sand, with organic material, loose, wet, debris present.
0.25 – 2.00 m	Half of the test pit found to be grey, gravelly silt, trace clay, compact and wet. Other half of the test pit found to be brown sand, some silt, trace clay, loose and wet.
	— Sample SS1 taken at 2.00 m — Sample SS2 taken at 2.00 m — Test pit caving and wet at 2.00 m — Groundwater seepage encountered at 1.50 m

TP19-6

0.00 – 0.20 m	Brown topsoil, silty sand, some gravel, with organic material, debris present.
0.20 – 2.00 m	Silt and sand, trace clay and gravel, some boulders, compact and dry;
	— Sample SS1 taken at 2.00 m — Test pit open and dry at 2.00 m

TP19-7

- | | |
|---------------|---|
| 0.00 – 0.30 m | Black topsoil, silty sand with organic material, loose and wet. |
| 0.30 – 2.00 m | Grey silty sand, trace clay and gravel, some boulders, compact and dry. <ul style="list-style-type: none"> — Sample SS1 taken at 2.00 m — Test pit open and dry at 2.00 m |

TP19-8

- | | |
|---------------|---|
| 0.00 – 0.40 m | Black topsoil, silty sand with organic material, loose and wet. |
| 0.40 – 2.00 m | Grey sand and silt, trace gravel and clay, some boulders, compact and dry. <ul style="list-style-type: none"> — Sample SS1 taken at 2.00 m — Test pit caving and wet at 2.00 m — Groundwater seepage encountered at 0.40 m |

TP19-9

- | | |
|---------------|---|
| 0.00 – 0.30 m | Black topsoil, silty sand with organic material, loose, moist. |
| 0.30 – 0.70 m | Brown sand with some silt, trace clay, loose and moist. |
| 0.70 – 2.00 m | Grey gravelly silt, trace sand and clay, orange mottling, compact and wet. <ul style="list-style-type: none"> — Sample SS1 taken at 0.70 m — Sample SS2 taken at 2.00 m — Test pit caving and wet at 2.00 m — Groundwater seepage encountered at 0.70 m |

TP19-10

- | | |
|---------------|--|
| 0.00 – 0.30 m | Black topsoil, silty sand with organic material, loose and dry. |
| 0.30– 2.00 m | Gravelly sand and silty, trace clay and gravel, some boulders, orange mottling, compact and wet. <ul style="list-style-type: none"> — Sample SS1 taken at 2.00 m — Test pit open and wet at 2.00 m |

TABLE E-2 GROUNDWATER LEVELS

Project: Udora Estates Water Balance Evaluation (22012.00)

	MW17-1 (A -235172)*			MW17-2			MW17-3			MW1 (A-206394)			MW2			MW3		
Date	Water level (mbtoc)	Water level (mbgl)	Water level Elev. (masl)	Water level (mbtoc)	Water level (mbgl)	level Elev. (masl)	Water level (mbtoc)	Water level (mbgl)	level Elev. (masl)	Water level (mbtoc)	Water level (mbgl)	level Elev. (masl)	Water level (mbtoc)	Water level (mbgl)	level Elev. (masl)	Water level (mbtoc)	Water level (mbgl)	level Elev. (masl)
10-Dec-22	2.65	1.84	248.10	3.71	2.85	248.91	2.81	1.99	249.11	10.32	9.37	243.1	12.39	11.48	240.3	8.06	7.17	252.1
20-Mar-23	1.20	0.39	249.54	1.63	0.81	250.99	1.82	1.00	250.10	10.61	9.66	242.8	11.40	10.49	241.3	5.49	4.60	254.6
20-Apr-23	1.08	0.27	249.66	1.65	0.70	250.97	2.15	1.33	249.77	10.52	9.57	242.9	11.16	10.25	241.6	5.10	4.21	255.0
19-May-23	1.83	1.02	248.91	2.13	1.22	250.49	2.52	1.70	249.40	10.89	9.94	242.6	11.54	10.63	241.2	5.58	4.69	254.5
20-Jul-23	2.62	1.81	248.12	na	na	na	3.04	2.22	248.88	dry	na	na	na	na	na	6.89	6.00	253.2
4-Nov-23	4.13	3.32	246.61	5.27	4.51	247.35	4	3.18	247.92	12.42	11.47	241.0	12.75	11.84	240.0	8.50	7.61	251.6
16-Mar-24	1.05	0.24	249.69	1.72	0.72	250.90	1.67	0.85	250.25	11.09	10.14	242.4	11.52	10.61	241.2	6.14	5.25	254.0
9-Apr-24	1.06	0.25	249.69	1.66	1.66	250.96	1.8	0.98	250.12	10.94	9.99	242.5	11.26	10.35	241.5	5.39	4.50	254.7
6-May-24	1.10	0.29	249.64	0.69	0.69	251.93	2	1.18	249.92	11.73	10.78	241.7	11.02	10.11	241.7	5.05	4.16	255.1
27-Jul-24	2.09	1.28	248.65	2.39	2.39	250.23	2.63	1.81	249.29	11.25	10.30	242.2	11.44	10.53	241.3	6.70	5.81	253.4
30-Sep-24	3.32	2.51	247.42	4.03	4.03	248.59	3.36	2.54	248.56	12.14	11.19	241.3	12.28	11.37	240.4	7.54	6.65	252.6
9-Nov-24	3.72	2.91	247.02	4.77	4.77	247.85	3.71	2.89	248.21	7.23	6.28	246.2	12.56	11.65	240.2	8.13	7.24	252.0

TABLE E-2 GROUNDWATER LEVELS

Project: Udora Estates Water Balance Evaluation (22012.00)

	MW1-22 (A-351957)			MW2-22			MW24-1			OW5-1		
Date	Water level (mbtoc)	Water level (mbgl)	level Elev. (masl)	Water level (mbtoc)	Water level (mbgl)	Water level Elev. (masl)	Water level (mbtoc)	Water level (mbgl)	Water level Elev. (masl)	Water level (mbtoc)	Water level (mbgl)	Water level Elev. (masl)
10-Dec-22	6.51	5.75	248.88	9.56	8.56	249.31						
20-Mar-23	4.74	3.98	250.65	6.93	5.93	251.94						
20-Apr-23	4.57	3.81	250.82	6.08	5.08	252.80						
19-May-23	4.80	4.04	250.59	6.54	5.54	252.33						
20-Jul-23	5.84	5.08	249.55	9.04	8.04	249.83						
4-Nov-23	7.05	6.29	248.34	9.57	8.57	249.30						
16-Mar-24	5.67	4.91	249.72	7.43	6.43	251.44	6.11	5.22	251.91	1.33	0.63	257.91
9-Apr-24	5.44	4.68	249.95	6.78	5.78	252.09	5.37	4.48	252.65	1.40	0.70	257.84
6-May-24	5.03	4.27	250.36	6.05	5.05	252.82	4.71	3.82	253.31	1.50	0.80	257.74
27-Jul-24	5.87	5.11	249.52	7.06	6.06	251.81	5.90	5.01	252.12	1.96	1.26	257.28
30-Sep-24	7.88	7.12	247.51	8.56	7.56	250.31	7.42	6.53	250.60	2.85	2.15	256.39
9-Nov-24	7.23	6.47	248.16	9.35	8.35	249.52	8.10	7.21	249.92	3.30	2.60	255.94

Table E-3 Monitor Well Details**Project: Udora Estates Water Balance Evaluation (22012.00)**

Monitor Details				
Monitor	Well Depth (mbgl)	Casing Stickup (magl)	PVC Casing Elev.	Ground Elev.
MW17-1 (A-235172)	6.10	0.81	250.74	249.93
MW17-2	6.10	0.86	252.62	251.76
MW17-3	4.60	0.82	251.92	251.10
MW1	15.30	0.95	253.45	252.50
MW2	16.90	0.91	252.71	251.80
MW3	15.90	0.89	260.12	259.23
MW1-22 (A-351957)	12.19	0.76	255.39	254.63
MW2-22	12.19	1.17	258.87	257.70
OW05-1	8.62	0.7	259.24	258.54
MW24-1	10.67	0.89	257.13	256.24

GPS Survey 2024 (Envision Consultants)