HYDROGEOLOGIC EVALUATION
PROPOSED COMMERCIAL DEVELOPMENT
5639 BANK STREET
COMMUNITY OF GREELY
CITY OF OTTAWA

Prepared For:
OTIS Group of Companies

Project 2012-08
July 18, 2012

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1.0 INTRODUCTION

It is proposed to establish a commercial development on the easternmost 4.9ha portion of a 13.7 hectare (approximate) parcel of land located within part of Lot 1, Concession 5, Geographic Township of Osgoode. The balance of the property is intended to be utilized for sewage disposal and, where possible, future development. Figure 1 shows the location and layout of the proposed development.

The proposed development will be serviced by on-site wells and subsurface sewage disposal systems.

Soil conditions were established by a Geotechnical Site Assessment completed by BAE and Associates (BAE) in April 2012. Relevant excerpts from the April 18, 2012 BAE report are incorporated and appended to this report. Supplementary shallow groundwater information was subsequently obtained from three monitoring wells installed under the supervision of BAE.

To establish groundwater potential, groundwater quality, interference potential and aquifer security for the property, three test wells were drilled on the site during May 2012 and were subjected to formal testing June 13 and 19, 2012.

This report provides a summary of hydrogeologic conditions as determined from the BAE study and the subsequent hydrogeologic field investigations. This report also provides an analysis of water supply potential under Ministry of the Environment (MOE) Procedure D-5-5 "Technical Guideline For Private Wells" and a summary of sewage disposal criteria under the MOE "Design Guidelines for Sewage Works 2008". Ministry of the Environment Procedure D-5-4 "Technical Guideline For Individual On-Site Sewage Systems" is not applicable to this site as the design sewage flow for the commercial development will exceed 10,000L/day, with the parcel remaining under single ownership.

2.0 SITE SETTING, GEOLOGY AND HYDROGEOLOGY

2.1 Site Setting:

The subject lands are located on a rectangular parcel of land situated at the northern periphery of the Community of Greely, at the southwest corner of the intersection of Bank Street and Mitch Owens Road.

The subject lands are currently vacant, and were previously utilized as a gravel pit (below watertable in the central part of the site). It is understood that much of the gravel pit has been backfilled with a sandy silt fill derived from pond excavations at a site near Airport Parkway and Hunt Club Road to the north.

The overall relief of the site is relatively shallow, with an overall slope from west-to-east within the backfilled gravel pit area. However, the central-north and central-south property boundaries remain as steep pit faces, with undisturbed higher lands immediately north and south, these faces associated with a mapped abandoned raised beach trending north-south through the site. The western and eastern peripheries of the site are at the same elevation as the undisturbed surroundings.

Lands to the south and west of the site are in residential use, lands to the north remain in aggregate extractive use, and lands to the east are undeveloped except for a school to the immediate northeast and some scattered commercial properties.

Apart from several extracted ponds at local gravel pits, the closest natural surface water body is the North Castor River about 1.5km to the south.

2.2 Geology and Hydrogeology:

The subject lands are located within the North Gower Drumlin Field physiographic region of southern Ontario, a drumlin field occupying much of the southern periphery of the City of Ottawa. According to Ontario Geological Survey Map 2556, the upper soils across the site mainly consist of glaciofluvial ice contact deposits of gravel and sand associated with the mapped abandoned raised beach, with glaciomarine deposits of sand and gravel mapped to the immediate west.

According to local water well records, mainly from wells located at the residential homes to the immediate south and west, the thickness of the undisturbed overburden in the close vicinity of the site is 15 to 27m. The thickest portion of the overburden appears to be along the north-south axis of the mapped abandoned raised beach trending through the centre of the site. The records for the three test wells located on-site indicate an overburden thickness of 14.6 to 15.8m, consistent with wells to the west and east of the site. The overburden is reported to consist primarily of granular deposits of sand and/or gravel. The records for the on-site test wells also reflect the fine-grained backfill used throughout much of the former gravel pit site, particularly the central and western portions of the site.

The bedrock beneath the site consists of dolostone and sandstone of the Beekmantown Group of rock.

Figures 2 and 3 are schematic cross-sections illustrating the overburden and upper bedrock geologic sequence. Figure 9 shows the location of the cross-sections.

The bedrock is the most commonly utilized source of potable groundwater in the area. Of the 92 reported wells within the same Township lot as the proposed development (i.e. Lot 1, Concession 5, Osgoode), 78 wells (85%) are reported to be completed in the bedrock. The remaining 14 wells are completed in gravel deposits in the lower overburden. Extracts from the MOE water well record database are included in the appendix.

3.0 WELL CONSTRUCTION

3.1 Test Well 1 (East):

The following information is derived from the water well record prepared by the drilling contractor, Canadian Soil Drilling. A copy of the water well record is included in the appendix. Figure 9 shows the location of the well.

Date of construction: May 2012

Contractor's Log of Formations Penetrated:

Depth (m)	Materials
0 - 14.6	sand and gravel with boulders
14.6 - 47.6	grey limestone
47.6 - 61.0	white sandstone with grey limestone

Water was reported by the contractor to have been located in the sandstone below a depth of 50.0m.

Casing Record:

Casing length:	19.5m
Casing setting:	0.6m above grade to 18.9m below grade
Casing diameter:	15.88cm ID
Wall thickness:	0.48cm
Material:	steel
Bedrock Open Hole:	18.9 to 61.0m
Annular Seal:	Bentonite slurry from grade to 15.9m Neat cement from 15.9m to 18.9m

3.2 Test Well 2 (Central):

The following information is derived from the water well record prepared by the drilling contractor, Canadian Soil Drilling. A copy of the water well record is included in the appendix. Figure 9 shows the location of the well.

Date of construction: May 2012

Contractor's Log of Formations Penetrated:

Depth (m)	Materials
0 - 4.9	clay with boulders
4.9 - 14.6	sand and gravel with boulders
14.6 - 51.8	grey limestone
51.8 - 57.9	grey limestone with white sandstone

Water was reported by the contractor to have been located in the limestone with sandstone below a depth of 52.1m.

Casing Record:

Casing length:	18.9m
Casing setting:	0.6m above grade to 18.3m below grade
Casing diameter:	15.88cm ID
Wall thickness:	0.48cm
Material:	steel
Bedrock Open Hole:	18.3 to 57.9m
Annular Seal:	Bentonite slurry from grade to 15.2m Neat cement from 15.2m to 18.3m

3.3 Test Well 3 (West):

The following information is derived from the water well record prepared by the drilling contractor, Canadian Soil Drilling. A copy of the water well record is included in the appendix. Figure 9 shows the location of the well.

Date of construction: May 2012

Contractor's Log of Formations Penetrated:

Depth (m)	Materials
0 - 6.1	clay with boulders
6.1 - 15.9	sand and gravel with boulders
15.9 - 43.9	grey limestone
43.9 - 48.2	grey limestone with white sandstone

48.2 - 54.9 white sandstone

Water was reported by the contractor to have been located in the grey limestone at a depth of 32.3m and in the sandstone below a depth of 53.0m.

Casing Record:

Casing length:	20.1m
Casing setting:	0.6m above grade to 19.5m below grade
Casing diameter:	15.88cm ID
Wall thickness:	0.48cm
Material:	steel
Bedrock Open Hole:	19.5 to 54.9m
Annular Seal:	Bentonite slurry from grade to 16.5m Neat cement from 16.5m to 19.5m

4.0 WELL TESTING

4.1 Test Well 1 Pumping Test:

Test Well 1 was subjected to a 6-hour pumping test on June 19, 2012 at a rate of 21L/min. Test Well 1 was tested concurrently with Test Well 3, with a 20-minute stagger between the two tests. Water levels were observed on a regular basis during pumping and for a 40 minute period of recovery following the conclusion of pumping. Water levels were also observed on a regular basis during pumping in Test Well 2 and on-site Boreholes 2 and 6. Water levels were observed using electronic water level meters and the pumping rate was monitored using a calibrated container. Water was discharged downslope to the east.

Figure 4 is a semi-logarithmic plot of the test results showing the drawdown of the water level in the well versus the elapsed time from the start of pumping and residual drawdown versus the ratio of time from the start of pumping to the time from the end of pumping (ratio t/t'). All pumping test data are included in the appendix.

The water level in Test Well 1 lowered 0.73m during the first minute of pumping at 21L/min and assumed a gradually moderating downward trend. By about 10 minutes, the water level in Test Well 1 had essentially stabilized. However, after about 40 minutes, the downward trend of the water level began to steepen, with a moderate downward trend established after 90 minutes of pumping.

The final water level in Test Well 1 was 12.9 metres below grade, or approximately 6m above the base of the well casing and approximately 48m above the base of the well. Total water level drawdown was 1.60m, which represents about 21% of the available drawdown in the well above the base of the well casing (7.6m) and about 4% of the available drawdown above the reported upper waterbearing zone in the bedrock

(38.7m). For wells completed in the bedrock, it is recommended where possible that the water level in the well be maintained above the base of the well casing.

Following the conclusion of pumping, the water level rose to within 0.21m of the original static water level (87% recovery) within 40 minutes of the conclusion of pumping.

A total of approximately 7,560 litres of water were pumped from Test Well 1 during the 6-hour testing program.

4.2 Test Well 2 Pumping Test:

Test Well 2 was subjected to a 6-hour pumping test on June 13, 2012 at a rate of 20L/min. Water levels were observed on a regular basis during pumping and for a 50 minute period of recovery following the conclusion of pumping. Water levels were also observed on a regular basis during pumping in Test Wells 1 and 3. Water levels were observed using electronic water level meters and the pumping rate was monitored using a calibrated container. Water was discharged downslope to the east.

Figure 5 is a semi-logarithmic plot of the test results showing the drawdown of the water level in the well versus the elapsed time from the start of pumping and residual drawdown versus the ratio of time from the start of pumping to the time from the end of pumping (ratio t/t'). All pumping test data are included in the appendix.

The water level in Test Well 2 lowered 0.75m during the first minute of pumping at 20L/min and assumed a gradually moderating downward trend. By about 6 minutes, the a shallow downward trend was established, this trend lasting the balance of the pumping test with minor fluctuations.

The final water level in Test Well 2 was 10.75 metres below grade, or approximately 7.5m above the base of the well casing and approximately 47m above the base of the well. Total water level drawdown was 2.26m, which represents about 23% of the available drawdown in the well above the base of the well casing (9.8m) and about 5% of the available drawdown above the reported upper waterbearing zone in the bedrock (43.6m). For wells completed in the bedrock, it is recommended where possible that the water level in the well be maintained above the base of the well casing.

Following the conclusion of pumping, the water level rose to within 0.61m of the original static water level (73% recovery) within 50 minutes of the conclusion of pumping.

A total of approximately 7,200 litres of water were pumped from Test Well 2 during the 6-hour testing program.

4.3 Test Well 3 Pumping Test:

Test Well 3 was subjected to a 6-hour pumping test on June 19, 2012 at a rate of 20L/min. Test Well 3 was tested concurrently with Test Well 1, with a 20-minute stagger between the two tests. Water levels were observed on a regular basis during pumping and for a 60 minute period of recovery following the conclusion of pumping. Water levels were also observed on a regular basis during pumping in Test Well 2 and on-site Boreholes 2 and 6. Water levels were observed using electronic water level meters and the pumping rate was monitored using a calibrated container. Water was discharged downslope to the east.

Figure 6 is a semi-logarithmic plot of the test results showing the drawdown of the water level in the well versus the elapsed time from the start of pumping and residual drawdown versus the ratio of time from the start of pumping to the time from the end of pumping (ratio t/t'). All pumping test data are included in the appendix.

The water level in Test Well 3 lowered 0.49m during the first minute of pumping at 20L/min and assumed a gradually moderating downward trend. Between 6 minutes and 60 minutes, the downward trend of the water level progressively steepened, but after 60 minutes again moderated, By about 210 minutes, the water level in the well had essentially stabilized, remaining at this level for the balance of the pumping test.

The final water level in Test Well 3 was 15.3 metres below grade, or approximately 4m above the base of the well casing and approximately 39.6m above the base of the well. Total water level drawdown was 0.96m, which represents about 19% of the available drawdown in the well above the base of the well casing (5.2m) and about 5% of the available drawdown above the reported upper waterbearing zone in the bedrock (18.0m). For wells completed in the bedrock, it is recommended where possible that the water level in the well be maintained above the base of the well casing.

Following the conclusion of pumping, the water level rose to within 0.09m of the original static water level (91% recovery) within 60 minutes of the conclusion of pumping.

A total of approximately 7,200 litres of water were pumped from Test Well 3 during the 6-hour testing program.

4.4 Well Testing Summary:

	Test Well 1	Test Well 2	Test Well 3
Dates of Tests	June 19/12	June 13/12	June 19/12
Test Duration (Hours)	6 hours	6 hours	6 hours
Static Water Level (m below grade)	11.30	8.49	14.33
Water Level Drawdown (m)	1.60	2.26	0.96
Final Pumping Level (m below grade)	12.90	10.75	15.29
Pumping Rate (L/min)	21	20	20
Final Specific Capacity (L/min/m)	13.1	8.9	20.8
Depth to Base of Well Casing (m)	18.9	18.3	19.5
Final Water Level Above Base of Well Casing (m)	6.0	7.6	4.2
Available Drawdown Above Base of Well Casing (m)	7.6	9.8	5.2
Available Drawdown Used (%)	21%	23%	19%
Coefficient of Transmissivity (m^2/day)	37	8.8	29
Coefficient of Storage (dimensionless)	$2x10^{-5}$ at TW2 $4x10^{-4}$ at BH2	$4x10^{-5}$ at TW1	$8x10^{-4}$ at BH6
Safe Yield (L/day)	>21L/min	>20L/min	>20L/min

Notes:

i The cofficient of transmissivity was calculated using the Cooper and Jacob modified nonequilibrium method. Test Well 1 drawdown extrapolation 90-270 minutes. Test Well 2 drawdown extrapolation 20-90 minutes. Test Well 3 drawdown extrapolation 40-210 minutes.

ii The coefficient of storage values were determined using the Cooper and Jacob modified nonequilibrium equation. For Test Well 1, a zero drawdown intercept of 55 minutes at TW2 (T= 25m^2/day average, 319m distance) and 305 minutes at BH2 (T= 25m^2/day average, 165m distance) was utilized. For Test Well 2, a zero drawdown intercept of 85 minutes at TW1 (T=25m^2/day average, 319m distance) was utilized. For Test Well 3, a zero drawdown intercept of 290 minutes at BH6 (T=25m^2/day average, 115m distance) was utilized. A coefficient of storage at TW2 during the pumping of TW3 was not calculated as the commencement of interference at TW2 was assumed to first occur as a result of pumping from closer TW1.

The current proposal is to establish a commercial development on the easternmost 4.9ha portion of a 13.7 hectare (approximate) parcel of land, with development of the balance of the lands used for sewage disposal and possible future development. The current proposal is to establish several commercial stores with a total footprint of 9,675m^2. Under the Ontario Building Code, maximum design flow for stores is 5L/m^2/day, or 48,375L/day for the commercial parcel. A Permit to Take Water is required only where actual water use exceeds 50,000L/day on a single parcel, and the OBC design flow is unlikely to be reached. To meet design flow over an 8-hour business day, a well (or wells) will be required to be capable of a yield of about 100L/min. Based on the performance of the three test wells, there should be no issue in obtaining this yield from the bedrock aquifer. However, as noted, water levels are best maintained above the base of the well casings, and it is recommended that at least two wells be employed to provide this yield.

The determined coefficient of storage values are consistent with confined aquifer conditions.

4.5 Interference:

During the June 13, 2012 pumping test of Test Well 2, water levels were observed on a regular basis in Test Wells 1 and 3. During the June 19, 2012 combined pumping test of Test Wells 1 and 3, water levels were observed on a regular basis in Test Well 2 and on-site Boreholes 2 and 6 (see Section 6.0). Figures 7 and 8 are semi-logarithmic plots of the water level change in the observation wells versus the elapsed time from the start of the pumping tests (the start of pumping from TW1 on June 19). Figure 9 shows the location of the observed wells. The observation data are included in the appendix. The following summarizes the water level response in the observed wells:

Pumped Well	Observed Well	Distance	Water Level Change
TW2	TW1	319m	-0.11m
TW2	TW3	402m	+0.07m
TW1 TW3	TW2	319m from TW1 402m from TW3	-0.15m
TW1	BH2	165m	-0.03
TW3	BH6	115m	-0.02m

No water level response occurred in TW3 as a result of pumping from TW2, and it is inferred that the cone of influence from the pumping of TW2 did not reach the more distant TW3 after 360 minutes of pumping. It is assumed that the minor water level rise in TW3 occurred as a result of aquifer recovery from the morning operation of surrounding residential wells.

There were no complaints of disruptive water level interference received as a result of the testing program.

A comparison of the static water levels in TW1 and TW3 (i.e. about 11 and 14 metres below grade) with historical water levels reported in adjacent off-site wells (i.e. 8 to 11m to the west and about 12m to the east) indicates that the levels are slightly lower than indicated in the historical records. Climate fluctuation, some cumulative interference, historical drilling contractor's care of observation, and location precision uncertainty are contributing factors to the slight water level decline indication between the on-site water levels and historical adjacent water levels.

The following provides a theoretical Cooper and Jacob modified non-equilibrium equation analysis of potential long-term interference in the bedrock aquifer at a 100m distance (distance to off-site wells) resulting from groundwater withdrawals from a theoretical single on-site well. The analysis assumes Ontario Building Code continuous maximum day use (i.e. 48,375L = 9,675m^2 store area at a design flow of 5L/m^2/day).

$$s = (0.183Q \div T) \log ((2.25Tt) \div (r^2S))$$

Where:
T = coefficient of transmissivity (25m^2/day average)
Q = daily rate of withdrawal (48.375m^3/day)
s = water level drawdown
S = coefficient of storage ($3x10^{-4}$ average)
t = elapsed time (180 days to partially account for aquifer recharge)
r = distance between theoretical single well and off-site well(s) (100m)

Theoretical interference at a distance of 100m after six months of continuous pumping at 48.375m^3/day is indicated to be in the range of 1.25m.

It should be noted that the above analysis assumes no aquifer recharge (apart from the shortened elapsed time) and also assumes that the rate of withdrawal will be continuous. In practice, the bedrock aquifer will receive substantial recharge from the granular overburden and use of the facility will rarely require continuous maximum day use.

While measurable, this calculated degree of potential interference is considered acceptable in relation to total available drawdown for the bedrock aquifer in the area (i.e. in excess of 30m), particularly given that the calculation will over-estimate actual interference. Accordingly, it is our opinion that the risk of adverse off-site water level interference resulting from groundwater withdrawals at the proposed development is considered minimal with off-site wells operating in normal service.

5.0 WATER QUALITY

5.1 Bacteriological Water Quality:

Samples of water were collected from the three test wells at the conclusions of the pumping tests and were submitted to Maxxam Analytics Inc. for bacteriological examination. The samples were collected in laboratory-supplied bottles, stored in an ice-packed cooler and submitted to the laboratory under chain of custody.

The samples collected from the three test wells were reported to contain no detectable Total Coliform or E. Coli bacteria and acceptably low levels of background bacteria (i.e. 1 to 6 CFU/100mL, well below the Ontario Drinking Water Quality Standard (ODWQS) of 200 CFU/100mL for background bacteria).

The bacteriological analytical results are included with the chemical analytical results in the appendix.

5.2 Chemical Water Quality:

Samples of water were collected from the three test wells at the conclusion of the pumping tests and were submitted to Maxxam Analytics Inc. for an analysis of general chemistry parameters. The samples were collected in laboratory-supplied bottles, stored in ice-packed coolers and submitted to the laboratory under chain of custody.

The water from the three test wells is alkaline, with pH values of 7.92 to 8.09. The water from the three wells exhibits moderate hardness, with a hardness values 170 (TW3), 280 (TW2) and 340 (TW1) mg/L as $CaCO_3$. These pH and hardness values are typical for groundwater in southern Ontario.

The total dissolved solids content of the water from Test Well 1 at 580mg/L exceeds the aesthetic ODWQS of 500mg/L. The water from Test Well 2 contains a total dissolved solids content of 489mg/L, slightly below the aesthetic ODWQS. Elevated total dissolved solids is not a health-related concern, but can impart excessive taste to the water, as well as induce mineral deposition or corrosion.

The sodium content of the water from Test Wells 1 and 2 at 89mg/L and 69mg/L both exceed the level at which physicians for persons on sodium-restricted diets should be notified (20mg/L), which normally occurs through notification of the Health Unit. This is not uncommon for groundwater in southern Ontario. However, the sodium content of the water from the wells is well below the aesthetic ODWQS of 200mg/L.

The iron content of the water from Test Well 2 is slightly elevated above the aesthetic ODWQS of 0.3mg/L. Iron at elevated levels can induce the staining of plumbing fixtures and cause elevated turbidity in standing water. Iron can be treated using a variety of commercially available treatment units.

The turbidity of the water from Test Wells 1 and 2 at 8.5 NTU and 10 NTU exceeded

the aesthetic ODWQS of 5 NTU. Slightly elevated turbidity is common for newly-constructed wells and will diminish with well use.

All other chemical parameters analysed were within applicable Ontario Drinking Water Quality standards.

A copy of the laboratory analytical results is included in the appendix.

6.0 SOIL AND SHALLOW GROUNDWATER CONDITIONS

6.1 Soil Testing:

Soil conditions were established by a Geotechnical Site Assessment completed by BAE in April 2012. Relevant excerpts from the April 18, 2012 BAE report are appended to this report.

In summary, a grey sandy silt with some clay (referred to by BAE as a clay) fill derived from pond excavations at a site near Airport Parkway and Hunt Club Road to the north was used to backfill the former gravel pit. Below this fill, and at surface in the eastern periphery of the site, are granular soils typical of the vicinity.

For the purposes of sewage system design, the sandy silt fill is interpreted from the BAE information to likely exhibit a percolation in the range of 40min/cm. Under Table 22-1 of the MOE "Design Guidelines for Sewage Works", the fill corresponds with a massive, structureless silt loam. Table 22-1 of the MOE Guideline recommends a maximum loading rate of 8L/m^2/day for treated sewage, and does not recommend a loading rate for untreated sewage.

6.2 Shallow Groundwater Conditions:

Three overburden monitoring wells were installed under the supervision of BAE at the locations of Boreholes 2, 5 and 6, at the locations shown on Figure 9. The monitoring wells were installed to depths of 6.1m (BH2), 8.2m (BH5) and 9.0m (BH6). The BAE borehole logs are included in the appendix. Water levels were observed in the three boreholes on June 19, 2012, and are summarized below.

Well	Depth	Ground Elevation*	Water Level (below grade)	Water Level Elevation*
BH2	6.1m	99.02m	3.11	95.91m
BH5	8.2m	102.19m	7.32	94.87m
BH6	9.0m	102.84m	7.69	95.15m

Note: * Elevation relative to assumed benchmark (100.74m top of casing at TW1)

Figure 9 shows the contours of the watertable surface and the inferred direction of shallow groundwater in the overburden (northwesterly).

On June 13, 2012, the three BAE Boreholes were each purged of more than three casing volumes of water using a bailer and were sampled for shallow groundwater nitrate content. The samples were collected in laboratory-supplied bottles, stored in an ice-packed cooler and submitted to Maxxam Analytics Inc. under chain of custody. The analytical results are included with the Test Well 2 laboratory analytical results in the appendix. In summary, the water from Borehole 2 contained no detectable nitrate (i.e. <0.10mg/L), the water from Borehole 5 contained 0.20mg/L nitrate and the water from Borehole 6 contained 0.31mg/L nitrate. It is noted that the water from the three test wells contained no detectable nitrate.

On the basis of an inferred northwesterly direction of groundwater flow in the overburden, and the very limited sewage impact from the long-existing sewage systems to the south as indicated at the three Boreholes, dilution and denitrification processes in the granular overburden are interpreted to be substantial.

7.0 REASONABLE USE ASSESSMENT

The Ministry of the Environment (MOE) Reasonable Use Concept (RUC) is normally applicable to the assessment of impact of large effluent disposal systems (i.e. >10,000 litres per day design capacity). As outlined above, for the proposed 9,675m^2 combined store area under the Ontario Building Code, maximum design flow for stores is 5L/m^2/day, or 48,375L/day . As the parcel is intended to be under common ownership, the total sewage flow will exceed 10,000L/day and the RUC will be applicable.

The critical groundwater contaminant in the context of the RUC is nitrate. Under the guideline, the effect is to require the nitrate content of groundwater at the downgradient property line not to exceed 2.5mg/L under a mass-balance calculation specified by the guideline. The requirements of the current Reasonable Use guidelines are detailed in the 2008 MOE Design Guidelines for Sewage Works (the MOE guideline). However, the underlying concepts applicable to the commercial parcel's sewage systems remain consistent with MOE Guideline B-7 (Incorporation of the Reasonable Use Concept into MOE Groundwater Management Activities) and Procedure B-7-1 (Determination of Contaminant Limits and Attenuation Zones).

The volume of infiltrating precipitation for the mass-balance calculation is specified by the guideline to be 250mm/year. Based on a proposed design flow of 48,375L/day and a MOE-recommended loading rate for treated sewage of 8L/m^2/day, the footprint of the eventual tile beds will be about 6,047m^2. Assuming a 30m width, the tile bed footprint would be about 200m long. As the MOE Guideline promotes the maximizing of on-site dilution, with an inferred northwesterly direction of groundwater flow, it would be best to locate the elongated tile bed parallelling the southern property line. Proper setbacks would be required from Test Well 2 (if it is to be retained), buildings and property lines. Accordingly, an on-site area of about 200m by 147m would be available for dilution (about 2.9ha).

The impact calculation of the new sewage system is as follows:

Dilutants:

Infiltration within plume:	7.25×10^6L/year (at 250mm/year)
Sewage Flow:	1.77×10^7L/year (at 5L/m^2/day or 48,375 L/day)
Total Dilution (D):	2.50×10^7L/year

Nitrate Sources:

Background in Groundwater:	none (guideline-specified)
Sewage generation:	7.08×10^8mg/year (assuming 40mg/L nitrate in sewage)

TN ÷ D (Theoretical Nitrate Impact at northern property line): 28.3mg/L

The theoretical impact of the proposed sewage disposal system at the downgradient property line under the 2008 guideline is 28.3mg/L, well in excess of the RUC limit of 2.5mg/L. For the theoretical sewage plume to contain 2.5mg/L nitrate, under the criteria specified by the guideline, sewage effluent would be required to be treated with a nitrate reduction system capable of reducing the nitrate content of sewage from 40mg/L to approximately 3.5mg/L.

In discussions with the proponent, it is understood that it may eventually be proposed to include restaurants (or other higher water demand uses) in the commercial parcel, which would increase the sewage design flow above 48,375 L/day, the design flow calculated for retail store space only. The degree of required nitrate reduction would increase with more sewage design flow, as illustrated as follows:

60,000L/day design flow, required nitrate effluent content = 3.3mg/L
70,000L/day design flow, required nitrate effluent content = 3.2mg/L
100,000L/day design flow, required nitrate effluent content = 3.0mg/L

It is understood that these levels of nitrate reduction (i.e. 3.0 to 3.5mg/L in effluent) are nearing the limits of current technology that are reasonable to operate. Suppliers of sewage treatment systems should be consulted to confirm the viability of treatment systems capable of the required degree of nitrate reduction under the MOE guideline. It is noted that re-configuration of the sewage system footprint to utilize the entire southern property line west of the commercial parcel would potentially relax these treatment requirements slightly.

8.0 CONCLUSIONS AND RECOMMENDATIONS

1. The three on-site test wells each have safe yields of at least 20L/min. It is recommended that at least two production wells be utilized to meet the design flow for the currently proposed commercial parcel (i.e. 48,375L/day) so that water levels are maintained above the bedrock surface.

2. A Permit to Take Water will be required if the actual rate of withdrawal from the on-site well(s) exceeds 50,000L/day. Because sewage design flows under the Ontario Building Code tend to be somewhat conservative, a sewage design flow exceeding 50,000L/day (i.e. if more than 9,675m^2 of retail space are developed, or if higher-water demand uses are proposed) does not necessarily trigger the requirement for a Permit to Take Water. The requirement for a Permit to Take Water should be based on an analysis of actual water use records from similar facilities. Should a Permit to Take Water eventually be required, formal 24-hour (or longer) testing of the proposed supply wells will be required in support of the application to the Ministry of the Environment.

3. The bacteriological quality of the water from the three test wells is acceptable.

4. The chemical quality of the water from the three test wells is acceptable. Aesthetically elevated parameters include total dissolved solids for Test Well 1 and iron for Test Well 2. The local medical officer of health should be notified of the slightly elevated sodium content of the water from Test Wells 1 and 2.

5. Observed interference during testing and calculated long-term interference potential, in the range of 1.25m at the closest off-site well, is considered to represent a low risk of disruptive off-site water level interference.

6. Based on sandy silt fill soils present over most of the site, as identified by BAE, the MOE recommends a sewage loading rate of 8L/m^2/day for treated sewage. Reducing the sewage system footprint by removing the sandy silt fill to expose the underlying granular materials is an option, however the 2008 MOE Reasonable Use Guideline promotes the wider dispersion of sewage across a site, otherwise very substantial nitrate reduction treatment will be required.

7. Assuming a sewage system footprint along the southern property line of about 200m x 30m, under the 2008 MOE guideline, a nitrate reduction target of about 3.5mg/L would be required. If the sewage disposal footprint is extended further west, to the western property line, the nitrate reduction target would be slightly relaxed. These targets represent about a 92% reduction in nitrate content. It is understood that these levels of nitrate reduction are at the limits of current technology that are reasonable to operate.

8. A Certificate of Approval will be required from the Ministry of the Environment for the proposed sewage works.

IAN D. WILSON ASSOCIATES LIMITED

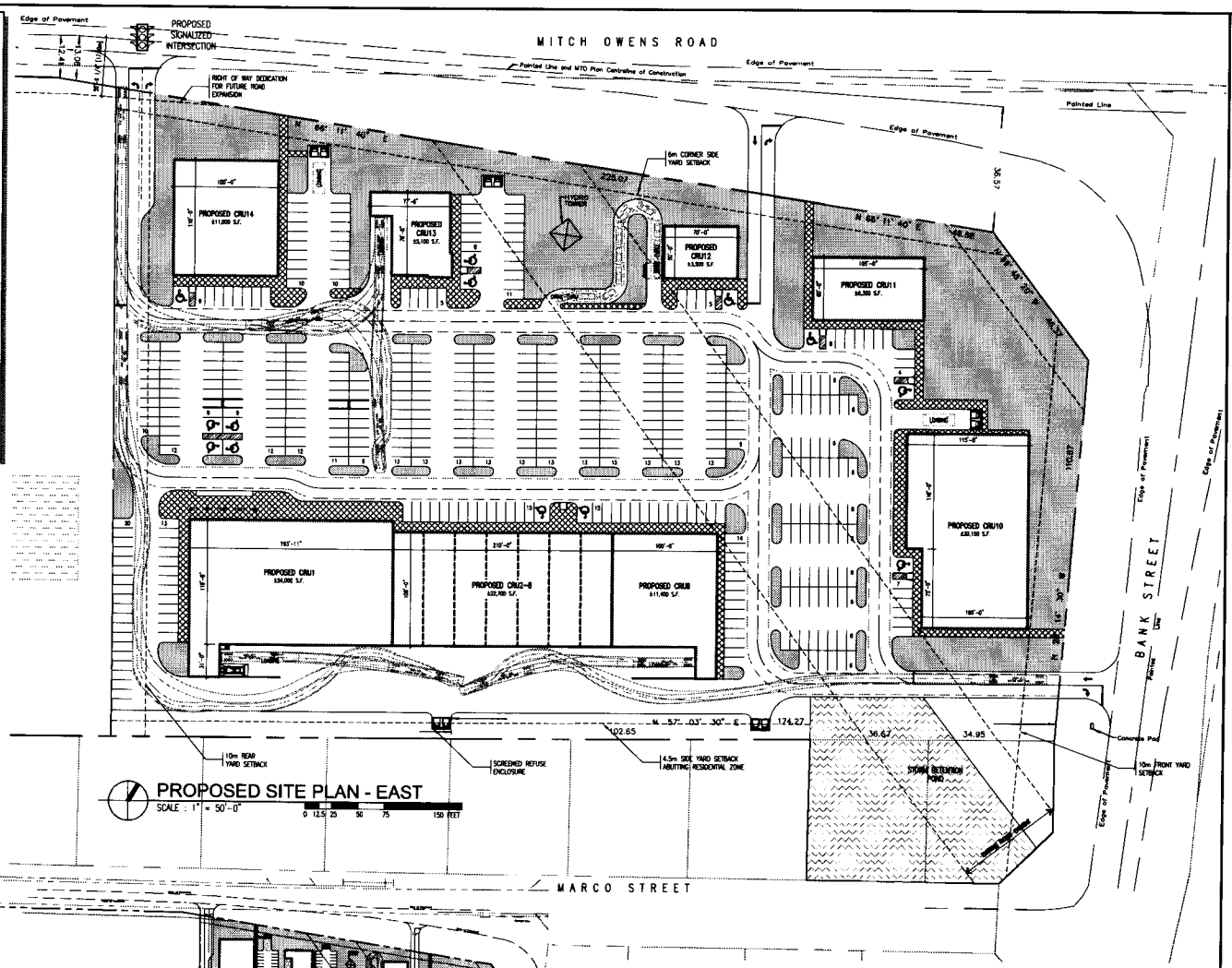
Geoffrey Rether, B.Sc., P.Geo.

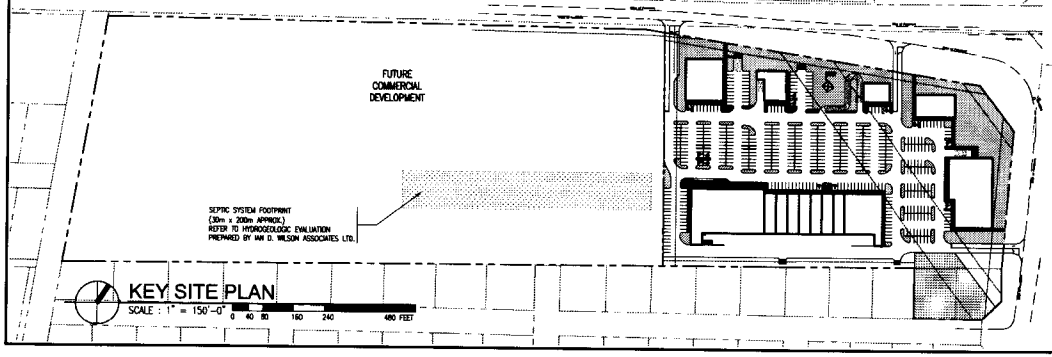
July 18, 2012

PROFESSIONAL GEOSCIENTIST
GEOFFREY B. RETHER
PRACTISING MEMBER
0426
ONTARIO

FIGURES AND APPENDIX

SITE STATISTICS	REQUIREMENT	PROPOSAL
SITE AREA	±0.988 ACRES MIN. (43,040 S.F. / 4,000 m²)	±12.0 ACRES (522,681 S.F. /48,562.3 m²)
MIN. LOT WIDTH	98.4 ft. (30.0m)	533.6 ft. (162.6m)
BUILDING HEIGHT	36.1 ft. (11.0m) MAX.	VARIES, T.B.D. (11.0m MAX.)
BUILDING LOT COVERAGE	25.0% MAX.	20.0%
BUILDING AREA CRU 1-14 (GROSS FLOOR AREA, OUTSIDE WALLS)	N/A	±104,150 S.F. (9,675 m²)
LEASEABLE FLOOR AREA CRU 1-14 (BASED ON 93% TO INTERIOR OF PERIMETER WALLS)	107,600 S.F. (10,000 m²) MAX.	±96,860 S.F. (9,001.8 m²)
LANDSCAPE	15% (7,284.3 S.F. / 676.0 m²)	34.8% (181,850 S.F. / 16,900.6 m²
PARKING (BASED ON LEASEABLE FLOOR AREA)	3.4 SPACES / 100m² = 307 SPACES	5.15 SPACES / 100m² = 464 SPACES (INCLUDES 13 H.C. SPACES)
PARKING STALL SIZE	9'-0" x 19'-0"	
MANEUVERING AISLE	22'-0"	
TRAFFIC AISLE	25'-0"	





OTIS GROUP OF COMPANIES

07/16/12	PRELIMINARY REVIEW
05/18/12	PRELIMINARY REVIEW
03/29/12	PRELIMINARY REVIEW
12/02/11	PRELIMINARY REVIEW
10/19/11	PRELIMINARY REVIEW
12/15/10	PRELIMINARY REVIEW
12/09/10	PRELIMINARY REVIEW

date (mm/dd/yy) issued for:

general notes:

1. THIS PLAN IS AN INSTRUMENT OF SERVICE ONLY AND IS THE PROPERTY OF THE ARCHITECT.
2. DRAWINGS SHALL NOT BE SCALED.
3. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT BEFORE THE COMMENCEMENT OF WORK.
4. ATTENTION IS DIRECTED TO PROVISIONS IN THE GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION REGARDING COPYRIGHT AND REUSE OF DOCUMENTS.
5. IN THE EVENT THE ARCHITECT IS RETAINED TO REVIEW SHOP DRAWINGS, SUCH REVIEW SHALL BE FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS.
6. CONTRACTORS SHALL PROMPTLY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCY OR AMBIGUITY DISCOVERED BETWEEN THE CONTRACT DOCUMENTS AND ANY APPLICABLE CODES OR BY-LAWS.
7. THE ARCHITECT IS NOT RESPONSIBLE FOR THE CONSTRUCTION METHODS AND OR TECHNIQUES IN THE CONSTRUCTION OF THIS FACILITY.

stamp:

architectural design associates
1880 assumption street, suite 100
windsor ontario canada n8y 1c4
ph 519.254.3430 fax 519.254.3643

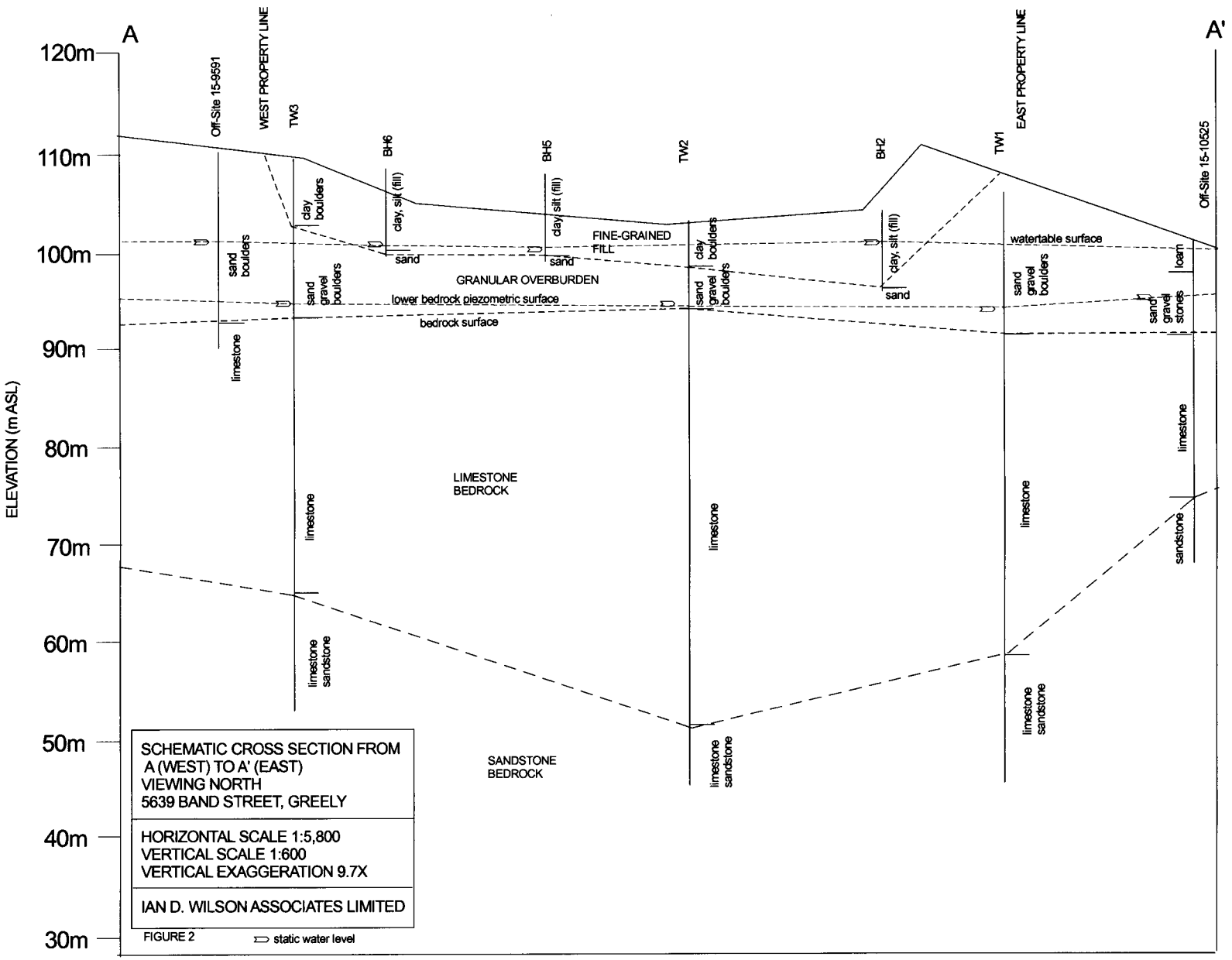
project:
COMMERCIAL DEVELOPMENT
MITCH OWENS RD. & BANK ST.
GREELY, ONTARIO

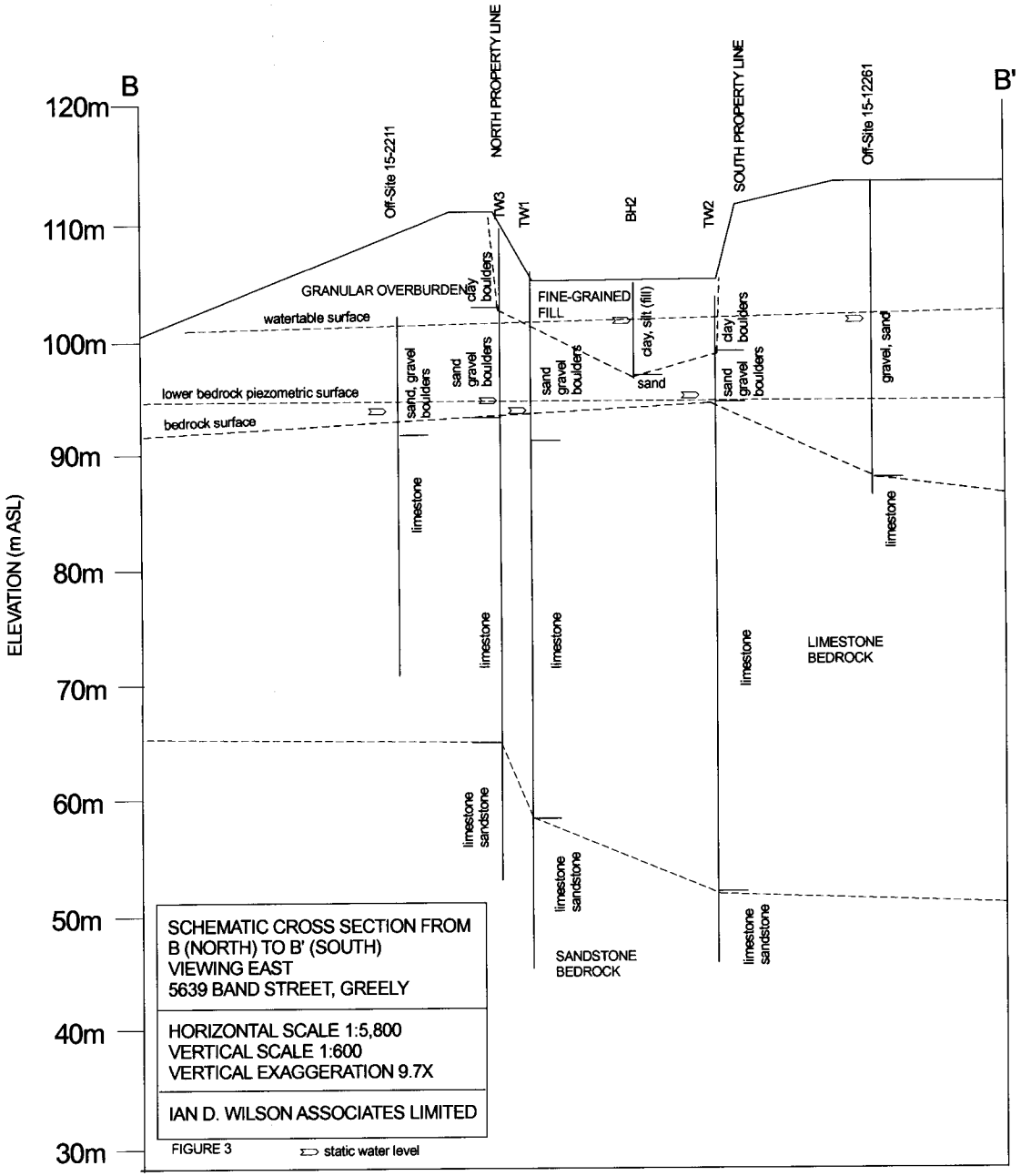
client:
OTIS GROUP OF COMPANIES

title:
SITE PLAN

scale: AS SHOWN
drawn by: JT / TC
checked by: JBK
date: JULY 2012
comm. no.: 2010-80
sheet no.:

Figure 1


A
A'
120m
110m
100m
90m
80m
70m
60m
50m
40m
30m
ELEVATION (m ASL)
Off-Site 15-9591
WEST PROPERTY LINE
TW3
BH6
BH5
TW2
BH2
TW1
EAST PROPERTY LINE
Off-Site 15-10525
clay boulders
clay, silt (fill)
sand
FINE-GRAINED FILL
GRANULAR OVERBURDEN
watertable surface
lower bedrock piezometric surface
bedrock surface
sand boulders
sand gravel boulders
clay boulders
sand gravel boulders
clay, silt (fill)
sand
sand gravel boulders
loam
sand gravel stones
limestone
LIMESTONE BEDROCK
limestone sandstone
SANDSTONE BEDROCK
SCHEMATIC CROSS SECTION FROM A (WEST) TO A' (EAST)
VIEWING NORTH
5639 BAND STREET, GREELY
HORIZONTAL SCALE 1:5,800
VERTICAL SCALE 1:600
VERTICAL EXAGGERATION 9.7X
IAN D. WILSON ASSOCIATES LIMITED
FIGURE 2
static water level


B
B'
120m
110m
100m
90m
80m
70m
60m
50m
40m
30m
ELEVATION (m ASL)
Off-Site 15-2211
NORTH PROPERTY LINE
TW3
TW1
BH2
TW2
SOUTH PROPERTY LINE
Off-Site 15-12261
GRANULAR OVERBURDEN
FINE-GRAINED FILL
watertable surface
lower bedrock piezometric surface
bedrock surface
clay
boulders
sand, gravel
boulders
sand
gravel
boulders
clay, silt (fill)
sand
gravel, sand
limestone
LIMESTONE BEDROCK
limestone sandstone
SANDSTONE BEDROCK
SCHEMATIC CROSS SECTION FROM B (NORTH) TO B' (SOUTH)
VIEWING EAST
5639 BAND STREET, GREELY
HORIZONTAL SCALE 1:5,800
VERTICAL SCALE 1:600
VERTICAL EXAGGERATION 9.7X
IAN D. WILSON ASSOCIATES LIMITED
FIGURE 3
static water level

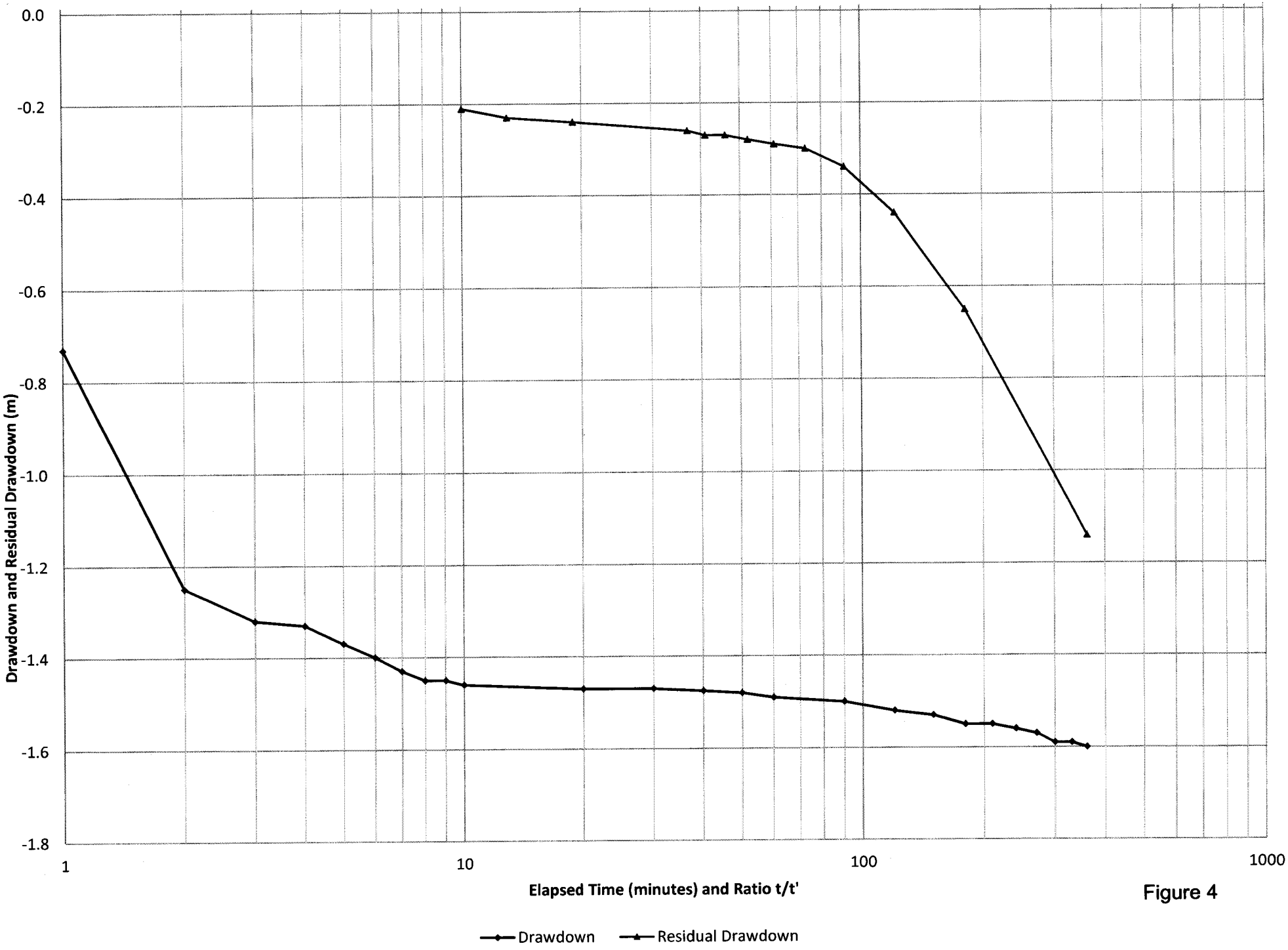

5639 Bank Street, Greely - Test Well 1
0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
-1.4
-1.6
-1.8
Drawdown and Residual Drawdown (m)
1
10
100
1000
Elapsed Time (minutes) and Ratio t/t'
Drawdown
Residual Drawdown

Figure 4

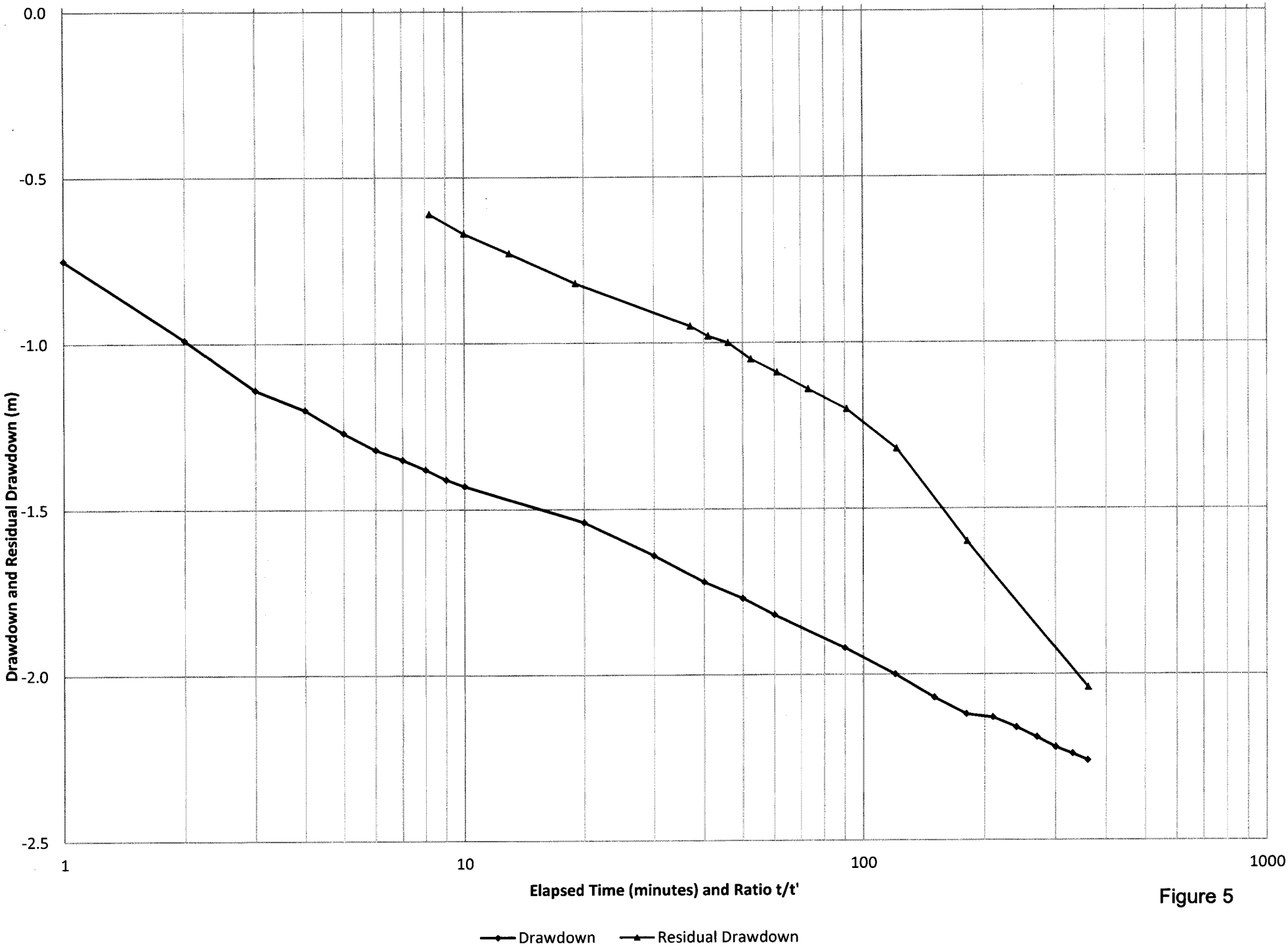

5639 Bank Street, Greely - Test Well 2
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
Drawdown and Residual Drawdown (m)
1
10
100
1000
Elapsed Time (minutes) and Ratio t/t'
Drawdown
Residual Drawdown

Figure 5

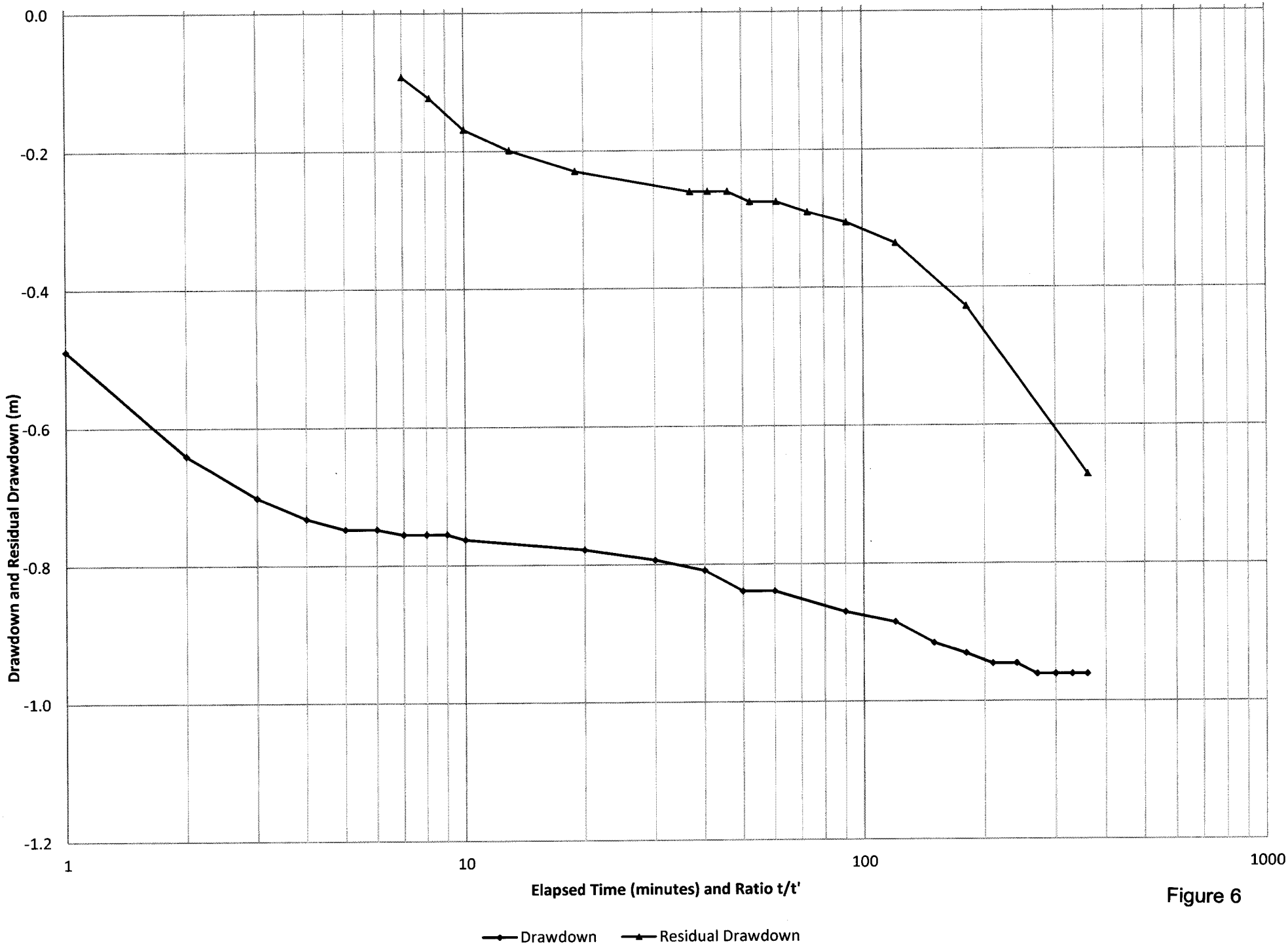

5639 Bank Street, Greely - Test Well 3
0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
Drawdown and Residual Drawdown (m)
1
10
100
1000
Elapsed Time (minutes) and Ratio t/t'
Drawdown
Residual Drawdown

Figure 6

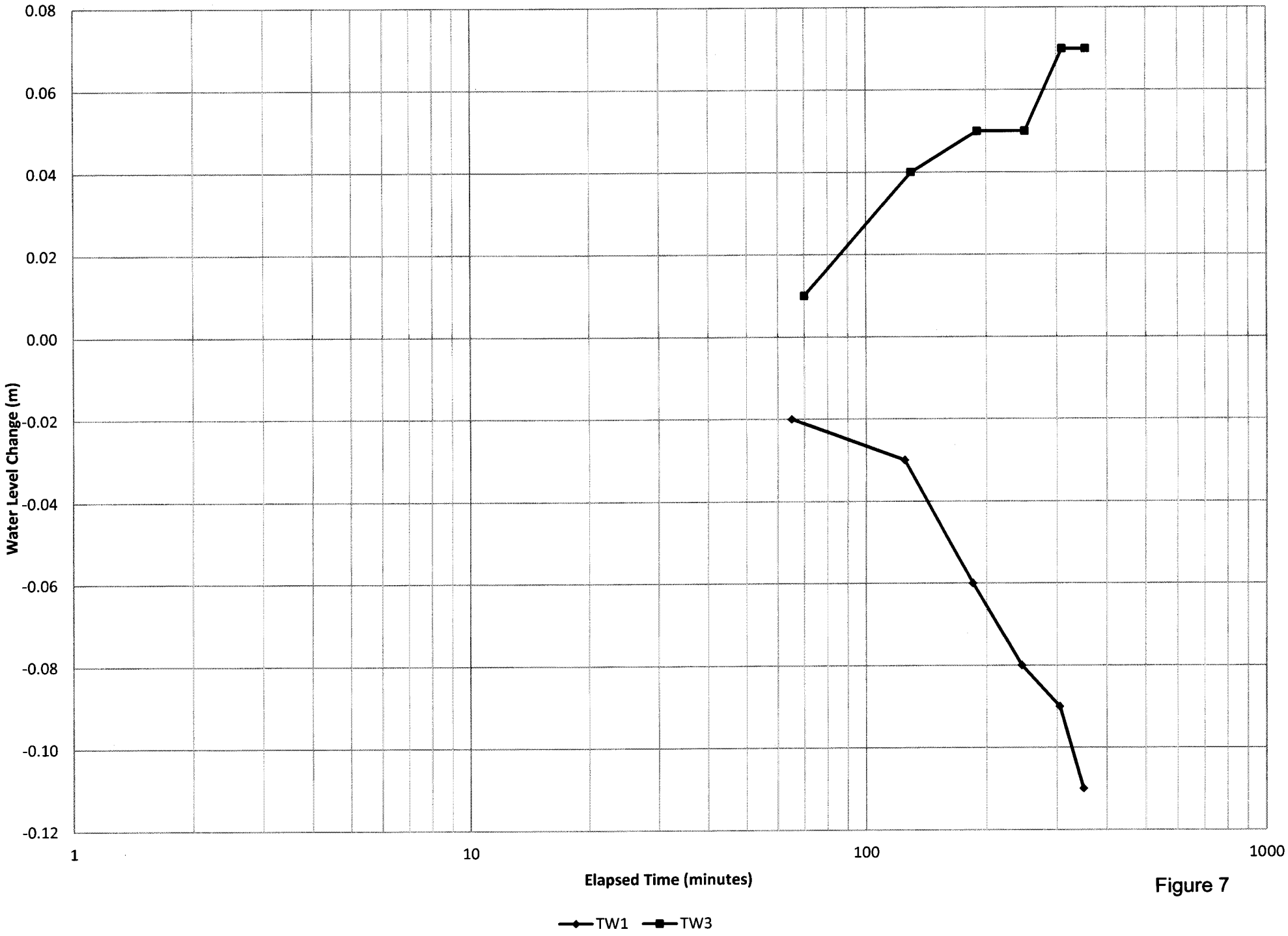

5639 Bank Street, Greely - Interference Observations During TW2 Pumping Test
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
Water Level Change (m)
1
10
100
1000
Elapsed Time (minutes)
TW1
TW3

Figure 7

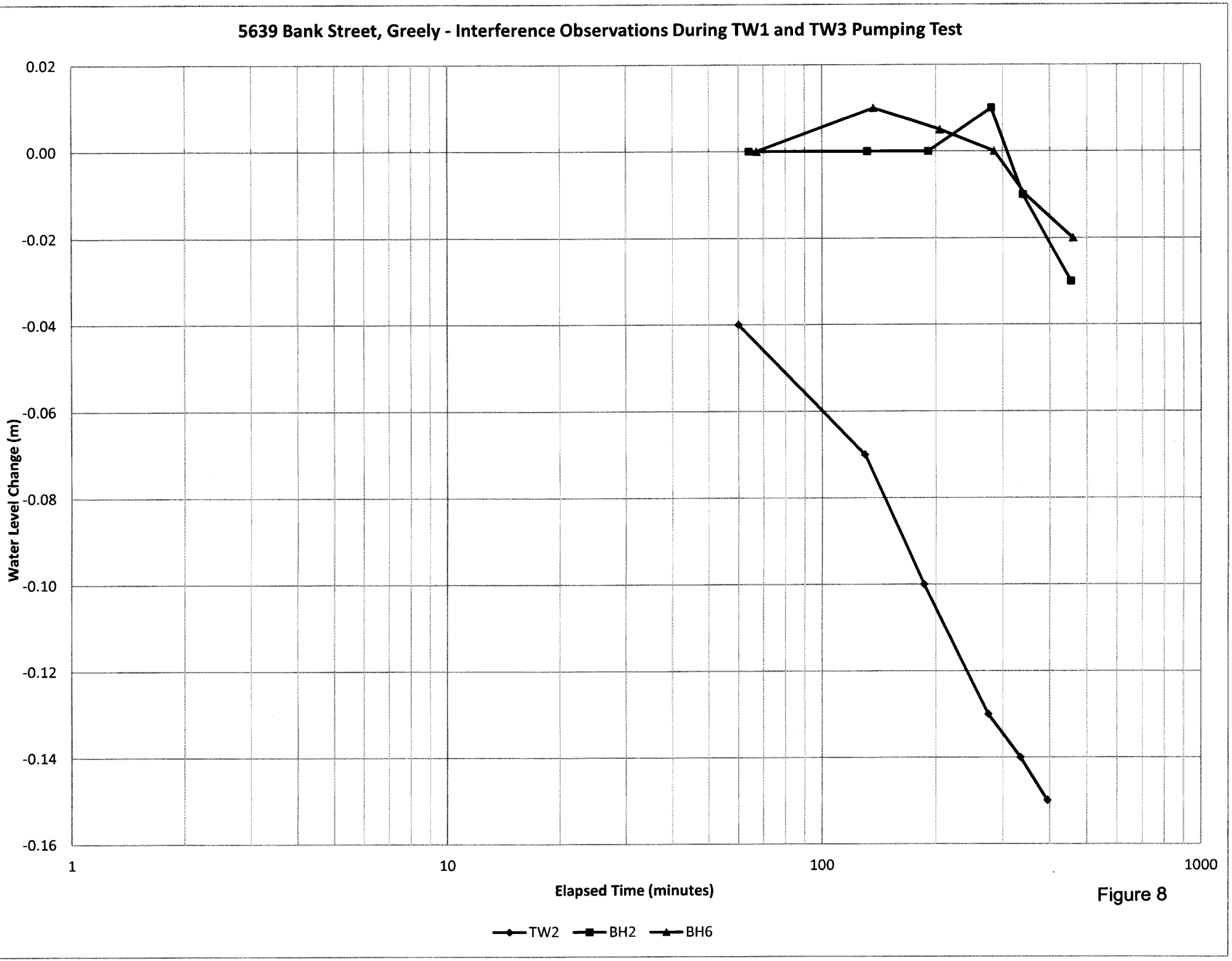
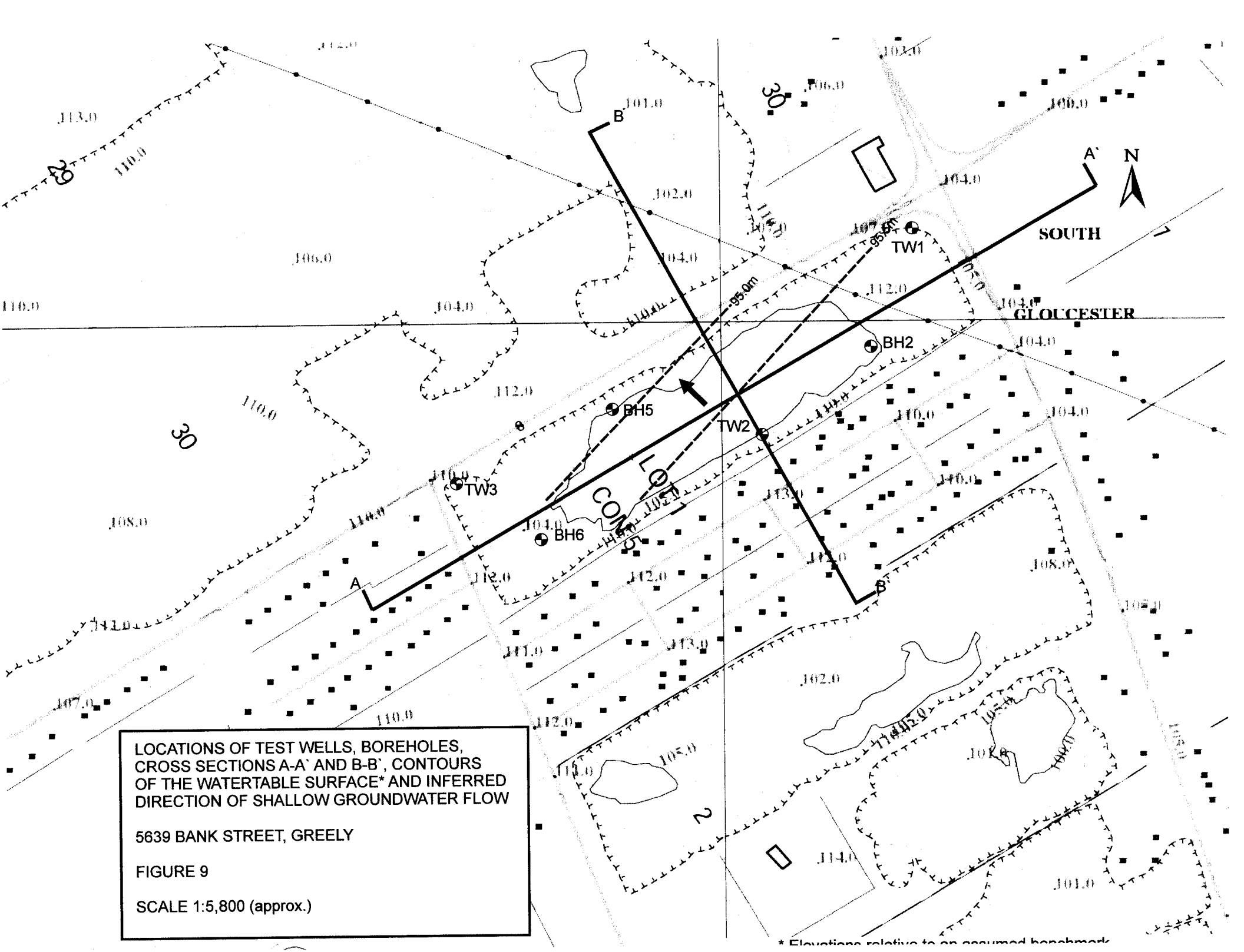

5639 Bank Street, Greely - Interference Observations During TW1 and TW3 Pumping Test
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
Water Level Change (m)
1
10
100
1000
Elapsed Time (minutes)
TW2
BH2
BH6

Figure 8



LOCATIONS OF TEST WELLS, BOREHOLES, CROSS SECTIONS A-A` AND B-B`, CONTOURS OF THE WATERTABLE SURFACE* AND INFERRED DIRECTION OF SHALLOW GROUNDWATER FLOW

5639 BANK STREET, GREELY

FIGURE 9

SCALE 1:5,800 (approx.)

* Elevations relative to an assumed benchmark

Pumping Test Data
5639 Bank Street, Greely
Test Well 1 (East Well)

Date of Test: 19-Jun-12
Time: 10:00am
Static Water Level: 11.95m below top of casing
Measuring Point Elevation: 0.65m (top of casing)
Pumping Rate: 21L/min

Elapsed Time (minutes)*	Recovery Elapsed Time (minutes)	Pumping Water Level (m)	Recovery Water Level (m)	Water Level Drawdown (m)	Residual Drawdown (m)
0		11.95		0.00	
1		12.68		-0.73	
2		13.20		-1.25	
3		13.27		-1.32	
4		13.28		-1.33	
5		13.32		-1.37	
6		13.35		-1.40	
7		13.38		-1.43	
8		13.40		-1.45	
9		13.40		-1.45	
10		13.41		-1.46	
20		13.42		-1.47	
30		13.42		-1.47	
40		13.43		-1.48	
50		13.43		-1.48	
60		13.44		-1.49	
90		13.45		-1.50	
120		13.47		-1.52	
150		13.48		-1.53	
180		13.50		-1.55	
210		13.50		-1.55	
240		13.51		-1.56	
270		13.52		-1.57	
300		13.54		-1.59	
330		13.54		-1.59	
360		13.55		-1.60	
361	1		13.09		-1.14
181	2		12.60		-0.65
121	3		12.39		-0.44
91	4		12.29		-0.34
73	5		12.25		-0.30
61	6		12.24		-0.29
52.4	7		12.23		-0.28
46	8		12.22		-0.27

41	9		12.22		-0.27
37	10		12.21		-0.26
19	20		12.19		-0.24
13	30		12.18		-0.23
10	40		12.16		-0.21

Note: * Recovery shown as ratio t/t'

Pumping Test Data
5639 Bank Street, Greely
Test Well 2 (Center Well)

Date of Test: 13-Jun-12
Time: 11:26am
Static Water Level: 9.15m below measuring point
Measuring Point Elevation: 0.66m (top of casing)
Pumping Rate: 20L/min

Elapsed Time (minutes)*	Recovery Elapsed Time (minutes)	Pumping Water Level (m)	Recovery Water Level (m)	Water Level Drawdown (m)	Residual Drawdown (m)
0		9.15		0.00	
1		9.90		-0.75	
2		10.14		-0.99	
3		10.29		-1.14	
4		10.35		-1.20	
5		10.42		-1.27	
6		10.47		-1.32	
7		10.50		-1.35	
8		10.53		-1.38	
9		10.56		-1.41	
10		10.58		-1.43	
20		10.69		-1.54	
30		10.79		-1.64	
40		10.87		-1.72	
50		10.92		-1.77	
60		10.97		-1.82	
90		11.07		-1.92	
120		11.15		-2.00	
150		11.22		-2.07	
180		11.27		-2.12	
210		11.28		-2.13	
240		11.31		-2.16	
270		11.34		-2.19	
300		11.37		-2.22	
330		11.39		-2.24	
360		11.41		-2.26	
361	1		11.19		-2.04
181	2		10.75		-1.60
121	3		10.47		-1.32
91	4		10.35		-1.20
73	5		10.29		-1.14
61	6		10.24		-1.09
52.4	7		10.20		-1.05
46	8		10.15		-1.00

41	9		10.13		-0.98
37	10		10.10		-0.95
19	20		9.97		-0.82
13	30		9.88		-0.73
10	40		9.82		-0.67
8.2	50		9.76		-0.61

Note: * Recovery shown as ratio t/t'

Pumping Test Data
5639 Bank Street, Greely
Test Well 3 (West Well)

Date of Test: 19-Jun-12
Time: 10:20am
Static Water Level: 14.66m below measuring point
Measuring Point Elevation: 0.33m (top of casing)
Pumping Rate: 20L/min

Elapsed Time (minutes)*	Recovery Elapsed Time (minutes)	Pumping Water Level (m)	Recovery Water Level (m)	Water Level Drawdown (m)	Residual Drawdown (m)
0		14.66		0.00	
1		15.15		-0.49	
2		15.30		-0.64	
3		15.36		-0.70	
4		15.39		-0.73	
5		15.41		-0.75	
6		15.41		-0.75	
7		15.42		-0.76	
8		15.42		-0.76	
9		15.42		-0.76	
10		15.42		-0.76	
20		15.44		-0.78	
30		15.45		-0.79	
40		15.47		-0.81	
50		15.50		-0.84	
60		15.50		-0.84	
90		15.53		-0.87	
120		15.54		-0.88	
150		15.58		-0.92	
180		15.59		-0.93	
210		15.61		-0.95	
240		15.61		-0.95	
270		15.62		-0.96	
300		15.62		-0.96	
330		15.62		-0.96	
360		15.62		-0.96	
361	1		15.33		-0.67
181	2		15.09		-0.43
121	3		15.00		-0.34
91	4		14.97		-0.31
73	5		14.95		-0.29
61	6		14.94		-0.28
52.4	7		14.94		-0.28
46	8		14.92		-0.26

41	9		14.92		-0.26
37	10		14.92		-0.26
19	20		14.89		-0.23
13	30		14.86		-0.20
10	40		14.83		-0.17
8.2	50		14.78		-0.12
7	60		14.75		-0.09

Note: * Recovery shown as ratio t/t'

Observation Well Data
5639 Bank Street, Greely
Test Well 2 (Center Well) Pumping Test

Test Well 1 **Test Well 3**

Elapsed Time (Minutes)	Water Level (m)	Water Level Change (m)	Elapsed Time (Minutes)	Water Level (m)	Water Level Change (m)
-60	11.59	0.00	-66	14.21	0.00
65	11.61	-0.02	70	14.20	0.01
125	11.62	-0.03	130	14.17	0.04
185	11.65	-0.06	190	14.16	0.05
245	11.67	-0.08	250	14.16	0.05
305	11.68	-0.09	310	14.14	0.07
350	11.70	-0.11	355	14.14	0.07

Observation Well Data*
5639 Bank Street, Greely
Test Wells 1 and 3 Pumping Tests

Test Well 2 **Borehole 2** **Borehole 6**

Elapsed Time (Minutes)	Water Level (m)	Water Level Change (m)	Elapsed Time (Minutes)	Water Level (m)	Water Level Change (m)	Elapsed Time (Minutes)	Water Level (m)	Water Level Change (m)
-30	9.47	0.00	-20	3.97	0.00	-15	8.60	0.00
60	9.51	-0.04	64	3.97	0.00	67	8.60	0.00
130	9.54	-0.07	132	3.97	0.00	137	8.59	0.01
186	9.57	-0.10	191	3.97	0.00	205	8.60	0.00
275	9.60	-0.13	280	3.96	0.01	285	8.60	0.00
335	9.61	-0.14	340	3.98	-0.01	345	8.61	-0.01
395	9.62	-0.15	455	4.00	-0.03	460	8.62	-0.02

* Elapsed Times From Start of TW1 Pumping Test (10am)

Maxxam

Success Through Science®

Your Project #: GREELY
Your C.O.C. #: 80873

Attention: Geoff Rether
Ian D Wilson Associates Ltd
PO Box 299
76722 Airport Rd
Clinton, ON
N0M 1L0

Report Date: 2012/06/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B287615
Received: 2012/06/13, 18:01

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	1	N/A	2012/06/18	CAM SOP-00448	SM 2320B
Carbonate, Bicarbonate and Hydroxide	1	N/A	2012/06/19	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	1	N/A	2012/06/15	CAM SOP-00463	EPA 325.2
Colour	1	N/A	2012/06/15	CAM SOP-00412	APHA 2120
Conductivity	1	N/A	2012/06/18	CAM SOP-00448	SM 2510
Dissolved Organic Carbon (DOC)	1	N/A	2012/06/14	CAM SOP-00446	SM 5310 B
Fluoride	1	2012/06/14	2012/06/15	CAM SOP-00448	APHA 4500FC
Hardness (calculated as CaCO3)	1	N/A	2012/06/19	CAM SOP 00102	SM 2340 B
Dissolved Metals by ICPMS	1	N/A	2012/06/19	CAM SOP-00447	EPA 6020
Ion Balance (% Difference)	1	N/A	2012/06/19		
Anion and Cation Sum	1	N/A	2012/06/19		
Coliform/ E. coli, CFU/100mL	1	N/A	2012/06/13	CAM SOP-00551	MOE E3407
Total Ammonia-N	1	N/A	2012/06/21	CAM SOP-00441	US GS I-2522-90
Nitrate (NO3) and Nitrite (NO2) in Water (1)	2	N/A	2012/06/14	CAM SOP-00440	SM 4500 NO3I/NO2B
Nitrate (NO3) and Nitrite (NO2) in Water (1)	2	N/A	2012/06/15	CAM SOP-00440	SM 4500 NO3I/NO2B
pH	1	N/A	2012/06/18	CAM SOP-00448	SM 4500H+ B
Orthophosphate	1	N/A	2012/06/15	CAM SOP-00461	EPA 365.1
Sat. pH and Langelier Index (@ 20C)	1	N/A	2012/06/19		
Sat. pH and Langelier Index (@ 4C)	1	N/A	2012/06/19		
Sulphate by Automated Colourimetry	1	N/A	2012/06/15	CAM SOP-00464	EPA 375.4
Total Dissolved Solids (TDS calc)	1	N/A	2012/06/19		
Turbidity	1	N/A	2012/06/14	CAM SOP-00417	APHA 2130B

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

Your Project #: GREELY
Your C.O.C. #: 80873

Attention: Geoff Rether
Ian D Wilson Associates Ltd
PO Box 299
76722 Airport Rd
Clinton, ON
N0M 1L0

Report Date: 2012/06/21

CERTIFICATE OF ANALYSIS

-2-

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Christine Gripton
21 Jun 2012 18:08:44 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

CHRISTINE GRIPTON, Project Manager
Email: CGripton@maxxam.ca
Phone# (800) 268-7396 Ext:250

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

Maxxam Job #: B287615
Report Date: 2012/06/21

Ian D Wilson Associates Ltd
Client Project #: GREELY

RESULTS OF ANALYSES OF WATER

Maxxam ID		NU4410		NU4411	NU4412		
Sampling Date		2012/06/13 14:00		2012/06/13 12:00	2012/06/13 12:30		
COC Number		80873		80873	80873		
	Units	**TW2**	**QC Batch**	**EAST MW**	**WEST MW**	**RDL**	**QC Batch**
Calculated Parameters							
Anion Sum	me/L	9.16	2879442			N/A	2879442
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	220	2879440			1.0	2879440
Calculated TDS	mg/L	489	2879445			1.0	2879445
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.6	2879440			1.0	2879440
Cation Sum	me/L	8.76	2879442			N/A	2879442
Hardness (CaCO3)	mg/L	280	2880256			1.0	2880256
Ion Balance (% Difference)	%	2.20	2879441			N/A	2879441
Langelier Index (@ 20C)	N/A	0.813	2879443				2879443
Langelier Index (@ 4C)	N/A	0.565	2879444				2879444
Saturation pH (@ 20C)	N/A	7.27	2879443				2879443
Saturation pH (@ 4C)	N/A	7.52	2879444				2879444
Inorganics							
Total Ammonia-N	mg/L	0.050	2883533			0.050	2883533
Colour	TCU	ND	2881672			2	2881672
Conductivity	umho/cm	940	2881117			1.0	2881117
Fluoride (F-)	mg/L	0.41	2881118			0.10	2881118
Dissolved Organic Carbon	mg/L	0.70	2881014			0.20	2881014
Orthophosphate (P)	mg/L	ND	2881701			0.010	2881701
pH	pH	8.09	2881116				2881116
Dissolved Sulphate (SO4)	mg/L	35	2881703			1	2881703
Turbidity	NTU	10	2880722			0.2	2880722
Alkalinity (Total as CaCO3)	mg/L	230	2881112			1.0	2881112
Dissolved Chloride (Cl)	mg/L	140	2881700			1	2881700
Nitrite (N)	mg/L	ND	2881083			0.010	2881083
Nitrate (N)	mg/L	ND	2881083	ND	0.31	0.10	2881677
p-Alkalinity	mg/L	ND	2881112			1.0	
Nitrate + Nitrite	mg/L	ND	2881083			0.10	

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B287615
Report Date: 2012/06/21

Ian D Wilson Associates Ltd
Client Project #: GREELY

RESULTS OF ANALYSES OF WATER

Maxxam ID		NU4413		
Sampling Date		2012/06/13 13:00		
COC Number		80873		
	Units	**CENTER MW**	**RDL**	**QC Batch**
Inorganics				
Nitrate (N)	mg/L	0.20	0.10	2881083

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B287615
Report Date: 2012/06/21

Ian D Wilson Associates Ltd
Client Project #: GREELY

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		NU4410		
Sampling Date		2012/06/13 14:00		
COC Number		80873		
	Units	**TW2**	**RDL**	**QC Batch**
Metals				
Dissolved Aluminum (Al)	ug/L	97	5.0	2884850
Dissolved Antimony (Sb)	ug/L	ND	0.50	2884850
Dissolved Arsenic (As)	ug/L	ND	1.0	2884850
Dissolved Barium (Ba)	ug/L	160	2.0	2884850
Dissolved Beryllium (Be)	ug/L	ND	0.50	2884850
Dissolved Bismuth (Bi)	ug/L	ND	1.0	2884850
Dissolved Boron (B)	ug/L	72	10	2884850
Dissolved Cadmium (Cd)	ug/L	ND	0.10	2884850
Dissolved Calcium (Ca)	ug/L	69000	200	2884850
Dissolved Chromium (Cr)	ug/L	ND	5.0	2884850
Dissolved Cobalt (Co)	ug/L	ND	0.50	2884850
Dissolved Copper (Cu)	ug/L	ND	1.0	2884850
Dissolved Iron (Fe)	ug/L	570	100	2884850
Dissolved Lead (Pb)	ug/L	0.66	0.50	2884850
Dissolved Magnesium (Mg)	ug/L	27000	50	2884850
Dissolved Manganese (Mn)	ug/L	31	2.0	2884850
Dissolved Molybdenum (Mo)	ug/L	2.3	0.50	2884850
Dissolved Nickel (Ni)	ug/L	ND	1.0	2884850
Dissolved Phosphorus (P)	ug/L	ND	100	2884850
Dissolved Potassium (K)	ug/L	4400	200	2884850
Dissolved Selenium (Se)	ug/L	ND	2.0	2884850
Dissolved Silicon (Si)	ug/L	5000	50	2884850
Dissolved Silver (Ag)	ug/L	ND	0.10	2884850
Dissolved Sodium (Na)	ug/L	69000	100	2884850
Dissolved Strontium (Sr)	ug/L	730	1.0	2884850
Dissolved Thallium (Tl)	ug/L	0.053	0.050	2884850
Dissolved Titanium (Ti)	ug/L	6.4	5.0	2884850
Dissolved Uranium (U)	ug/L	0.92	0.10	2884850
Dissolved Vanadium (V)	ug/L	0.94	0.50	2884850
Dissolved Zinc (Zn)	ug/L	ND	5.0	2884850

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B287615
Report Date: 2012/06/21

Ian D Wilson Associates Ltd
Client Project #: GREELY

MICROBIOLOGY (WATER)

Maxxam ID		NU4410	
Sampling Date		2012/06/13 14:00	
COC Number		80873	
	Units	**TW2**	**QC Batch**

Microbiological			
Background	CFU/100mL	6	2880334
Total Coliforms	CFU/100mL	0	2880334
Escherichia coli	CFU/100mL	0	2880334

QC Batch = Quality Control Batch

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Maxxam Job #: B287615
Report Date: 2012/06/21

Ian D Wilson Associates Ltd
Client Project #: GREELY

Test Summary

Maxxam ID NU4410
Sample ID TW2
Matrix Water

Collected 2012/06/13
Shipped
Received 2012/06/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Alkalinity	PH	2881112	N/A	2012/06/18	SURINDER RAI
Carbonate, Bicarbonate and Hydroxide	CALC	2879440	N/A	2012/06/19	AUTOMATED STATCHK
Chloride by Automated Colourimetry	AC	2881700	N/A	2012/06/15	DEONARINE RAMNARINE
Colour	SPEC	2881672	N/A	2012/06/15	CHRISTINE PHAM
Conductivity	COND	2881117	N/A	2012/06/18	SURINDER RAI
Dissolved Organic Carbon (DOC)	TOCV/NDIR	2881014	N/A	2012/06/14	CHARLES OPOKU-WARE
Fluoride	F	2881118	2012/06/14	2012/06/15	SURINDER RAI
Hardness (calculated as CaCO3)		2880256	N/A	2012/06/19	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2884850	N/A	2012/06/19	HUA REN
Ion Balance (% Difference)	CALC	2879441	N/A	2012/06/19	AUTOMATED STATCHK
Anion and Cation Sum	CALC	2879442	N/A	2012/06/19	AUTOMATED STATCHK
Coliform/ E. coli, CFU/100mL	PL	2880334	N/A	2012/06/13	MAXIMA HERMANEZ
Total Ammonia-N	LACH/NH4	2883533	N/A	2012/06/21	LEMENEH ADDIS
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	2881083	N/A	2012/06/14	CHRIS LI
pH	PH	2881116	N/A	2012/06/18	SURINDER RAI
Orthophosphate	AC	2881701	N/A	2012/06/15	DEONARINE RAMNARINE
Sat. pH and Langelier Index (@ 20C)	CALC	2879443	N/A	2012/06/19	AUTOMATED STATCHK
Sat. pH and Langelier Index (@ 4C)	CALC	2879444	N/A	2012/06/19	AUTOMATED STATCHK
Sulphate by Automated Colourimetry	AC	2881703	N/A	2012/06/15	DEONARINE RAMNARINE
Total Dissolved Solids (TDS calc)	CALC	2879445	N/A	2012/06/19	AUTOMATED STATCHK
Turbidity	TURB	2880722	N/A	2012/06/14	NEIL DASSANAYAKE

Maxxam ID NU4410 Dup
Sample ID TW2
Matrix Water

Collected 2012/06/13
Shipped
Received 2012/06/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Chloride by Automated Colourimetry	AC	2881700	N/A	2012/06/15	DEONARINE RAMNARINE
Orthophosphate	AC	2881701	N/A	2012/06/15	DEONARINE RAMNARINE
Sulphate by Automated Colourimetry	AC	2881703	N/A	2012/06/15	DEONARINE RAMNARINE

Maxxam ID NU4411
Sample ID EAST MW
Matrix Water

Collected 2012/06/13
Shipped
Received 2012/06/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	2881677	N/A	2012/06/15	CHRIS LI

Maxxam ID NU4412
Sample ID WEST MW
Matrix Water

Collected 2012/06/13
Shipped
Received 2012/06/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	2881677	N/A	2012/06/15	CHRIS LI

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Maxxam Job #: B287615
Report Date: 2012/06/21

Ian D Wilson Associates Ltd
Client Project #: GREELY

Test Summary

Maxxam ID NU4413
Sample ID CENTER MW
Matrix Water

Collected 2012/06/13
Shipped
Received 2012/06/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	2881083	N/A	2012/06/14	CHRIS LI

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Maxxam Job #: B287615
Report Date: 2012/06/21

Ian D Wilson Associates Ltd
Client Project #: GREELY

GENERAL COMMENTS

Results relate only to the items tested.

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Ian D Wilson Associates Ltd
Attention: Geoff Rether
Client Project #: GREELY
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: MB287615

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2880334 GIL	RPD	Background	2012/06/14	NC		%	N/A
		Total Coliforms	2012/06/14	NC		%	N/A
		Escherichia coli	2012/06/14	NC		%	N/A
2880722 NYS	QC Standard	Turbidity	2012/06/14		98	%	85 - 115
	Method Blank	Turbidity	2012/06/14	ND, RDL=0.2		NTU	
	RPD	Turbidity	2012/06/14	NC		%	20
2881014 COP	Matrix Spike	Dissolved Organic Carbon	2012/06/14		91	%	80 - 120
	Spiked Blank	Dissolved Organic Carbon	2012/06/14		89	%	80 - 120
	Method Blank	Dissolved Organic Carbon	2012/06/14	0.22, RDL=0.20		mg/L	
	RPD	Dissolved Organic Carbon	2012/06/14	2.4		%	20
2881083 C_H	Matrix Spike	Nitrite (N)	2012/06/14		94	%	80 - 120
		Nitrate (N)	2012/06/14		NC	%	80 - 120
	Spiked Blank	Nitrite (N)	2012/06/14		93	%	85 - 115
		Nitrate (N)	2012/06/14		96	%	85 - 115
	Method Blank	Nitrite (N)	2012/06/14	ND, RDL=0.010		mg/L	
		Nitrate (N)	2012/06/14	ND, RDL=0.10		mg/L	
	RPD	Nitrite (N)	2012/06/14	4.6		%	25
		Nitrate (N)	2012/06/14	3.0		%	25
2881112 SAU	QC Standard	Alkalinity (Total as CaCO3)	2012/06/18		96	%	85 - 115
		p-Alkalinity	2012/06/18		96	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2012/06/18	ND, RDL=1.0		mg/L	
		p-Alkalinity	2012/06/18	ND, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2012/06/18	0.2		%	25
2881117 SAU	QC Standard	Conductivity	2012/06/18		103	%	85 - 115
	Method Blank	Conductivity	2012/06/18	ND, RDL=1.0		umho/cm	
	RPD	Conductivity	2012/06/18	0.5		%	25
2881118 SAU	Matrix Spike	Fluoride (F-)	2012/06/15		109	%	80 - 120
	Spiked Blank	Fluoride (F-)	2012/06/15		98	%	80 - 120
	Method Blank	Fluoride (F-)	2012/06/15	ND, RDL=0.10		mg/L	
	RPD	Fluoride (F-)	2012/06/15	0.5		%	20
2881672 CP	Spiked Blank	Colour	2012/06/15		98	%	85 - 115
	Method Blank	Colour	2012/06/15	ND, RDL=2		TCU	
	RPD	Colour	2012/06/15	NC		%	25
2881677 C_H	Matrix Spike	Nitrate (N)	2012/06/15		93	%	80 - 120
	Spiked Blank	Nitrate (N)	2012/06/15		94	%	85 - 115
	Method Blank	Nitrate (N)	2012/06/15	ND, RDL=0.10		mg/L	
	RPD	Nitrate (N)	2012/06/15	NC		%	25
2881700 DRM	Matrix Spike [NU4410-01]	Dissolved Chloride (Cl)	2012/06/15		NC	%	75 - 125
	Spiked Blank	Dissolved Chloride (Cl)	2012/06/15		101	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2012/06/15	ND, RDL=1		mg/L	
	RPD [NU4410-01]	Dissolved Chloride (Cl)	2012/06/15	0.1		%	20
2881701 DRM	Matrix Spike [NU4410-01]	Orthophosphate (P)	2012/06/15		115	%	75 - 125
	Spiked Blank	Orthophosphate (P)	2012/06/15		99	%	80 - 120
	Method Blank	Orthophosphate (P)	2012/06/15	ND, RDL=0.010		mg/L	
	RPD [NU4410-01]	Orthophosphate (P)	2012/06/15	NC		%	25
2881703 DRM	Matrix Spike [NU4410-01]	Dissolved Sulphate (SO4)	2012/06/15		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2012/06/15		99	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2012/06/15	ND, RDL=1		mg/L	
	RPD [NU4410-01]	Dissolved Sulphate (SO4)	2012/06/15	0.3		%	20
2883533 L_A	Matrix Spike	Total Ammonia-N	2012/06/21		93	%	80 - 120
	Spiked Blank	Total Ammonia-N	2012/06/21		98	%	85 - 115
	Method Blank	Total Ammonia-N	2012/06/21	ND, RDL=0.050		mg/L	

Ian D Wilson Associates Ltd
Attention: Geoff Rether
Client Project #: GREELY
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB287615

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2883533 L_A	RPD	Total Ammonia-N	2012/06/21	NC		%	20
2884850 HRE	Matrix Spike	Dissolved Aluminum (Al)	2012/06/19		98	%	80 - 120
		Dissolved Antimony (Sb)	2012/06/19		104	%	80 - 120
		Dissolved Arsenic (As)	2012/06/19		106	%	80 - 120
		Dissolved Barium (Ba)	2012/06/19		99	%	80 - 120
		Dissolved Beryllium (Be)	2012/06/19		100	%	80 - 120
		Dissolved Bismuth (Bi)	2012/06/19		100	%	80 - 120
		Dissolved Boron (B)	2012/06/19		97	%	80 - 120
		Dissolved Cadmium (Cd)	2012/06/19		99	%	80 - 120
		Dissolved Calcium (Ca)	2012/06/19		NC	%	80 - 120
		Dissolved Chromium (Cr)	2012/06/19		100	%	80 - 120
		Dissolved Cobalt (Co)	2012/06/19		99	%	80 - 120
		Dissolved Copper (Cu)	2012/06/19		94	%	80 - 120
		Dissolved Iron (Fe)	2012/06/19		104	%	80 - 120
		Dissolved Lead (Pb)	2012/06/19		99	%	80 - 120
		Dissolved Magnesium (Mg)	2012/06/19		NC	%	80 - 120
		Dissolved Manganese (Mn)	2012/06/19		NC	%	80 - 120
		Dissolved Molybdenum (Mo)	2012/06/19		111	%	80 - 120
		Dissolved Nickel (Ni)	2012/06/19		97	%	80 - 120
		Dissolved Phosphorus (P)	2012/06/19		107	%	80 - 120
		Dissolved Potassium (K)	2012/06/19		NC	%	80 - 120
		Dissolved Selenium (Se)	2012/06/19		102	%	80 - 120
		Dissolved Silicon (Si)	2012/06/19		104	%	80 - 120
		Dissolved Silver (Ag)	2012/06/19		81	%	80 - 120
		Dissolved Sodium (Na)	2012/06/19		NC	%	80 - 120
		Dissolved Strontium (Sr)	2012/06/19		NC	%	80 - 120
		Dissolved Thallium (Tl)	2012/06/19		101	%	80 - 120
		Dissolved Titanium (Ti)	2012/06/19		108	%	80 - 120
		Dissolved Uranium (U)	2012/06/19		109	%	80 - 120
		Dissolved Vanadium (V)	2012/06/19		105	%	80 - 120
		Dissolved Zinc (Zn)	2012/06/19		97	%	80 - 120
	Spiked Blank	Dissolved Aluminum (Al)	2012/06/19		94	%	80 - 120
		Dissolved Antimony (Sb)	2012/06/19		96	%	80 - 120
		Dissolved Arsenic (As)	2012/06/19		100	%	80 - 120
		Dissolved Barium (Ba)	2012/06/19		96	%	80 - 120
		Dissolved Beryllium (Be)	2012/06/19		96	%	80 - 120
		Dissolved Bismuth (Bi)	2012/06/19		103	%	80 - 120
		Dissolved Boron (B)	2012/06/19		99	%	80 - 120
		Dissolved Cadmium (Cd)	2012/06/19		98	%	80 - 120
		Dissolved Calcium (Ca)	2012/06/19		96	%	80 - 120
		Dissolved Chromium (Cr)	2012/06/19		95	%	80 - 120
		Dissolved Cobalt (Co)	2012/06/19		96	%	80 - 120
		Dissolved Copper (Cu)	2012/06/19		95	%	80 - 120
		Dissolved Iron (Fe)	2012/06/19		99	%	80 - 120
		Dissolved Lead (Pb)	2012/06/19		102	%	80 - 120
		Dissolved Magnesium (Mg)	2012/06/19		96	%	80 - 120
		Dissolved Manganese (Mn)	2012/06/19		96	%	80 - 120
		Dissolved Molybdenum (Mo)	2012/06/19		99	%	80 - 120
		Dissolved Nickel (Ni)	2012/06/19		95	%	80 - 120
		Dissolved Phosphorus (P)	2012/06/19		97	%	80 - 120
		Dissolved Potassium (K)	2012/06/19		97	%	80 - 120
		Dissolved Selenium (Se)	2012/06/19		100	%	80 - 120
		Dissolved Silicon (Si)	2012/06/19		95	%	80 - 120
		Dissolved Silver (Ag)	2012/06/19		96	%	80 - 120
		Dissolved Sodium (Na)	2012/06/19		95	%	80 - 120

Ian D Wilson Associates Ltd
Attention: Geoff Rether
Client Project #: GREELY
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB287615

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2884850 HRE	Spiked Blank	Dissolved Strontium (Sr)	2012/06/19		97	%	80 - 120
		Dissolved Thallium (Tl)	2012/06/19		105	%	80 - 120
		Dissolved Titanium (Ti)	2012/06/19		98	%	80 - 120
		Dissolved Uranium (U)	2012/06/19		106	%	80 - 120
		Dissolved Vanadium (V)	2012/06/19		96	%	80 - 120
		Dissolved Zinc (Zn)	2012/06/19		100	%	80 - 120
	Method Blank	Dissolved Aluminum (Al)	2012/06/19	ND, RDL=5.0		ug/L	
		Dissolved Antimony (Sb)	2012/06/19	ND, RDL=0.50		ug/L	
		Dissolved Arsenic (As)	2012/06/19	ND, RDL=1.0		ug/L	
		Dissolved Barium (Ba)	2012/06/19	ND, RDL=2.0		ug/L	
		Dissolved Beryllium (Be)	2012/06/19	ND, RDL=0.50		ug/L	
		Dissolved Bismuth (Bi)	2012/06/19	ND, RDL=1.0		ug/L	
		Dissolved Boron (B)	2012/06/19	ND, RDL=10		ug/L	
		Dissolved Cadmium (Cd)	2012/06/19	ND, RDL=0.10		ug/L	
		Dissolved Calcium (Ca)	2012/06/19	ND, RDL=200		ug/L	
		Dissolved Chromium (Cr)	2012/06/19	ND, RDL=5.0		ug/L	
		Dissolved Cobalt (Co)	2012/06/19	ND, RDL=0.50		ug/L	
		Dissolved Copper (Cu)	2012/06/19	ND, RDL=1.0		ug/L	
		Dissolved Iron (Fe)	2012/06/19	ND, RDL=100		ug/L	
		Dissolved Lead (Pb)	2012/06/19	ND, RDL=0.50		ug/L	
		Dissolved Magnesium (Mg)	2012/06/19	ND, RDL=50		ug/L	
		Dissolved Manganese (Mn)	2012/06/19	ND, RDL=2.0		ug/L	
		Dissolved Molybdenum (Mo)	2012/06/19	ND, RDL=0.50		ug/L	
		Dissolved Nickel (Ni)	2012/06/19	ND, RDL=1.0		ug/L	
		Dissolved Phosphorus (P)	2012/06/19	ND, RDL=100		ug/L	
		Dissolved Potassium (K)	2012/06/19	ND, RDL=200		ug/L	
		Dissolved Selenium (Se)	2012/06/19	ND, RDL=2.0		ug/L	
		Dissolved Silicon (Si)	2012/06/19	ND, RDL=50		ug/L	
		Dissolved Silver (Ag)	2012/06/19	ND, RDL=0.10		ug/L	
		Dissolved Sodium (Na)	2012/06/19	ND, RDL=100		ug/L	
		Dissolved Strontium (Sr)	2012/06/19	ND, RDL=1.0		ug/L	
		Dissolved Thallium (Tl)	2012/06/19	ND, RDL=0.050		ug/L	
		Dissolved Titanium (Ti)	2012/06/19	ND, RDL=5.0		ug/L	
		Dissolved Uranium (U)	2012/06/19	ND, RDL=0.10		ug/L	
		Dissolved Vanadium (V)	2012/06/19	0.59, RDL=0.50		ug/L	
		Dissolved Zinc (Zn)	2012/06/19	ND, RDL=5.0		ug/L	
	RPD	Dissolved Lead (Pb)	2012/06/19	NC		%	20

N/A = Not Applicable
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B287615

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

CRISTINA CARRIERE, Scientific Services

Maxima C. Hermanez

MAXIMA HERMANEZ, SENIOR ANALYST

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Maxxam

Success Through Science

Your Project #: GREELY
Your C.O.C. #: 69709

Attention: Geoff Rether
Ian D Wilson Associates Ltd
PO Box 299
76722 Airport Rd
Clinton, ON
N0M 1L0

Report Date: 2012/06/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B290836
Received: 2012/06/19, 19:04

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	2	N/A	2012/06/21	CAM SOP-00448	SM 2320B
Carbonate, Bicarbonate and Hydroxide	2	N/A	2012/06/22	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	2	N/A	2012/06/22	CAM SOP-00463	EPA 325.2
Colour	2	N/A	2012/06/21	CAM SOP-00412	APHA 2120
Conductivity	2	N/A	2012/06/21	CAM SOP-00448	SM 2510
Dissolved Organic Carbon (DOC)	2	N/A	2012/06/21	CAM SOP-00446	SM 5310 B
Fluoride	2	2012/06/20	2012/06/21	CAM SOP-00448	APHA 4500FC
Hardness (calculated as CaCO3)	2	N/A	2012/06/21	CAM SOP 00102	SM 2340 B
Lab Filtered Metals by ICPMS	2	2012/06/21	2012/06/21	CAM SOP-00447	EPA 6020
Ion Balance (% Difference)	2	N/A	2012/06/22		
Anion and Cation Sum	2	N/A	2012/06/22		
Coliform/ E. coli, CFU/100mL	2	N/A	2012/06/20	CAM SOP-00551	MOE E3407
Total Ammonia-N	2	N/A	2012/06/24	CAM SOP-00441	US GS I-2522-90
Nitrate (NO3) and Nitrite (NO2) in Water (1)	2	N/A	2012/06/21	CAM SOP-00440	SM 4500 NO3I/NO2B
pH	2	N/A	2012/06/21	CAM SOP-00448	SM 4500H+ B
Orthophosphate	2	N/A	2012/06/22	CAM SOP-00461	EPA 365.1
Sat. pH and Langelier Index (@ 20C)	2	N/A	2012/06/22		
Sat. pH and Langelier Index (@ 4C)	2	N/A	2012/06/22		
Sulphate by Automated Colourimetry	2	N/A	2012/06/22	CAM SOP-00464	EPA 375.4
Total Dissolved Solids (TDS calc)	2	N/A	2012/06/22		
Turbidity	2	N/A	2012/06/21	CAM SOP-00417	APHA 2130B

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and

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Your Project #: GREELY
Your C.O.C. #: 69709

Attention: Geoff Rether
Ian D Wilson Associates Ltd
PO Box 299
76722 Airport Rd
Clinton, ON
N0M 1L0

Report Date: 2012/06/25

CERTIFICATE OF ANALYSIS

performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Christine Gripton
26 Jun 2012 13:36:41 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

CHRISTINE GRIPTON, Project Manager
Email: CGripton@maxxam.ca
Phone# (800) 268-7396 Ext:250

==========

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Total cover pages: 2

Maxxam Job #: B290836
Report Date: 2012/06/25

Ian D Wilson Associates Ltd
Client Project #: GREELY

RESULTS OF ANALYSES OF WATER

Maxxam ID		NV9100		NV9101		
Sampling Date		2012/06/19 14:15		2012/06/19 14:30		
COC Number		69709		69709		
	Units	**TW 1**	**RDL**	**TW 3**	**RDL**	**QC Batch**
Calculated Parameters						
Anion Sum	me/L	10.6	N/A	4.06	N/A	2885974
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	240	1.0	170	1.0	2885970
Calculated TDS	mg/L	580	1.0	213	1.0	2885977
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.9	1.0	1.9	1.0	2885970
Cation Sum	me/L	10.9	N/A	3.90	N/A	2885974
Hardness (CaCO3)	mg/L	340	1.0	170	1.0	2885972
Ion Balance (% Difference)	%	1.57	N/A	2.02	N/A	2885973
Langelier Index (@ 20C)	N/A	0.705		0.543		2885975
Langelier Index (@ 4C)	N/A	0.457		0.293		2885976
Saturation pH (@ 20C)	N/A	7.21		7.54		2885975
Saturation pH (@ 4C)	N/A	7.46		7.79		2885976
Inorganics						
Total Ammonia-N	mg/L	ND	0.050	ND	0.050	2889192
Colour	TCU	ND	2	ND	2	2887256
Conductivity	umho/cm	1100	1.0	380	1.0	2886947
Fluoride (F-)	mg/L	0.37	0.10	0.24	0.10	2886948
Dissolved Organic Carbon	mg/L	1.1	0.20	0.87	0.20	2887198
Orthophosphate (P)	mg/L	ND	0.010	ND	0.010	2888245
pH	pH	7.92		8.08		2886949
Dissolved Sulphate (SO4)	mg/L	53	1	28	1	2888246
Turbidity	NTU	8.5	0.2	3.9	0.2	2886890
Alkalinity (Total as CaCO3)	mg/L	250	1.0	170	1.0	2886946
Dissolved Chloride (Cl)	mg/L	160	2	2	1	2888243
Nitrite (N)	mg/L	ND	0.010	ND	0.010	2886960
Nitrate (N)	mg/L	ND	0.10	ND	0.10	2886960

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B290836
Report Date: 2012/06/25

Ian D Wilson Associates Ltd
Client Project #: GREELY

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		NV9100	NV9101		
Sampling Date		2012/06/19 14:15	2012/06/19 14:30		
COC Number		69709	69709		
	Units	**TW 1**	**TW 3**	**RDL**	**QC Batch**
Metals					
Dissolved Aluminum (Al)	ug/L	ND	ND	5.0	2887087
Dissolved Antimony (Sb)	ug/L	ND	ND	0.50	2887087
Dissolved Arsenic (As)	ug/L	ND	ND	1.0	2887087
Dissolved Barium (Ba)	ug/L	160	84	2.0	2887087
Dissolved Beryllium (Be)	ug/L	ND	ND	0.50	2887087
Dissolved Boron (B)	ug/L	110	43	10	2887087
Dissolved Cadmium (Cd)	ug/L	ND	ND	0.10	2887087
Dissolved Calcium (Ca)	ug/L	76000	42000	200	2887087
Dissolved Chromium (Cr)	ug/L	ND	ND	5.0	2887087
Dissolved Cobalt (Co)	ug/L	ND	ND	0.50	2887087
Dissolved Copper (Cu)	ug/L	ND	ND	1.0	2887087
Dissolved Iron (Fe)	ug/L	ND	ND	100	2887087
Dissolved Lead (Pb)	ug/L	ND	ND	0.50	2887087
Dissolved Magnesium (Mg)	ug/L	37000	16000	50	2887087
Dissolved Manganese (Mn)	ug/L	30	17	2.0	2887087
Dissolved Molybdenum (Mo)	ug/L	4.1	2.7	0.50	2887087
Dissolved Nickel (Ni)	ug/L	ND	ND	1.0	2887087
Dissolved Phosphorus (P)	ug/L	ND	ND	100	2887087
Dissolved Potassium (K)	ug/L	7200	3200	200	2887087
Dissolved Selenium (Se)	ug/L	ND	ND	2.0	2887087
Dissolved Silicon (Si)	ug/L	4400	4800	50	2887087
Dissolved Silver (Ag)	ug/L	ND	ND	0.10	2887087
Dissolved Sodium (Na)	ug/L	89000	8200	100	2887087
Dissolved Strontium (Sr)	ug/L	2300	420	1.0	2887087
Dissolved Thallium (Tl)	ug/L	ND	ND	0.050	2887087
Dissolved Titanium (Ti)	ug/L	ND	ND	5.0	2887087
Dissolved Uranium (U)	ug/L	0.31	ND	0.10	2887087
Dissolved Vanadium (V)	ug/L	ND	ND	0.50	2887087
Dissolved Zinc (Zn)	ug/L	ND	ND	5.0	2887087

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B290836
Report Date: 2012/06/25

Ian D Wilson Associates Ltd
Client Project #: GREELY

MICROBIOLOGY (WATER)

Maxxam ID		NV9100	NV9101	
Sampling Date		2012/06/19 14:15	2012/06/19 14:30	
COC Number		69709	69709	
	Units	**TW 1**	**TW 3**	**QC Batch**
Microbiological				
Background	CFU/100mL	0	1	2886320
Total Coliforms	CFU/100mL	0	0	2886320
Escherichia coli	CFU/100mL	0	0	2886320

QC Batch = Quality Control Batch

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Maxxam Job #: B290836
Report Date: 2012/06/25

Ian D Wilson Associates Ltd
Client Project #: GREELY

Test Summary

Maxxam ID NV9100
Sample ID TW 1
Matrix Water

Collected 2012/06/19
Shipped
Received 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Alkalinity	PH	2886946	N/A	2012/06/21	SURINDER RAI
Carbonate, Bicarbonate and Hydroxide	CALC	2885970	N/A	2012/06/22	AUTOMATED STATCHK
Chloride by Automated Colourimetry	AC	2888243	N/A	2012/06/22	DEONARINE RAMNARINE
Colour	SPEC	2887256	N/A	2012/06/21	CHRISTINE PHAM
Conductivity	COND	2886947	N/A	2012/06/21	SURINDER RAI
Dissolved Organic Carbon (DOC)	TOCV/NDIR	2887198	N/A	2012/06/21	CHARLES OPOKU-WARE
Fluoride	F	2886948	2012/06/20	2012/06/21	SURINDER RAI
Hardness (calculated as CaCO3)		2885972	N/A	2012/06/21	AUTOMATED STATCHK
Lab Filtered Metals by ICPMS	ICP/MS	2887087	2012/06/21	2012/06/21	AREFA DABHAD
Ion Balance (% Difference)	CALC	2885973	N/A	2012/06/22	AUTOMATED STATCHK
Anion and Cation Sum	CALC	2885974	N/A	2012/06/22	AUTOMATED STATCHK
Coliform/ E. coli, CFU/100mL	PL	2886320	N/A	2012/06/20	THARMINI SIVALINGAM
Total Ammonia-N	LACH/NH4	2889192	N/A	2012/06/24	LEMENEH ADDIS
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	2886960	N/A	2012/06/21	CHRIS LI
pH	PH	2886949	N/A	2012/06/21	SURINDER RAI
Orthophosphate	AC	2888245	N/A	2012/06/22	DEONARINE RAMNARINE
Sat. pH and Langelier Index (@ 20C)	CALC	2885975	N/A	2012/06/22	AUTOMATED STATCHK
Sat. pH and Langelier Index (@ 4C)	CALC	2885976	N/A	2012/06/22	AUTOMATED STATCHK
Sulphate by Automated Colourimetry	AC	2888246	N/A	2012/06/22	DEONARINE RAMNARINE
Total Dissolved Solids (TDS calc)	CALC	2885977	N/A	2012/06/22	AUTOMATED STATCHK
Turbidity	TURB	2886890	N/A	2012/06/21	NEIL DASSANAYAKE

Maxxam ID NV9100 Dup
Sample ID TW 1
Matrix Water

Collected 2012/06/19
Shipped
Received 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Alkalinity	PH	2886946	N/A	2012/06/21	SURINDER RAI
Colour	SPEC	2887256	N/A	2012/06/21	CHRISTINE PHAM
Conductivity	COND	2886947	N/A	2012/06/21	SURINDER RAI
Fluoride	F	2886948	2012/06/20	2012/06/21	SURINDER RAI
pH	PH	2886949	N/A	2012/06/21	SURINDER RAI

Maxxam ID NV9101
Sample ID TW 3
Matrix Water

Collected 2012/06/19
Shipped
Received 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Alkalinity	PH	2886946	N/A	2012/06/21	SURINDER RAI
Carbonate, Bicarbonate and Hydroxide	CALC	2885970	N/A	2012/06/22	AUTOMATED STATCHK
Chloride by Automated Colourimetry	AC	2888243	N/A	2012/06/22	DEONARINE RAMNARINE
Colour	SPEC	2887256	N/A	2012/06/21	CHRISTINE PHAM
Conductivity	COND	2886947	N/A	2012/06/21	SURINDER RAI
Dissolved Organic Carbon (DOC)	TOCV/NDIR	2887198	N/A	2012/06/21	CHARLES OPOKU-WARE
Fluoride	F	2886948	2012/06/20	2012/06/21	SURINDER RAI
Hardness (calculated as CaCO3)		2885972	N/A	2012/06/21	AUTOMATED STATCHK
Lab Filtered Metals by ICPMS	ICP/MS	2887087	2012/06/21	2012/06/21	AREFA DABHAD
Ion Balance (% Difference)	CALC	2885973	N/A	2012/06/22	AUTOMATED STATCHK
Anion and Cation Sum	CALC	2885974	N/A	2012/06/22	AUTOMATED STATCHK
Coliform/ E. coli, CFU/100mL	PL	2886320	N/A	2012/06/20	THARMINI SIVALINGAM
Total Ammonia-N	LACH/NH4	2889192	N/A	2012/06/24	LEMENEH ADDIS
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	2886960	N/A	2012/06/21	CHRIS LI

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Maxxam Job #: B290836
Report Date: 2012/06/25

Ian D Wilson Associates Ltd
Client Project #: GREELY

Test Summary

pH	PH	2886949	N/A	2012/06/21	SURINDER RAI
Orthophosphate	AC	2888245	N/A	2012/06/22	DEONARINE RAMNARINE
Sat. pH and Langelier Index (@ 20C)	CALC	2885975	N/A	2012/06/22	AUTOMATED STATCHK
Sat. pH and Langelier Index (@ 4C)	CALC	2885976	N/A	2012/06/22	AUTOMATED STATCHK
Sulphate by Automated Colourimetry	AC	2888246	N/A	2012/06/22	DEONARINE RAMNARINE
Total Dissolved Solids (TDS calc)	CALC	2885977	N/A	2012/06/22	AUTOMATED STATCHK
Turbidity	TURB	2886890	N/A	2012/06/21	NEIL DASSANAYAKE

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Maxxam Job #: B290836
Report Date: 2012/06/25

Ian D Wilson Associates Ltd
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GENERAL COMMENTS

Results relate only to the items tested.

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Ian D Wilson Associates Ltd
Attention: Geoff Rether
Client Project #: GREELY
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: MB290836

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2886320 VGU	RPD	Background	2012/06/21	NC		%	N/A
		Total Coliforms	2012/06/21	NC		%	N/A
		Escherichia coli	2012/06/21	NC		%	N/A
2886890 NYS	QC Standard	Turbidity	2012/06/20		96	%	85 - 115
	Method Blank	Turbidity	2012/06/21	ND, RDL=0.2		NTU	
	RPD	Turbidity	2012/06/21	1.2		%	20
2886946 SAU	QC Standard	Alkalinity (Total as CaCO3)	2012/06/21		95	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2012/06/21	ND, RDL=1.0		mg/L	
	RPD [NV9100-01]	Alkalinity (Total as CaCO3)	2012/06/21	0.9		%	25
2886947 SAU	QC Standard	Conductivity	2012/06/21		103	%	85 - 115
	Method Blank	Conductivity	2012/06/21	ND, RDL=1.0		umho/cm	
	RPD [NV9100-01]	Conductivity	2012/06/21	0.3		%	25
2886948 SAU	Matrix Spike [NV9100-01]	Fluoride (F-)	2012/06/21		104	%	80 - 120
	Spiked Blank	Fluoride (F-)	2012/06/21		101	%	80 - 120
	Method Blank	Fluoride (F-)	2012/06/21	ND, RDL=0.10		mg/L	
	RPD [NV9100-01]	Fluoride (F-)	2012/06/21	NC		%	20
2886960 C_H	Matrix Spike	Nitrite (N)	2012/06/21		95	%	80 - 120
		Nitrate (N)	2012/06/21		100	%	80 - 120
	Spiked Blank	Nitrite (N)	2012/06/21		91	%	85 - 115
		Nitrate (N)	2012/06/21		98	%	85 - 115
	Method Blank	Nitrite (N)	2012/06/21	ND, RDL=0.010		mg/L	
		Nitrate (N)	2012/06/21	ND, RDL=0.10		mg/L	
	RPD	Nitrite (N)	2012/06/21	NC		%	25
		Nitrate (N)	2012/06/21	NC		%	25
2887087 ADA	Matrix Spike	Dissolved Aluminum (Al)	2012/06/21		100	%	80 - 120
		Dissolved Antimony (Sb)	2012/06/21		103	%	80 - 120
		Dissolved Arsenic (As)	2012/06/21		103	%	80 - 120
		Dissolved Barium (Ba)	2012/06/21		102	%	80 - 120
		Dissolved Beryllium (Be)	2012/06/21		103	%	80 - 120
		Dissolved Boron (B)	2012/06/21		101	%	80 - 120
		Dissolved Cadmium (Cd)	2012/06/21		102	%	80 - 120
		Dissolved Calcium (Ca)	2012/06/21		NC	%	80 - 120
		Dissolved Chromium (Cr)	2012/06/21		100	%	80 - 120
		Dissolved Cobalt (Co)	2012/06/21		98	%	80 - 120
		Dissolved Copper (Cu)	2012/06/21		98	%	80 - 120
		Dissolved Iron (Fe)	2012/06/21		98	%	80 - 120
		Dissolved Lead (Pb)	2012/06/21		97	%	80 - 120
		Dissolved Magnesium (Mg)	2012/06/21		103	%	80 - 120
		Dissolved Manganese (Mn)	2012/06/21		96	%	80 - 120
		Dissolved Molybdenum (Mo)	2012/06/21		105	%	80 - 120
		Dissolved Nickel (Ni)	2012/06/21		99	%	80 - 120
		Dissolved Phosphorus (P)	2012/06/21		106	%	80 - 120
		Dissolved Potassium (K)	2012/06/21		101	%	80 - 120
		Dissolved Selenium (Se)	2012/06/21		102	%	80 - 120
		Dissolved Silicon (Si)	2012/06/21		101	%	80 - 120
		Dissolved Silver (Ag)	2012/06/21		98	%	80 - 120
		Dissolved Sodium (Na)	2012/06/21		NC	%	80 - 120
		Dissolved Strontium (Sr)	2012/06/21		105	%	80 - 120
		Dissolved Thallium (Tl)	2012/06/21		99	%	80 - 120
		Dissolved Titanium (Ti)	2012/06/21		102	%	80 - 120
		Dissolved Uranium (U)	2012/06/21		101	%	80 - 120
		Dissolved Vanadium (V)	2012/06/21		102	%	80 - 120
		Dissolved Zinc (Zn)	2012/06/21		99	%	80 - 120
	Spiked Blank	Dissolved Aluminum (Al)	2012/06/21		99	%	80 - 120

Ian D Wilson Associates Ltd
Attention: Geoff Rether
Client Project #: GREELY
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB290836

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2887087 ADA	Spiked Blank	Dissolved Antimony (Sb)	2012/06/21		99	%	80 - 120
		Dissolved Arsenic (As)	2012/06/21		99	%	80 - 120
		Dissolved Barium (Ba)	2012/06/21		101	%	80 - 120
		Dissolved Beryllium (Be)	2012/06/21		102	%	80 - 120
		Dissolved Boron (B)	2012/06/21		97	%	80 - 120
		Dissolved Cadmium (Cd)	2012/06/21		99	%	80 - 120
		Dissolved Calcium (Ca)	2012/06/21		99	%	80 - 120
		Dissolved Chromium (Cr)	2012/06/21		98	%	80 - 120
		Dissolved Cobalt (Co)	2012/06/21		96	%	80 - 120
		Dissolved Copper (Cu)	2012/06/21		98	%	80 - 120
		Dissolved Iron (Fe)	2012/06/21		96	%	80 - 120
		Dissolved Lead (Pb)	2012/06/21		95	%	80 - 120
		Dissolved Magnesium (Mg)	2012/06/21		95	%	80 - 120
		Dissolved Manganese (Mn)	2012/06/21		94	%	80 - 120
		Dissolved Molybdenum (Mo)	2012/06/21		100	%	80 - 120
		Dissolved Nickel (Ni)	2012/06/21		97	%	80 - 120
		Dissolved Phosphorus (P)	2012/06/21		102	%	80 - 120
		Dissolved Potassium (K)	2012/06/21		99	%	80 - 120
		Dissolved Selenium (Se)	2012/06/21		99	%	80 - 120
		Dissolved Silicon (Si)	2012/06/21		98	%	80 - 120
		Dissolved Silver (Ag)	2012/06/21		96	%	80 - 120
		Dissolved Sodium (Na)	2012/06/21		98	%	80 - 120
		Dissolved Strontium (Sr)	2012/06/21		94	%	80 - 120
		Dissolved Thallium (Tl)	2012/06/21		97	%	80 - 120
		Dissolved Titanium (Ti)	2012/06/21		99	%	80 - 120
		Dissolved Uranium (U)	2012/06/21		97	%	80 - 120
		Dissolved Vanadium (V)	2012/06/21		99	%	80 - 120
		Dissolved Zinc (Zn)	2012/06/21		98	%	80 - 120
	Method Blank	Dissolved Aluminum (Al)	2012/06/21	ND, RDL=5.0		ug/L	
		Dissolved Antimony (Sb)	2012/06/21	ND, RDL=0.50		ug/L	
		Dissolved Arsenic (As)	2012/06/21	ND, RDL=1.0		ug/L	
		Dissolved Barium (Ba)	2012/06/21	ND, RDL=2.0		ug/L	
		Dissolved Beryllium (Be)	2012/06/21	ND, RDL=0.50		ug/L	
		Dissolved Boron (B)	2012/06/21	ND, RDL=10		ug/L	
		Dissolved Cadmium (Cd)	2012/06/21	ND, RDL=0.10		ug/L	
		Dissolved Calcium (Ca)	2012/06/21	ND, RDL=200		ug/L	
		Dissolved Chromium (Cr)	2012/06/21	ND, RDL=5.0		ug/L	
		Dissolved Cobalt (Co)	2012/06/21	ND, RDL=0.50		ug/L	
		Dissolved Copper (Cu)	2012/06/21	ND, RDL=1.0		ug/L	
		Dissolved Iron (Fe)	2012/06/21	ND, RDL=100		ug/L	
		Dissolved Lead (Pb)	2012/06/21	ND, RDL=0.50		ug/L	
		Dissolved Magnesium (Mg)	2012/06/21	ND, RDL=50		ug/L	
		Dissolved Manganese (Mn)	2012/06/21	ND, RDL=2.0		ug/L	
		Dissolved Molybdenum (Mo)	2012/06/21	ND, RDL=0.50		ug/L	
		Dissolved Nickel (Ni)	2012/06/21	ND, RDL=1.0		ug/L	
		Dissolved Phosphorus (P)	2012/06/21	ND, RDL=100		ug/L	
		Dissolved Potassium (K)	2012/06/21	ND, RDL=200		ug/L	
		Dissolved Selenium (Se)	2012/06/21	ND, RDL=2.0		ug/L	
		Dissolved Silicon (Si)	2012/06/21	ND, RDL=50		ug/L	
		Dissolved Silver (Ag)	2012/06/21	ND, RDL=0.10		ug/L	
		Dissolved Sodium (Na)	2012/06/21	ND, RDL=100		ug/L	
		Dissolved Strontium (Sr)	2012/06/21	ND, RDL=1.0		ug/L	
		Dissolved Thallium (Tl)	2012/06/21	ND, RDL=0.050		ug/L	
		Dissolved Titanium (Ti)	2012/06/21	ND, RDL=5.0		ug/L	
		Dissolved Uranium (U)	2012/06/21	ND, RDL=0.10		ug/L	

Ian D Wilson Associates Ltd
Attention: Geoff Rether
Client Project #: GREELY
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB290836

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2887087	ADA	Method Blank	Dissolved Vanadium (V)	2012/06/21	ND, RDL=0.50		ug/L	
			Dissolved Zinc (Zn)	2012/06/21	ND, RDL=5.0		ug/L	
		RPD	Dissolved Aluminum (Al)	2012/06/21	NC		%	20
			Dissolved Antimony (Sb)	2012/06/21	NC		%	20
			Dissolved Arsenic (As)	2012/06/21	NC		%	20
			Dissolved Barium (Ba)	2012/06/21	1.1		%	20
			Dissolved Beryllium (Be)	2012/06/21	NC		%	20
			Dissolved Boron (B)	2012/06/21	NC		%	20
			Dissolved Cadmium (Cd)	2012/06/21	NC		%	20
			Dissolved Calcium (Ca)	2012/06/21	1.1		%	20
			Dissolved Chromium (Cr)	2012/06/21	NC		%	20
			Dissolved Cobalt (Co)	2012/06/21	NC		%	20
			Dissolved Copper (Cu)	2012/06/21	0.3		%	20
			Dissolved Iron (Fe)	2012/06/21	NC		%	20
			Dissolved Lead (Pb)	2012/06/21	NC		%	20
			Dissolved Magnesium (Mg)	2012/06/21	1.2		%	20
			Dissolved Manganese (Mn)	2012/06/21	NC		%	20
			Dissolved Molybdenum (Mo)	2012/06/21	NC		%	20
			Dissolved Nickel (Ni)	2012/06/21	NC		%	20
			Dissolved Phosphorus (P)	2012/06/21	NC		%	20
			Dissolved Potassium (K)	2012/06/21	NC		%	20
			Dissolved Selenium (Se)	2012/06/21	NC		%	20
			Dissolved Silicon (Si)	2012/06/21	0.03		%	20
			Dissolved Silver (Ag)	2012/06/21	NC		%	20
			Dissolved Sodium (Na)	2012/06/21	2.7		%	20
			Dissolved Strontium (Sr)	2012/06/21	0.3		%	20
			Dissolved Thallium (Tl)	2012/06/21	NC		%	20
			Dissolved Titanium (Ti)	2012/06/21	NC		%	20
			Dissolved Uranium (U)	2012/06/21	NC		%	20
			Dissolved Vanadium (V)	2012/06/21	NC		%	20
			Dissolved Zinc (Zn)	2012/06/21	NC		%	20
2887198	COP	Matrix Spike	Dissolved Organic Carbon	2012/06/21		97	%	80 - 120
		Spiked Blank	Dissolved Organic Carbon	2012/06/21		91	%	80 - 120
		Method Blank	Dissolved Organic Carbon	2012/06/21	ND, RDL=0.20		mg/L	
		RPD	Dissolved Organic Carbon	2012/06/21	2.1		%	20
2887256	CP	Spiked Blank	Colour	2012/06/21		100	%	85 - 115
		Method Blank	Colour	2012/06/21	ND, RDL=2		TCU	
		RPD [NV9100-01]	Colour	2012/06/21	NC		%	25
2888243	DRM	Matrix Spike	Dissolved Chloride (Cl)	2012/06/22		NC	%	75 - 125
		Spiked Blank	Dissolved Chloride (Cl)	2012/06/22		104	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2012/06/22	ND, RDL=1		mg/L	
		RPD	Dissolved Chloride (Cl)	2012/06/22	0.1		%	20
2888245	DRM	Matrix Spike	Orthophosphate (P)	2012/06/22		112	%	75 - 125
		Spiked Blank	Orthophosphate (P)	2012/06/22		99	%	80 - 120
		Method Blank	Orthophosphate (P)	2012/06/22	ND, RDL=0.010		mg/L	
		RPD	Orthophosphate (P)	2012/06/22	NC		%	25
2888246	DRM	Matrix Spike	Dissolved Sulphate (SO4)	2012/06/22		NC	%	75 - 125
		Spiked Blank	Dissolved Sulphate (SO4)	2012/06/22		97	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2012/06/22	ND, RDL=1		mg/L	
		RPD	Dissolved Sulphate (SO4)	2012/06/22	0.7		%	20
2889192	L_A	Matrix Spike	Total Ammonia-N	2012/06/24		100	%	80 - 120
		Spiked Blank	Total Ammonia-N	2012/06/24		99	%	85 - 115
		Method Blank	Total Ammonia-N	2012/06/24	ND, RDL=0.050		mg/L	
		RPD	Total Ammonia-N	2012/06/24	NC		%	20

N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Ian D Wilson Associates Ltd
Attention: Geoff Rether
Client Project #: GREELY
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB290836

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B290836

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

CRISTINA CARRIERE, Scientific Services

THARMINI SIVALINGAM, Team Leader

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Ontario Ministry of the Environment

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Tag#: A128072

Well: A129872

Measurements recorded in: ☐ Metric ☒ Imperial

Well Owner's Information

First Name | Last Name / Organization: Eastview Sand & Gravel Limited | E-mail Address: Canadian Soil Drilling | ☐ Well Constructed by me (Owner)

Mailing Address (Street Number/Name): Box 190. R.R. # 1 | Municipality: Greely | Province: ON | Postal Code: K4P 1N5 | Telephone No. (inc. area code)

Well Location

Address of Well Location (Street Number/Name): 5639 Bank Streeet | Township: Osgoode | Lot: Pt. 1 | Concession: 5

County/District/Municipality: Ottawa-Carleton | City/Town/Village: Greely | Province: Ontario | Postal Code

UTM Coordinates: Zone: 18 | Easting: 455253 | Northing: 5014126 | Municipal Plan and Sublot Number | Other

NAD 8 3

Overburden and Bedrock (Record from instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
	Sand & Gravel		Boulders	0	48
Grey	Limestone			48	156
White	Sandstone	w/Grey	Limestone	156	164
White	Sandstone	w/Grey	Limestone	164	181
White	Sandstone	w/Grey	Limestone	181	192
White	Sandstone	w/Grey	Limestone	192	200

WELL #1

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
62	52	Neatcement	15.8
52	0	Bentonite slurry	37.8

Method of Construction

☐ Cable Tool ☐ Diamond ☐ Rotary (Conventional) ☐ Jetting ☐ Rotary (Reverse) ☐ Driving ☐ Boring ☐ Digging ☒ Air percussion ☐ Other (specify)

Well Use

☐ Public ☐ Commercial ☐ Not used ☒ Domestic ☐ Municipal ☐ Dewatering ☐ Livestock ☐ Test Hole ☐ Monitoring ☐ Irrigation ☐ Cooling & Air Conditioning ☐ Industrial ☐ Other (specify)

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
6"	Steel	188	+2'	62'
5 15/16"	Open Hole		62'	200'

Construction Record - Screen

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

Status of Well

☒ 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)

Water Details

Water found at Depth (m/ft)	Kind of Water		Hole Diameter Depth (m/ft) From	To	Diameter (cm/in)
164	☐ Fresh ☒ Untested ☐ Gas ☐ Other (specify)		0 FT	62 FT	6"
181	☐ Fresh ☒ Untested ☐ Gas ☐ Other (specify)		62 FT	200 FT	5 15/16"
192	☐ Fresh ☒ Untested ☐ Gas ☐ Other (specify)				

Well Contractor and Well Technician Information

Business Name of Well Contractor: CANADIAN SOIL DRILLING | Well Contractor's Licence No: 2233

Business Address (Street Number/Name): 12493 Hwy 27 NORTH | Municipality: Springwater

Province: ON | Postal Code: L0L 1X0 | Business E-mail Address: CanadianSoil@gmail.com

Business Telephone No. (inc. area code): 705 730 7645 | Name of Well Technician (Last Name, First Name): JAMIE ARCHER

Well Technician's Licence No: T3632 | Signature of Technician and/or Contractor | Date Submitted: 2012 05 31

After test of well yield, water was:

☐ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft): 190

Pumping rate (l/min / GPM): 20

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 89.6

If flowing give rate (l/min / GPM):

Recommended pump depth (m/ft): 190

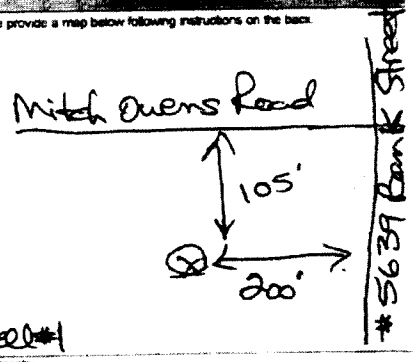
Recommended pump rate (l/min / GPM): 20

Well production (l/min / GPM): 20

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Water Level (m/ft)	Recovery Time (min)	Water Level (m/ft)
Static Level	34.4		89.6
1	42.8	1	58.6
2	48	2	50.5
3	53.7	3	45.5
4	57.1	4	41.5
5	59.6	5	38.5
10	67.9	10	34.4
15	70.6	15	34.4
20	73.2	20	34.4
25	74	25	34.4
30	75	30	34.4
40	77	40	34.4
50	79	50	34.4
60	80.6	60	34.4

Please provide a map below following instructions on the back.



WELL #1

Comments: 10 HP - 10 GPM set @ 140 ft.

Well owner's information package delivered: ☒ Yes ☐ No

Date Package Delivered: Y M D

Date Work Completed: 2012 05 01

Audit No. Z128560

Ministry's Copy

Ontario Ministry of the Environment

Tag#: A128073

A128073

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: Metric / Imperial

Page ____ of ____

Well Owner's Information

First Name | Last Name / Organization: Eastview Sand & Gravel Limited | E-mail Address: Canadian Soil Drilling | Well Constructed for Well Owner

Mailing Address (Street Number/Name): Box 190, R.R. # 1 | Municipality: Greely | Province: ON | Postal Code: K4P 1N5 | Telephone No. (incl. area code)

Well Location

Address of Well Location (Street Number/Name): 5639 Bank Street | Township: Osgoode | Lot: Pt: 1 | Concession: 5

County/District/Municipality: Ottawa-Carleton | City/Town/Village: Greely | Province: Ontario | Postal Code:

UTM Coordinates: Zone | Easting | Northing | Municipal Plan and Sublot Number | Other

NAD 8 3 18 455053 5013959

Overburden and Bedrock Record (see instructions on the back)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
	Clay	& Boulders		0'	16'
	Sand & Gravel	& Boulders		16'	48'
Grey	Limestone			48'	170'
Grey	Limestone	w/ White	Sand stone	170'	171'
Grey	Limestone	w/ White	Sand Stone	171'	178'
Grey	Limestone	w/ White	Sand Stone	178'	190'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
60'	59'	Neat cement	10.9
50'	0'	Bentonite slurry	33.6

Method of Construction

Cable Tool / Rotary (Conventional) / Rotary (Reverse) / Boring / Air percussion / Other specify

Diamond / Jetting / Driving / Digging

Well Use

Public / Domestic / Livestock / Irrigation / Industrial / Other specify

Commercial / Municipal / Test Hole / Cooling & Air Conditioning

Not used / Dewatering / Monitoring

Construction Record - Casing

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

Construction Record - Screen

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

Water Details

Water found at Depth (m/ft)	Kind of Water		Depth (m/ft) From	To	Diameter (cm/in)
171	Fresh / Untested / Gas / Other specify		0'	66'	6"
178	Fresh / Untested / Gas / Other specify		66'	190'	5 15/16"
	Fresh / Untested / Gas / Other specify				

Well Contractor and Well Technician Information

Business Name of Well Contractor: CANADIAN SOIL DRILLING | Well Contractor's Licence No.: 2233

Business Address (Street Number/Name): 12493 Hwy 27 NORTH | Municipality: Springwater

Province: ON | Postal Code: L4L1X0 | Business E-mail Address: canadiansoilcg@gmail.com

Bus. Telephone No. (incl. area code): 705 730 7645 | Name of Well Technician (Last Name, First Name): JAMIE ARCHER

Well Technician's Licence No.: T2122 | Signature of Technician and/or Contractor | Date Submitted: 2012 05 31

After test of well yield, water was:

Clear and sand free / Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft): 190'

Pumping rate (l/min / GPM): 20

Duration of pumping: Final water level after pumping (m/ft): 64.8"

If flowing give rate (l/min / GPM):

Recommended pump depth (m/ft):

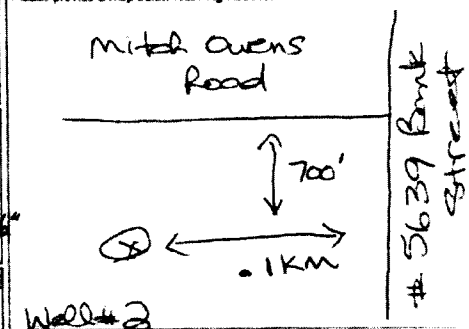
Recommended pump rate:

Recommended pump intake set at (m/ft):

Disinfected? Yes / No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	26.2"		64.8"
1	35.3	1	44.8
2	40.8	2	39.5
3	44.4	3	36
4	46.7	4	34
5	49.5	5	38
10	64	10	38
15	68	15	27.8
20	57.8	20	26.2
25	59.8	25	26.2
30	58.7	30	26.2
40	61.8	40	26.2
50	60.2	50	26.2
60	64.8"	60	26.2"

Please provide a map below following instructions on the back.



Comments:

Well owner's information package delivered: Yes / No

Date Package Delivered:

Date Work Completed: 2012 05 21

z128561

Ministry's Copy

Ontario Ministry of the Environment

Tag#: A128074 (Print Below) A128074

Well Record

Regulation 903 Ontario Water Resources Act

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Measurements recorded in: ☐ Metric ☒ Imperial

Well Owner's Information

First Name | Last Name / Organization: Eastview Sand & Gravel Limited | E-mail Address | ☐ Well Constructed by Well Owner

Mailing Address (Street Number/Name): Box 190 R R # 1 | Municipality: Greely | Province: ON | Postal Code: K4P 1N5 | Telephone No (inc. area code)

Well Location

Address of Well Location (Street Number/Name): 5639 Bank Street | Township: Osgoode | Lot: Pt. 1 | Concession: 5

County/District/Municipality: Ottawa-Carleton | City/Town/Village: Greely | Province: Ontario | Postal Code

UTM Coordinates: Zone: 18 | Easting: 454628 | Northing: 5013745 | Municipal Plan and Sublot Number | Other

NAD 8 3

Overburden and Bedrock Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
	Clay	& Boulders		0	20
	Sand & Gravel	& Boulders		20	52
Grey	Limestone			52	108
Grey	Limestone			108	144
Grey	Limestone	& White Sand Stone Mix		144	159
White	Sandstone			159	174
White	Sandstone			174	180

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
54	54	Neat cement	10.9
54	0	Bentonite slurry	37.8

Method of Construction

☐ Cable Tool ☐ Diamond ☐ Rotary (Conventional) ☐ Jetting ☐ Rotary (Reverse) ☐ Driving ☐ Boring ☐ Digging ☒ Air percussion ☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used ☒ Domestic ☐ Municipal ☐ Dewatering ☐ Livestock ☐ Test Hole ☐ Monitoring ☐ Irrigation ☐ Cooling & Air Conditioning ☐ Industrial ☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
6"	Steel	188	+2	64
5 15/16"	Open Hole		64	180

Water Supply

☒ 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

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No	Depth (m/ft) From	To

Water Details

Water found at Depth (m/ft)	Kind of Water	Depth (m/ft) From	To	Diameter (cm/in)
108	☐ Fresh ☒ Untested ☐ Gas ☐ Other, specify			
174	☐ Fresh ☒ Untested ☐ Gas ☐ Other, specify	0	64	6"
	☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify	64	180	5 15/16"

After test of well yield, water was:

☐ Clear and sand free ☐ Other, specify Mist towards end

If pumping discontinued, give reason: X

Pump intake set at (m/ft): 170

Pumping rate (l/min / GPM): 10

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 76.2

If flowing give rate (l/min / GPM): X

Recommended pump depth (m/ft): 140 (bottom)

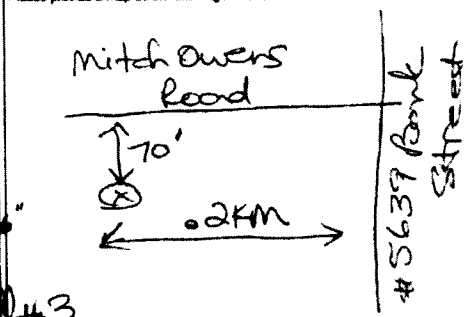
Recommended pump rate (l/min / GPM): 10

Well production (l/min / GPM): 10

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	42		70.2
1	48.8	1	65
2	51.3	2	53
3	53.3	3	47.9
4	54.9	4	47.8
5	56.2	5	42
10	60.4	10	42
15	64.8	15	42
20	66	20	42
25	64	25	42
30	65	30	42
40	66.8	40	42
50	69.6	50	42
60	70.2	60	42

Please provide a map below following instructions on the back.



Comments: 1/2 HR. -.18 GPM, set @ 140 ft

Well Contractor and Well Technician Information

Business Name of Well Contractor: CANADIAN SOIL DRILLING | Well Contractor's Licence No: 2233

Business Address (Street Number/Name): 12493 HWY 27 NORTH | Municipality: Springwater

Province: ON | Postal Code | Business E-mail Address: LOLIXO Canadiansoil@gmail.com

Bus. Telephone No (inc. area code): 705 730 7645 | Name of Well Technician (Last Name, First Name): JAMIE ARCHER

Well Technician's Licence No: T2122 | Signature of Technician and/or Contractor | Date Submitted: 2012 05 31

Well owner's information package delivered: ☒ Yes ☐ No | Date Package Delivered: 2012 MAY 30 | Date Work Completed: 2012 05 29

Audit No: Z128562

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Ministry's Copy

Geotechnical Site Assessment

5639 Bank Street,
Greely, Ontario

April 18th, 2012

BAE & Associates
Environmental
RR#1 Oro Station,
ON L0L 2E0
Phone 705 715 1881
envsol@rogers.com

Providing Environmental Solutions Since 1997!

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APPENDICES

1.0 INTRODUCTION

1.1 Purpose

This report presents the results of a Geotechnical Site Assessment prepared by BAE & Associates (BAE) for the proposed Alium Investments commercial development, on a piece of property in Greely, Ontario at the corner of Mitch Owens Road, and 5639 Bank Street. The purpose of the assessment was to provide recommendations for the geotechnical aspects of the proposed construction.

1.2 Scope of Services

The scope of work included the following:

- Review of available data pertinent to the site.
- Conduct a subsurface investigation.
- Conduct basic laboratory testing of select soils.
- Perform a geotechnical analysis regarding the proposed construction, using the information obtained from the subsurface investigation and laboratory testing.
- Prepare this report of our findings, conclusions, and tentative recommendations for the geotechnical aspects of the proposed construction.

1.3 Authorisation

This assessment was performed and the report prepared in general accordance with and authorisation from Alium Investments to proceed with the work.

1.4 Standard of Care

The services performed by BAE were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the geotechnical profession practising contemporaneously under similar conditions in the locality of the project. No other warranty, expressed or implied, is made.

Limitations of this report are discussed in Appendix A. These limitations further explain the realities of geotechnical engineering and the limitations that exist in evaluating geotechnical issues.

This report has been prepared for the exclusive use of Alium Investments with specific application to the proposed project.

2.0 PROJECT DESCRIPTION

2.1 Proposed Development

It is understood that the proposed development will consist of multiple commercial plazas and possibly a gas station. If the locations of the assumed loadings, proposed structures, floor elevations, or any other site features change BAE should be notified so that the changes can be reviewed to determine if the recommendations presented in this report are still applicable.

2.2 Site Description

The subject property is currently vacant. It had previously been a gravel pit. Figure 1 is a drawing of the subject property showing the Borehole Locations.

The subject property is bordered by Mitch Owens Drive to the north, Bank Street to the east, Old Prescott Road to the west and residential subdivisions to the south.

The general topography of the site is relatively flat, sloping towards Bank Street to the east. The property slopes sharply down from Mitch Owens Drive, to the north. It also slopes down sharply from the residential subdivision that lines the southern edge of the property.

3.0 INVESTIGATION AND TESTING

3.1 Subsurface Investigation

The field investigation to determine the engineering characteristics of the subsurface materials included a reconnaissance of the project site, drilling of borings, performing standard penetration tests and obtaining disturbed split-barrel samples.

The drilling consisted of 7 test borings and 3 monitoring wells at the locations depicted on the Site Plan (Appendix B). The drilling was carried out on April 4, 2012, by Canadian Soil Drilling using a CME 45 mobile mounted drill rig with a 10cm diameter, hollow stem auger and split-spoon sampler drill rig with continuous-flight augers.

Borehole locations were selected to maximise property and proposed structure coverage, as well as determined by site accessibility. Borehole 1 was drilled to a depth of 3.5m at the southeast corner of the property, along the edge that was never exposed during pit operations. Borehole 2 was drilled to a depth of 7.6m to the west of BH #1 just north of the slope that runs along the southern property line. Borehole 3 was drilled to a depth of 7.6m towards the center of the property. Borehole 4 was drilled to a depth of 6.0m along the north edge of the property, to the southwest of the hydro tower. Borehole 5 was drilled to a depth of 9.0m along the north edge, in the west side of the subject property. Borehole 6 was drilled to a depth of 9.0m in the southwest corner of the subject property. Borehole 7 was drilled to a depth of 7.6m along the south side of the property, to the east of Borehole 6.

Water levels were measured in the open boreholes on completion of drilling. In addition, long term groundwater monitoring installations consisting of 19mm diameter PVC (polyvinyl chloride) pipes were installed in Borehole 2, 5 and 6 for subsequent monitoring. The installation configuration is documented on the corresponding borehole logs. All the boreholes were backfilled upon completion of fieldwork.

Soil samples were obtained at selected intervals in the soil test borings. Undisturbed soil samples were obtained in general accordance with ASTM D-1587 (Thin-Walled Tube Sampling of Soils) using a standard split-spoon sampler. A split-spoon sampler is a 5cm O.D. tube that is driven into the soil to be sampled that can be split open lengthways for easy removal and visual inspection of the soil obtained. Disturbed soil samples were obtained in general accordance with ASTM D-1586 (Penetration Test and Split-Barrel Sampling of Soils). All samples were identified according to project number, boring number and depth, encased in polyethylene plastic wrapping to protect against moisture loss, and transported to our laboratory in special containers.

During the sampling procedures, standard penetration tests were performed in the borings in conjunction with the split-barrel sampling. The standard penetration value (N) is defined as the number of blows of a 63.5kg hammer, falling 75cm, required to advance the split-spoon sampler one-foot into the soil (ASTM D-1585). The sampler is lowered to the bottom of the drill hole and the number of blows recorded for each of the three successive increments of six inches penetration. The "N" value is obtained by adding the second and third incremental numbers. The results of the standard

penetration test indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components.

Water level observations were made during the boring operations and the results are noted on the boring logs. In relatively pervious soils, such as sandy soils, the indicated elevations are considered reliable ground water levels. In relatively impervious soils such as clays and silty clays, the accurate determination of the ground water elevation may not be possible even after several days of observation. Seasonal variations, temperature and recent rainfall conditions may influence the levels of the ground water table and volumes of water will depend on the permeability of the soils.

A field log was prepared for each boring. Each log contained information concerning the boring method, samples attempted and recovered, indications of the presence of various materials such as silt, clay, gravel or sand and observations of ground water. It also contained an interpretation of subsurface conditions between samples. Therefore, these logs included both factual and interpretative information. The boring logs are included in Appendix C. On completion of each borehole, the hole was filled in with existing, removed soil and were all sealed with an impermeable covering.

3.2 Laboratory Testing

Laboratory tests were carried out on a number of selected soil samples in order to acquire necessary information with regards to the physical and mechanical properties of the soil layers and further on to evaluate and determine the parameters required for the calculations. All phases of the laboratory-testing program were performed in general accordance with the applicable ASTM Specifications.

4.0 SUBSURFACE CONDITIONS

4.1 Stratigraphy

Detailed descriptions of the geotechnical conditions encountered in the seven (7) boreholes are located in the attached borehole logs. The borehole logs and related information depict subsurface conditions only at the specific locations and times indicated. Subsurface conditions and water levels at other locations may differ from conditions at the locations where sampling was conducted.

It should be noted that the soil boundaries indicated on the borehole logs are inferred from non-continuous sampling and observations during drilling. These boundaries are intended to reflect approximate transition zones for purpose of geotechnical design and should not be interpreted as exact planes of geological change.

A review of the borehole logs inclusive indicates that the site is generally covered with native overburden fill overlying approximately 7 to 8 meters of grey clay fill followed by a native deposit of sand and gravel.

The subject property has been a gravel pit for approximately 40 years. It is our opinion that the majority of the property had been disturbed, sand and gravel removed, to a depth of approximately 8 meters below current grade level. The fill material is comprised of grey clay, with traces of gravel, silt and sand. The overall soil profile is largely filled with native soils delivered from an offsite source and placed as fill in the subject site.

4.1.1 Topsoil/Overburden

Each borehole indicated a 50mm to 100mm of overburden (topsoil, organics).

4.1.2 Grey Clay

Below the overburden layer a thick layer of Grey Clay was encountered to a depth of approximately 7 to 8 meters. The clay was generally moist, wet, mixed with traces of silt, sand and gravel. The clay had originated just north of the site near the intersection of Airport Parkway and Hunt Club Road, when new retention ponds were constructed, the grey clay was relocated to the subject site and used to fill in the gravel pit.

4.1.3 Sand and Gravel

Below the clay is the bottom of the gravel pit. The sand and gravel layer has traces of silt and clay. The gravel pit operations did not extend all the way to the Bank Street along the eastern edge. Below the overburden, a thin layer of clay, the sand and gravel, there is a seam of eastern shale bedrock. This extends across the far eastern portion and is located approximately 3.5m below grade.

Detailed description of the type of soil layers encountered during drilling is given in the borehole logs *(Appendix C)*. The lines designating the interface between soil strata on

the boring logs represent approximate boundaries; transition between materials may be gradual.

4.2 Groundwater

Groundwater was encountered at observable levels in all but one of the borehole locations. These measurements indicate that the groundwater table at the site is at 3.6m to 6.0m below grade. These may fluctuate with seasonal climatic variations and changes in the land use. Low permeability soils will require several days or longer for groundwater to enter and stabilise in the test borings.

5.0 RECOMMENDATIONS

The recommendations presented in the following sections of this report are based on the information available regarding the proposed construction, the results obtained from our soil test borings and laboratory tests, and our experience with similar projects. Because the test borings represent a very small statistical sampling of subsurface conditions, it is possible that conditions may be encountered during construction that are substantially different from those indicated by the soil test borings. In these instances adjustments to design and construction may be necessary.

This geotechnical report is based on the project information developed by BAE and the assumptions stated in this report. Changes in the proposed location or design of the structures can have significant effects on the conclusions and recommendations of the geotechnical report. BAE should be contacted in the event of such changes.

5.1 Site Preparation

Topsoil and overburden as well as other debris noted at or below the existing ground surface should be removed as part of the site preparation for the proposed construction area. In all new fill and excavation areas, ie; the clay fill area, vegetation, topsoil, roots and other deleterious materials (typically 1.5 to 3cm), deemed unsuitable shall be removed from the proposed construction areas, and replaced with controlled fill. Site clearing, grubbing and stripping will need to be performed only during dry weather conditions. Operation of heavy equipment on the site during wet conditions could result in excessive rutting and mixing of organic debris with the underlying soils especially with low permeability soils like the clays discovered in the drilling.

Due to their physical properties, these types of soils are very sensitive to traffic when allowed to get saturated, as they hold onto the water and will become increasingly difficult to control. Extreme care must be taken when exposing these types of soils, both to elements such as freezing and excessive wetting or heavy equipment traffic, especially rubber tire equipment.

5.2 Excavations

Temporary construction slopes should be designed and excavated in strict compliance with the rules and regulations of the Provincial Statute - Occupational Health and Safety Act, R.S.O. 1990, c. O.1, as amended Ontario Regulations 213/91 - Regulations for Construction Projects. This document was prepared to better insure the safety of workers entering trenches or excavations, and requires that all excavations conform to the new OSHA guidelines.

The contractor is solely responsible for protecting excavations by shoring, sloping, benching or other means as required to maintain stability of both the excavation sides and bottom. BAE does not assume any responsibility for construction site safety or the activities of the contractor.

For this site, the overburden soil encountered in our exploratory borings consisted of silty till. We anticipate that OSHA will classify these materials as Type 4 to Type 3. OSHA recommends a maximum slope inclination of 9 Horizontal: 5 Vertical for these type soils. Excavation construction slopes should be closely observed for signs of mass movement, such as tension cracks near the crest, bulging at the top of the slope, etc.

5.3 Structural Fill (Engineered Fill)

It is recommended that structural fills be constructed as controlled well-compacted engineered fills. Structural engineered fill should be inorganic, low plastic clay, sand, or gravel. Any existing soils with a high organic content (browns) are suitable for reuse as fill in landscaping areas only. It is recommended that only granular fill be used within the building footprint and within 1.5m of the building footprint. The intent of these recommendations is to reduce the potential for consolidation and settlement of new fills.

Laboratory testing should be performed on the fill materials to determine the appropriate moisture-density relationship of the fill being placed. Adjustments to the soil moisture by wetting or drying should be made as needed during fill placement. During grading

operations, representative samples of the proposed imported structural fill materials should be periodically checked via laboratory testing. A representative from BAE should be on site to monitor excavation and grading operation as well as the suitability of fill materials. Suitable fill material should be placed in thin lifts (lift thickness depends on type of compaction equipment, but in general, lifts of 200mm loose measurements are recommended). The soil should be compacted by the necessary compaction equipment to meet the specified compaction recommendations.

Self-propelled compactors similar to Caterpillar Model 815 with tamping feet or sheepsfoot rollers may be required to adequately compact fine-grained fill material (silts and clay). If the fill material is granular (sands and gravels) with less than 10% clays and silts, smooth-drum vibratory compactors should be used. In addition, a smooth-drum roller should be provided to "seal" the fill at the end of each workday to reduce the impact of precipitation. In areas undergoing removal of seepage water, the engineered fill should be limited to well-graded sand and gravel or crushed stone.

Within small excavations, such as in utility trenches (less than 60cm in width), around manholes or behind retaining walls, we recommend the use of "wacker packers", "Rammax" compactors or vibrating plate compactors to achieve the specified compaction. Loose lift thickness of 10cm is recommended in small area fills.

A qualified field representative should periodically observe fill placement operations and perform field density tests at various locations throughout each lift, including trench backfill, to indicate if the specified compaction is being achieved.

TABLE 1: STRUCTURAL FILL PLACEMENT GUIDELINES

Areas of Fill Placement	**Compaction Recommendation (ASTM D698-Standard Proctor)**	**Moisture Content (Percent of Optimum**
Granular cushion beneath Floor Slab and over Footings	98%	As necessary to obtain density
Structural fill supporting Footings	98%	-1 to +3 percent
Structural fill placed within 1.5m beyond the perimeter of the building pad	98%	-1 to +3 percent
Grade-raise fill placed within 30cm of the base of the	98%	-1 to +3 percent

pavement		
Structural fill placed below the base of the Pavement Soil Subgrade	95%	-1 to +3 percent
Utility Trenches - Within building and pavement areas	98%	-1 to +3 percent
Beneath Landscaped/Grass Areas	92%	As necessary to obtain density

The fill soils should be relatively free of organic materials (less than about two hundredths of a percent by weight) and other deleterious material. In addition, the soils should preferably not contain particle sizes larger than 75mm.

5.4 Foundation Design

Footings should be founded on undisturbed brown or grey sand and gravel with traces of silt and clay found around 8 to 9m below grade, or on engineered fill.

Based on the results of the soil test borings, laboratory testing and our engineering evaluation, it is our opinion that the subsurface conditions are not suitable for supporting the proposed structure on a conventional shallow foundation. However when the clay is removed and engineered fill is used to backfill these areas, foundations may be constructed as follows: for spread or continuous footings bearing on the natural or engineered fill layers, 150 kPa for an Ultimate Limit State (ULS) and 100 kPa for Serviceability Limit State (SLS) can be used. The net allowable bearing pressures refer to the bearing pressure at foundation level in excess of the surrounding overburden pressure and do not include footing weight, backfill weight, or slab weight.

Footings should have minimum dimensions in accordance with the municipal building codes. All footings should be located so that the smallest lateral clear distance between footings will be at least equal to the difference in their bearing elevations. If this distance cannot be maintained, the lower footing should be designed to account for the load imparted by the upper footing. The recommended soil bearing capacity includes a factor of safety of at least 3 against shear failure. It is possible that some soils at the site will have an allowable soil bearing pressure less than the recommended design value. Therefore, foundation bearing surface evaluations should be performed by a BAE representative during footing construction to aid in the identification of such soils. After the evaluations and any required remedial measures are performed, concrete should be placed as quickly as possible to avoid exposure of the foundation sub-soils to wetting,

drying or freezing. If soils in the areas of foundation support are subjected to such conditions, the footings should be re-evaluated.

The frost line in the Ottawa area is 1.2 metres below grade. All foundations in unheated areas, including the footings for retaining walls, should be provided with a minimum of 1.2 metres of soil cover to minimize the potential for frost related movements

When footings or foundations are excavated, a qualified inspector should re-evaluate the soil to ensure stability, and to make recommendations that might include the use of rebar, or widening footings.

Table No. 2
Factored ULS Bearing Resistance of Engineered Fill

Founding Soil	Footing Width (m)	Footing Depth (m)	Factored ULS Resistance (kPa)
Engineered Fill	1.0	0.6	150
	1.0	1.5	310
	0.6	0.6	130
	0.6	1.5	290

5.5 Floor Slab Subgrade Preparation

The soil subgrade in the areas of concrete slab-on-grade support is often disturbed during foundation and superstructure construction. Additionally, floor slab areas are often disturbed by construction equipment traffic between the time of initial grading and final pavement construction. The subgrade should be excavated to the design depth of the bottom of slab gravels. To prepare the subgrade, the top 20cm of the subgrade should be compacted to a minimum of 98% of the maximum dry density as determined by ASTM D698-91, Standard Proctor Moisture-Density Relationship. The moisture content should also be controlled to -1 to +3% of the optimum.

The final subgrade should be proof-rolled and evaluated by a representative of BAE immediately prior to placement of the engineered fill to detect any localised areas of instability or soft areas. If unstable soils are encountered which cannot be adequately densified in place, such soils should be removed and replaced with well-compacted fill material placed in accordance with the *Structural Fill* section of this report. The subgrade should be graded to a shallower slope than five horizontal to one vertical (5H: 1V) prior to receiving general engineered fill material to reduce the effects of differential

fill thicknesses. The prepared subgrade should be protected from drying, excessive moisture, and freezing.

5.6 Floor Slab Design

The recommendations provided are based on the assumption that the average net floor slab load will not exceed 750 psf, and that the maximum concentrated net floor slab load will be less than 1500 psf. The recommended bearing capacity of the floor slab is 2000 psf. Should a greater bearing capacity be required, BAE should review the recommendations presented in this report. The granular cushion beneath the floor slab, should be free draining, well graded and compacted by vibration prior to pouring the floor slab. A minimum of 4 inches of granular fill should be provided below the slab. The granular fill should be compacted according to the recommendations given in Structural Fills section of this report. The recommended minimum gravel thicknesses are required to promote uniform distribution of floor loads to the subgrade, and to bridge over newly constructed fill areas such as utility trenches. Thicker gravel courses may be required for structural considerations. A vapour barrier should be placed beneath the concrete slab.

The slab-on-grade unit should be allowed to float independently of all load-bearing walls and columns. Floating the floor slab independent from the wall and column loads with movable and/or expansion joints will be critical in minimising the potential cracking, which can occur along, and around the proposed foundation system. In regards to the wall/floor structural detail, expansion joints and gap spacing are recommended at the wall/floor connection. A half-inch gap for movement between the floor slab and insulation board is recommended along with a bond break that allows independent movement between the floor slab and masonry block wall. A 10cm thick granular cushion is also recommended between the floor slab and top of column pad and wall footings. Resting the floor slab on top of column pads and wall footings is not recommended. Assuming the previously mentioned recommendations are performed, the risk associated with floor slab cracking will be reduced.

5.7 Pavement Subgrade Preparation

The subgrade should be proof rolled with a fully loaded dump truck, scraper, or similar rubber-tired equipment weighing at least 25 tons or a 10-ton vibratory steel drum roller (with vibration off). Do not use vibratory rollers to proofroll materials containing

significant amounts (>10%) of fines if the subgrade materials are wet or near groundwater levels, since vibratory rollers tend to wick water to the surface.

A representative of BAE or equivalent should observe Proofrolling operations. Unstable and unsuitable soils, which are revealed by proof rolling and which cannot be adequately densified in-place, should be removed under the direction of the BAE representative. It may be necessary to perform selective removal of soft, wet soils and/or stabilise existing soft soils in-place. If required, the methods of stabilisation will typically include incorporating a lift of crushed stone materials or a geosynthetic over the soft soils. The identification of areas that may require undercutting and/or stabilisation should be based on the actual conditions at the time of construction, and will depend on the location of the soft area.

The subgrade should be compacted to a minimum of 98% of the maximum proctor density of ASTM D-698-91, Standard Proctor Moisture-Density Relationship. The moisture content should also be controlled to -1 to +3% of the optimum. The subgrade should be tested by a representative of BAE and approved for placement of select fill.

5.8 Pavement Design

All of the topsoil and any fill or excessively wet materials within the proposed driveway and parking lot areas should be subexcavated and the areas brought to grade using compacted Granular B. Based on the anticipated traffic loadings, it is recommended that flexible pavements for passenger vehicle parking areas be designed for a maximum Benkelman beam rebound of *2.5* millimetres. Driveways and truck parking areas should be designed for a maximum Benkelman beam rebound of *1.5* millimetres. To achieve these criteria, the pavement structures should consist of the following constructed on a properly prepared engineered fill subgrade:

Table No. 3
Recommended Pavement Structure Thickness for Surface Parking Areas

Pavement Layer	Compaction Requirements	Computed Pavement Structure	
		Parking Areas (light Duty)	Access Roads (heavy duty)
Asphaltic Concrete	92.0 to 96.5% Maximum relative density	65mm HL3	90mm

OPSS Granular "A" Base	98% SPMDD	150mm	150mm
OPSS Granular "B" Subbase	98% SPMDD	300mm	450mm

The above-noted pavement structures are not intended to support construction traffic. The pavement subgrade should be thoroughly proofrolled with heavy machinery prior to pavement construction to identify any areas requiring remedial work.

The Granular A base and Granular B subbase should be uniformly compacted to at least 98 per cent of standard Proctor maximum dry density. To preserve the integrity of the completed pavement structure, perforated stub drains should be provided at subgrade level at any catchbasin locations; otherwise, grading should direct surface and subsurface water to perimeter ditches with inverts at least *0.5* metres below subgrade level.

It is recommended that placement of the sheet asphalt be deferred for one year following placement of the binder asphalt to minimise the detrimental effects of potential differential settlement of the service trench backfill.

Surface drainage around the pavement and proper maintenance are also important to long-term performance. Curbs should be backfilled as soon as possible after construction of the pavement. Backfill should be compacted and should be sloped to prevent water from ponding and infiltration under the pavement. All pavement joints should be caulked and any cracks should be quickly patched or sealed to prevent moisture from reaching and softening the subgrade.

5.9 Drainage and Groundwater Considerations

The site should be graded to provide positive drainage to reduce storm water infiltration. A minimum gradient of one percent for asphalt areas should be maintained. A three percent gradient should be maintained for landscaped areas immediately adjacent (within 3m) to the building. In general, water should not be allowed to collect near the surface of the foundation or floor slab areas of the structures during or after construction. If water were allowed to accumulate next to the foundation, it would provide an available source of free water to the expansive soil underlying the

foundation. Similarly, surface water drainage patterns or swales must not be altered so that runoff is allowed to collect next to the foundation.

Temporary drainage provisions should be established, as necessary, to minimise water runoff into the construction areas. Since soils generally tend to soften when exposed to free water, provisions should be made to remove seepage water from excavations, should it occur. Also, undercut or excavated areas should be sloped toward one corner to facilitate the collection and removal of rainwater or surface runoff. Adequate protection against sloughing of soils should be provided for workers and inspectors entering the excavations. This protection should meet O.S.H.A. and other applicable building codes.

Ground water seepage was encountered in our borings during drilling, and groundwater should not be encountered during the shallow excavations, but will be found approximately 3.6m below grade. If minor ground water seepage is encountered within the proposed building foundation, utility trenches and grading excavations at the time of construction, especially after periods of heavy precipitation, small quantities of seepage may be handled by conventional sump and pump methods of dewatering.

Steel casing should be on hand during piling operations to prevent seepage and sloughing of the sidewalls. The piles should be concreted immediately following inspection to reduce the potential for sloughing. Some pumping of collected water may be required during underground utility construction.

5.10 Seismic Conditions

The subsoil and groundwater information at this site has been examined in relation to Section 4.1.8.4. of the OBC 2006. The subsoil at the structure location will generally consist of fill. The shallow foundations will be set on the engineered fill. The reported undisturbed N-Values for the soil below the founding levels ranged from 36 to 71.

Based on the subsurface soil conditions encountered during our geotechnical investigations, the Site Class for this site is "C" as per Table 4.1.8.4.A, Site Classification for Seismic Response, OBC 2006.

6.0 ADDITIONAL SERVICES

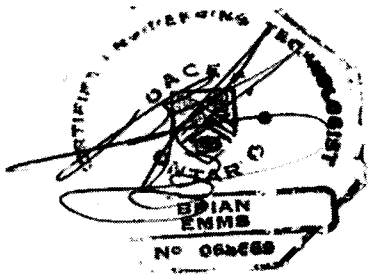
The recommendations presented in this report are contingent on BAE observing and/or monitoring:

- Proofrolling and fill Subgrade conditions;
- Backfilling and compaction of excavations;
- Suitability of borrow materials;
- Fill placement and compaction;
- Foundation subgrades; and
- Compliance with the geotechnical recommendations.

7.0 CLOSURE

We trust that this report will assist you in the design and construction of the proposed project. Should you have any questions, please do not hesitate to contact us. This report was prepared by Brian A. Emms, C.E.T. and Sarah Heino, Geotechnologist and reviewed by G. J. Van Iterson, P. Eng.

Respectfully submitted,
BAE & Associates Environmental



Brian A. Emms, C.E.T.
Senior Env. Technologist

G. Jan Van Iterson, P. Eng.
Associate

APPENDIX A

LIMITATIONS

This report was prepared for the exclusive use of Alium Investments for the geotechnical aspect of the proposed development described in Section 2. The report may not be relied upon by any other person or entity without the written permission of BAE. This report was prepared in accordance with current, generally accepted geotechnical engineering practices. No other warrantee is provided.

BAE should be allowed the opportunity to review the geotechnical aspects of plans and specifications prior to construction, to allow confirmation of the correct interpretation of the recommendations provided in this report. Foundation, earthworks, underground construction, and pavement construction should be undertaken only with full time monitoring by qualified personnel. BAE can provide these services on request.

The conclusions and recommendations submitted in this report are based upon the data obtained from a limited number of widely spaced subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction or further investigation. If variations or other latent conditions do become evident, it will be necessary to re-evaluate the recommendations of this report. The recommendations contained herein are not intended to dictate construction methods or sequences. Instead, they are furnished solely to help designers identify potential construction problems related to foundation and earth plans and specifications, based upon findings derived from sampling. Depending upon the final design chosen for the project, the recommendations may also be useful to personnel who observe construction activity.

Potential contractors for the project must evaluate potential construction problems on the basis of their review of the contract documents, their own knowledge of and experience in the local area, and on the basis of similar projects in other localities, taking into account their own proposed methods and procedures.

APPENDIX B
Site Photographs

APPENDIX C
Borehole Records

BAE & Associates

BOREHOLE RECORD

BH 1

CLIENT: Otis
Penetration Test Hammer: 63.5kg
Groundwater Level Estimated - 6.0m

LOCATION: Greely
Drop: 760mm
Continual Split Spoon Sampling @ 0.45m intervals

DATE: April 4, 2012

DEPTH (m)	ELEV.... (m)	STRATA DESCRIPTION	STRATA PLOT	H2O LEVEL	DEPTH (ft)	WATER CONTENT PERCENT / HYDRAULIC CONDUCTIVITY k,cm/s	SAMPLES TYPE	SAMPLES N-VALUE	WELL DATA/ Comments
						Δ 10 20 30 40 / 10-6 10-5 10-4 10-3	S/S		
0		Native Overburden/Topsoil 50mm-							No Well Install
		Grey Clay – moist, firm, mixed with gravel				Δ		8	
1		Sand trace silt, mixed with rocks/gravel/boulders Moist to Wet			5	Δ		13	
2		Sand with boulders, trace Silt				Δ		24	Groundwater not observed, borehole terminated due to clay shale layer
		Brown Sand and gravel				Δ		71	
3		Clay Shale Borehole Terminated 3.5m			10				
4									
					15				
5									
6									

BOREHOLE RECORD

BH 2

BAF & Associates

CLIENT: Otis
Penetration Test Hammer: 63.5kg
Groundwater Level Estimated - 6.0m

LOCATION: Greely
Drop: 760mm
Continual Split Spoon Sampling @ 0.45m intervals

DATE: April 4, 2012

DEPTH (m)	ELEV. (m)	STRATA DESCRIPTION	STRATA PLOT	H2O LEVEL	DEPTH (m)	WATER CONTENT PERCENT / HYDRAULIC CONDUCTIVITY k,cm/s (10 20 30 40; 10-6 10-5 10-4 10-3)	SAMPLES TYPE	SAMPLES N-VALUE	WELL DATA/ Comments
0		Native Overburden/Topsoil 50mm				Δ			**MW #3** Well installed at 20ft
		Clay with Silt and Sand						5	
1		Grey Clay trace sand, trace silt Moist				Δ		5	
		Becoming Wet			5			7	
2						Δ		6	Groundwater at about 5.8m
3					10			2	
		Grey Clay Some Sand and Gravel							
4		Grey Clay and Silt with Sand				Δ		4	
					15			2	
5									
		Brown Sand and Gravel						156	
6		End of Borehole 7.6m							

BOREHOLE RECORD

BH 3

RAF & Associates

CLIENT: Otis
Penetration Test Hammer: 63.5kg
Groundwater Level Estimated - 6.0m

LOCATION: Greely
Drop: 760mm
Continual Split Spoon Sampling @ 0.45m intervals

DATE: April 4, 2012

DEPTH (m)	ELEV (m)	STRATA DESCRIPTION	STRATA PLOT	H2O LEVEL	DEPTH (ft)	WATER CONTENT PERCENT / HYDRAULIC CONDUCTIVITY k,cm/s (Δ 10 20 30 40 10-6 10-5 10-4 10-3)	SAMPLES TYPE	SAMPLES N-VALUE	WELL DATA/ Comments
0		Native Overburden/Topsoil 50mm					S/S		No well install
		Grey Clay trace Silt, trace Sand Soft, Moist						6	
1		Grey Clay trace Silt, trace Sand Some black mottling, possible peat			5				
2								6	Groundwater at about 5m
		Grey Clay trace Silt, trace Sand trace Gravel Soft, wet							
3					10			6	
4								5	
					15			8	
5								17	
		Brown Sand, trace Silt wet, coarse at 6M						89	
6		End of Borehole – 7.6M							

BOREHOLE RECORD

BH 4

BAE & Associates

CLIENT: Otis
Penetration Test Hammer: 63.5kg
Groundwater Level Estimated - 6.0m

LOCATION: Greely
Drop: 760mm
Continual Split Spoon Sampling @ 0.45m intervals

DATE: April 4, 2012

DEPTH (m)	ELEV (m)	STRATA DESCRIPTION	STRATA PLOT	LOG LEVEL	DEPTH (ft)	WATER CONTENT PERCENT / HYDRAULIC CONDUCTIVITY k,cm/s (10 20 30 40; 10-6 10-5 10-4 10-3)	SAMPLES TYPE	SAMPLES N-VALUE	WELL DATA/ Comments
0		Native Overburden/Topsoil 50mm							No Well Install
		Grey Clay, trace Silt, trace Sand Soft, Moist						3	
1									
		Grey Clay, with Sand, trace Silt Some fill debris Moist to Wet Loose			5			7	
2									Groundwater at about 3.6m
								13	
3					10				
		Grey Clay, trace sand, trace gravel Wet, Loose						10	
4								9	
		Brown Sand and Gravel			15				
5		End of Borehole 15m							
6									

BOREHOLE RECORD

BH 5

BAE & Associates

CLIENT: Otis
Penetration Test Hammer: 63.5kg
Groundwater Level Estimated - 6.0m

LOCATION: Greely
Drop: 760mm
Continual Split Spoon Sampling @ 0.45m intervals

DATE: April 4, 2012

DEPTH (m)	ELEV (m)	STRATA DESCRIPTION	STRATA PLOT	H2O LEVEL	DEPTH (ft)	WATER CONTENT PERCENT / HYDRAULIC CONDUCTIVITY k,cm/s	SAMPLES TYPE	SAMPLES N-VALUE	WELL DATA/ Comments
						△ 10 20 30 40 10-6 10-5 10-4 10-3	S / S		
0		Native Overburden/Topsoil 50mm				△			**MW #2** Well installed at 8.2m
		Grey Clay, trace Sand, trace Gravel Moist, soft						5	
1									
					5				
		Grey Clay, with Sand, trace Silt, trace Gravel				△		2	
2									Groundwater at about 4.3m
								8	
3					10				
		Grey Clay with Sand, trace Silt Soft, Moist						3	
						△			
4								4	
					15				
5						△		3	
		Brown/Grey Sand Coarse, Wet from 7.9m							
		End of Borehole 9.0m						32	
6									

BOREHOLE RECORD

BH 6

BAF & Associates

CLIENT: Otis
Penetration Test Hammer: 63.5kg
Groundwater Level Estimated - 6.0m

LOCATION: Greely
Drop: 760mm
Continual Split Spoon Sampling @ 0.45m intervals

DATE: April 4, 2012

DEPTH (m)	ELEV (m)	STRATA DESCRIPTION	STRATA PLOT	H2O LEVEL	DEPTH (ft)	WATER CONTENT PERCENT / HYDRAULIC CONDUCTIVITY k,cm/s	SAMPLES TYPE	SAMPLES N-VALUE	WELL DATA/ Comments
						Δ 10 20 30 40 10-6 10-5 10-4 10-3	S / S		
0		Native Overburden/Topsoil 50mm							**MW #1** Well installed at 9.0m
		Grey Clay, trace Sand, trace Silt Moist, soft			5			2	
1									
2		Grey Clay, trace Silt, trace Sand Wet, soft			10			2	Groundwater at about 7.9m
3	-3.00								
4					15			4	
5		Grey Sand, with Silt, trace Gravel from 6.4m Grey Clay and Silt with gravel from 7.7m Brown Sand, Coarse from 8.8m						36	
6		End of Borehole 9.0							

BOREHOLE RECORD

BH 7

BAE & Associates

CLIENT: Otis
Penetration Test Hammer: 63.5kg
Groundwater Level Estimated - 6.0m

LOCATION: Greely
Drop: 760mm
Continual Split Spoon Sampling @ 0.45m intervals

DATE: April 4, 2012

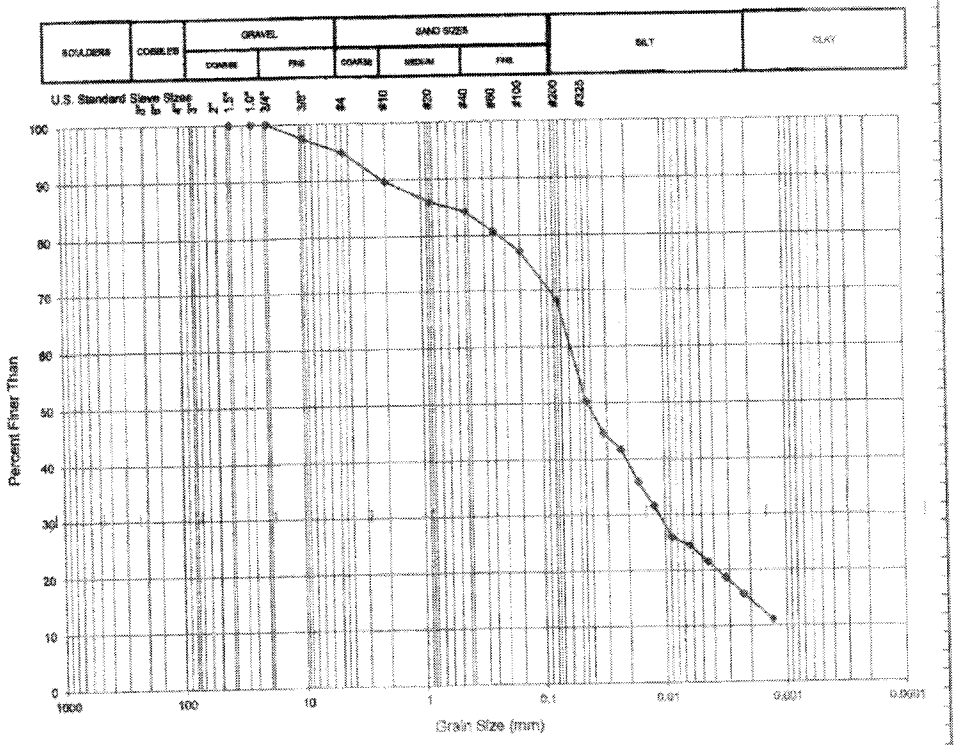
DEPTH (m)	ELEV (m)	STRATA DESCRIPTION	STRATA PLOT	HOLE LEVEL	DEPTH (ft)	WATER CONTENT PERCENT / HYDRAULIC CONDUCTIVITY k,cm/s (10 20 30 40 | 10-6 10-5 10-4 10-3)	SAMPLES TYPE	SAMPLES N-VALUE	WELL DATA
0		Native Overburden/Topsoil 50mm					S/S 1		No Well Install
		Grey Clay with Sand and Silt Moist, soft					2	4	
1							3		
					5			5	
2							4		Groundwater at about 4.6m
							5		
3	-3.00	Grey Clay trace Sand, trace Silt, trace Gravel Wet, soft			10		6	3	
							7		
4								4	
							8		
					15				
5								39	
		Brown Sand, wet, coarse from 7.0m							
6		End of Borehole 7.6m							

ALS
SENTINEL DIVISION - WATERLOO

PARTICLE SIZE DISTRIBUTION CURVE

ASTM METHOD D422-63

Project Name:	BRIAN A. EMMS
Project Number:	
Sample Location:	
Sample Number:	BH1-3
Sample Depth:	
Lab ID Number:	L1106667-1
Technician:	SM1
Sampler:	
Dates:	
Collected On:	1/23/2012
Analyzed:	2/2/2012



DESCRIPTION	SOIL CLASSIFICATION		SUMMARY		
	DESCRIPTIVE MODIFIERS				
SANDY SILT WITH CLAY, TRACE GRAVEL	AND	36 - 50 %	GRAVEL	5	%
	ADJECTIVE (e.g. sandy)	21 - 35 %	SAND	27	%
ESTIMATED HAZEN NUMBER: 1.30E-06 cm/s	WITH	11 - 20 %	SILT + CLAY	68	%
NOTE: UNIFIED SOIL CLASSIFICATION SYSTEM	TRACE	1 - 10 %			

GRAIN SIZE DETERMINATIONS

Project Name:	BRIAN A. EMMS	Sample Location:	
Project Number:	Q27901-19051	Sample Number:	BH1-3
Sampler:		Sample Depth:	
Technician:	SM1	Date Sampled:	01/23/12
Lab ID Number:	L1106667-1	Date Submitted:	01/24/12
		Date Completed:	02/02/12

Total Sample Weight	194 grams	Specific Gravity:	2.650
Hydro. Sample Weight	50.000 grams	Liquid Specific Gravity:	1.000
% Past #10	0.897 * 100	Grav Factor:	1.606
Sub Factor	3.480		

Sieve Size	Weight Retained (grams)	Percent Retained	Diameter (mm)	Cum. % Retained	Cum. % Passing
38.1 mm. DIA.:		0.000	38.100	0.000	100.000
25.4 mm. DIA.:		0.000	25.400	0.000	100.000
19.0 mm. DIA.:		0.000	19.000	0.000	100.000
9.5 mm. DIA.:	5.000	2.577	9.500	2.577	97.423
NO. 4 SIEVE :	5.000	2.577	4.500	5.155	94.845
NO. 10 SIEVE :	10.000	5.155	2.000	10.309	89.691
NO. 20 SIEVE :	2.000	3.588	0.850	13.897	86.103
NO. 40 SIEVE :	1.000	1.794	0.425	15.691	84.309
NO. 60 SIEVE :	2.000	3.588	0.250	19.278	80.722
NO. 100 SIEVE:	2.000	3.588	0.150	22.866	77.134
NO. 200 SIEVE:	5.000	8.969	0.075	31.835	68.165

Time (min)	Hydrometer Reading	Temperature (C)	Diameter (mm)	% Suspended (Subsample)	% Suspended (Total Sample)
1.00	20.0	22.0	0.044	56.180	50.388
2.00	18.0	22.0	0.032	49.756	44.626
4.00	17.0	22.0	0.023	46.544	41.745
8.00	15.0	22.0	0.017	40.119	35.983
15.00	13.5	22.0	0.012	35.301	31.662
30.00	11.5	22.0	0.009	28.877	25.900
60.00	11.0	22.0	0.006	27.271	24.459
120.00	10.0	22.0	0.004	24.059	21.578
240.00	9.0	22.0	0.003	20.847	18.698
480.00	8.0	22.0	0.002	17.635	15.817
1440.00	6.0	24.0	0.001	12.463	11.178

GRAIN SIZE	% BY WT.	DIA. RANGE (mm)
% GRAVEL :	5.15	> 4.5
% COARSE SAND :	5.15	2.0 - 4.5
% MEDIUM SAND :	5.36	0.425 - 2.0
% FINE SAND :	16.14	0.075 - 0.425
% SILT :	53.48	0.075 - 0.002
% CLAY :	14.68	< 0.002
% CLAY :	22.48	< 0.005

Sum Percentages 100

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP BF 04(001)	18 453838 5013082[W]	1998/04 1119	08 06 06	FR 0111 FR 0115	021 / 060 018 / 1:0	DO		1530029 (192726) BLUE CLAY 0013 SAND BLDR 0053 GREY LMSN 0120
OSGOODE TOWNSHIP CON 04(001)	18 454384 5013342[W]	1996/12 1119	06 06	FR 0050 FR 0055 FR 0052	006 / 050 030 / 1:0	DO		1529365 (167696) SAND 0009 BLUE CLAY 0015 SAND GRVL 0035 LMSN 0060
OSGOODE TOWNSHIP CON 04(001)	18 454330 5013229[W]	1996/12 1119	06 06	FR 0265	015 / 140 008 / 1:0	DO		1529366 (175341) SAND 0006 CLAY 0012 SAND GRVL 0041 LMSN 0202 GREY SNDS 0300
OSGOODE TOWNSHIP CON 04(001)	18 454174 5013353[W]	1997/06 1119	06 06 08	FR 0053 FR 0075	012 / 060 018 / 1:0	DO		1529699 (178628) SAND BLDR 0039 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1992/09 2348	06	FR 0067	025 / 070 015 / 1:0	DO		1526832 (117713) GRVL 0005 SAND 0054 BLCK SHLE 0070
OSGOODE TOWNSHIP CON 04(001)	18 453835 5013083[L]	2002/04 1119	06 06 08	UK 0114	004 / 110 020 / 1:0	DO		1532785 (237858) BLCK LOAM 0005 BLUE CLAY 0011 SAND BLDR 0030 GREY LMSN 0111 GREY SNDS 0124
OSGOODE TOWNSHIP CON 04(001)	18 453835 5013083[L]	2000/10 1414	08 06 06	FR 0058	012 / 060 020 / 1:0	DO		1531564 (224536) BRWN SAND PCKD 0008 GREY CLAY SNDY PCKD 0038 GREY LMSN LYRD 0083
OSGOODE TOWNSHIP CON 04(001)	18 454157 5013110[W]	1997/07 1119	08 06 06	FR 0054 FR 0052	008 / 050 024 / 1:0	DO		1529746 (178599) SAND 0020 CLAY 0025 GREY LMSN 0062
OSGOODE TOWNSHIP CON 04(001)	18 453964 5012962[W]	2001/07 1119	08 06 06	UK 0055 UK 0052	008 / 040 025 / 1:0	DO		1532266 (232792) SAND CLAY 0036 GREY LMSN 0061
OSGOODE TOWNSHIP CON 04(001)	18 454406 5013477[W]	1973/05 1558	06	FR 0078	030 / 032 020 / 1:0	DO		1513248 () BRWN GRVL SAND BLDR 0022 BRWN GRVL 0036 BRWN SAND STNS 0060 BLCK GRVL BLDR 0065 BLCK LMSN 0080
OSGOODE TOWNSHIP CON 04(001)	18 454171 5013492[W]	1959/05 1107	04 04	FR 0065	013 / 019 008 / 1:0	DO		1507208 () GRVL 0048 LMSN 0065
OSGOODE TOWNSHIP CON 04(001)	18 454230 5013521[W]	1979/11 1558	06 06	FR 0051	020 / 030 / 1:0	DO		1519662 () BRWN SAND GRVL 0009 BRWN SAND DRY 0030 GREY SAND GRVL BLDR 0050 GREY LMSN FCRD 0052
OSGOODE TOWNSHIP CON 04(001)	18 453940 5013045[W]	2001/11 1119	08 06 06	UK 0049 UK 0051 UK 0053 UK 0054	004 / 050 028 / 1:0	DO		1532594 (232829) BLCK LOAM PEAT 0006 GREY SAND 0034 GREY LMSN 0061
OSGOODE TOWNSHIP CON 04(001)	18 454430 5013376[W]	1998/04 1119	08 06 06	FR 0108 FR 0114	009 / 040 030 / 1:0	DO		1530030 (182468) SAND BLDR 0036 GREY LMSN 0120
OSGOODE TOWNSHIP CON 04(001)	18 454705 5013403[W]	1990/09 1119	06	FR 0170 FR 0231	070 / 080 008 / 1:0	NU		1525265 (89902) SAND GRVL BLDR 0066 GREY LMSN 0164 GREY SNDS 0240

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(001)	18 454377 5013282[W]	1997/07 1119	06 06 08	FR 0115	016 / 110 005 / 1:0	DO		1529741 (167664) CLAY 0017 SAND BLDR 0050 GREY LMSN 0121
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1991/07 1558	06 06	UK 0060	005 / 020 030 / 1:0	DO		1525633 (101375) BRWN CLAY STNS FILL 0004 GREY SAND 0011 GREY CLAY 0036 GREY GRVL 0040 GREY LMSN 0075
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1994/11 1119	06 06 09	UK 0054 UK 0052 UK 0056	015 / 050 005 / 1:0	DO		1528292 (150418) CLAY SNDY 0014 BLUE CLAY 0036 CLAY BLDR 0041 GREY LMSN 0060
OSGOODE TOWNSHIP CON 04(001)	18 454528 5013582[W]	1972/11 1517	05	FR 0059	030 / 035 015 / 1:30	DO		1512260 () GRVL 0015 BRWN SAND 0058 SNDS 0064
OSGOODE TOWNSHIP CON 04(001)	18 454071 5013422[W]	1962/07 1503	05 05	FR 0065	025 / 030 010 / 0:30	DO		1507209 () MSND 0015 CLAY 0030 MSND 0054 MSND GRVL 0055 BLUE LMSN 0068
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1996/09 1119	06 06	FR 0047 FR 0068	008 / 040 024 / 1:0	DO		1529353 (167221) SAND 0006 CLAY GRVL 0036 GREY LMSN 0075
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	2000/05 1119	08 06 06	UK 0194	030 / 190 007 / 1:0	DO		1531165 (216964) CLAY GRVL 0015 GREY LMSN 0121 GREY SNDS 0200
OSGOODE TOWNSHIP CON 04(001)	18 454214 5013145[W]	1997/06 1119	06 08 06	FR 0067 FR 0077	013 / 070 007 / 1:0	DO		1529511 (178606) CLAY SNDY 0010 BLUE CLAY 0014 SAND BLDR 0041 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1997/09 1119	06 06	FR 0079 FR 0095	028 / 085 009 / 1:0	DO		1529951 (167663) SAND BLDR 0040 GREY LMSN 0101
OSGOODE TOWNSHIP CON 04(001)	18 453745 5013001[W]	2002/08 1119	08 06 06	UK 0133	012 / 120 015 / 1:0	DO		1533111 (248092) BLUE SAND CLAY 0036 GREY LMSN 0111 GREY SNDS 0140
OSGOODE TOWNSHIP CON 04(001)	18 453267 5012804[W]	1973/12 1603	03 03	FR 0102	028 / 028 008 / 4:0	DO		1514039 () SAND 0049 SAND BLDR 0063 LMSN 0102
OSGOODE TOWNSHIP CON 04(001)	18 454231 5013542[W]	1959/04 1107	04 04	FR 0060	013 / 019 008 / 1:0	DO		1507207 () GRVL 0052 LMSN 0060
OSGOODE TOWNSHIP CON 04(001)	18 454401 5013632[W]	1972/06 3504	06	FR 0060	018 / 040 005 / 0:30	DO		1511796 () GRVL 0051 LMSN 0065
OSGOODE TOWNSHIP CON 04(001)	18 453964 5012916[W]	2002/11 1119	08 06 06	UK 0065 UK 0066 UK 0051	010 / 060 028 / 1:0	DO		1533461 (237977) SAND CLAY 0035 GREY LMSN 0073
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1994/06 1558	06 06	UK 0047 UK 0072	008 / 020 025 / 1:0	DO		1527986 (142285) BRWN SAND 0004 BRWN SAND GRVL WBRG 0010 GREY CLAY SNDY STNS 0025 GREY SAND GRVL 0041 GREY LMSN 0075
OSGOODE TOWNSHIP CON 04(001)	18 454352 5013542[W]	1974/11 3658	06 06	FR 0082 FR 0065	021 / 045 010 / 2:0	DO		1514637 () BRWN SAND GRVL 0056 GREY LMSN 0085

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(001)	18 453850 5012905[W]	2001/06 1558	06 06	UK 0092	005 / 025 015 / 1:0	DO		1532048 (230125) BRWN SAND 0008 GREY CLAY 0024 GREY SAND GRVL 0038 GREY LMSN 0100
OSGOODE TOWNSHIP CON 04(001)	18 454086 5013222[W]	2002/02 1119	08 06 06	UK 0038	008 / 035 060 / 1:0	DO		1532663 (237787) SAND BLDR 0030 GREY LMSN 0042
OSGOODE TOWNSHIP CON 04(001)	18 454512 5013420[W]	2001/08 1119	06 06 08	UK 0129	018 / 100 015 / 1:0	DO		1532441 (234263) CLAY 0006 SAND GRVL 0050 GREY LMSN 0136
OSGOODE TOWNSHIP CON 04(001)	18 454458 5013351[W]	1997/07 1119	08 06 06	FR 0067 FR 0063	014 / 060 012 / 1:0	DO		1529739 (167666) CLAY 0017 SAND GRVL 0040 GREY LMSN 0073
OSGOODE TOWNSHIP CON 04(001)	18 453835 5013083[L]	2003/12 1119	06	UK 0053 UK 0049	013 / 013 017 / 1:0	DO		1534480 (Z04840) A004716 CLAY GRVL 0035 GREY LMSN 0063
OSGOODE TOWNSHIP CON 04(001)	18 454621 5013652[W]	1963/04 4216	04 04	FR 0074	035 / 035 006 / 1:0	DO		1507211 () CLAY MSND 0065 GREY LMSN 0074
OSGOODE TOWNSHIP CON 04(001)	18 454102 5013349[W]	1997/06 1119	08 06 06	FR 0053 FR 0057	012 / 050 018 / 1:0	DO		1529510 (178619) CLAY 0011 SAND BLDR 0044 GREY LMSN 0061
OSGOODE TOWNSHIP CON 04(001)	18 453835 5013083[L]	2001/09 1558	06 06	UK 0065	017 / 030 030 / 1:0	DO		1532336 (230252) BRWN CLAY STNS FILL 0010 BRWN SAND 0018 GREY CLAY SNDY 0030 GREY SAND GRVL BLDR 0038 GREY LMSN 0075
OSGOODE TOWNSHIP CON 04(001)	18 453931 5013086[W]	2002/08 1119	08 06 06	UK 0150	013 / 150 007 / 1:0	DO		1533110 (248094) CLAY SNDY 0041 GREY LMSN 0121 GREY SNDS 0160
OSGOODE TOWNSHIP CON 04(001)	18 453834 5013082[L]	2003/07 1119	08 06 06	UK 0096 UK 0120	005 / 120 030 / 1:0	DO		1533981 (248393) CLAY SNDY GRVL 0034 GREY LMSN 0111 GREY SNDS 0128
OSGOODE TOWNSHIP CON 04(001)	18 454165 5013172[W]	2004/06 1119	06	0052 0065	015 / 016 020 / 1:0	DO		1534801 (Z14599) A014431 SAND GRVL 0036 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(001)	18 454716 5013416[W]	2004/08 1119	06	0212	061 / 067 020 / 1:0	DO		1534922 (Z14668) A014619 CLAY SAND BLDR 0065 GREY LMSN 0165 GREY SNDS 0220
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1994/11 1558	06 06	UK 0217	018 / 075 015 / 1:0	DO		1528340 (147779) BRWN SAND 0009 BRWN CLAY 0019 GREY CLAY STNS PCKD 0034 GREY SAND GRVL 0039 GREY LMSN 0146 GREY SNDS 0223
OSGOODE TOWNSHIP CON 04(001)	18 453834 5013082[L]	2003/06 1119	08 06 06	UK 0151	011 / 150 013 / 1:0	DO		1534065 (248350) SAND CLAY 0036 GREY LMSN 0128 GREY SNDS 0161
OSGOODE TOWNSHIP CON 04(001)	18 453030 5012721[W]	1984/08 4006	06 06	FR 0040 FR 0054	003 / 004 020 / 6:0	ST DO		1519504 () BRWN SAND MGRD 0012 GREY CLAY SOFT 0032 GREY CLAY SAND SILT 0036 GREY LMSN MGRD 0060
OSGOODE TOWNSHIP CON 04(001)	18 454121 5013313[W]	1996/08 1119	06 06	FR 0128 FR 0136	012 / 130 007 / 1:0	DO		1529352 (167233) CLAY SNDY 0030 SAND GRVL 0045 LMSN 0102 GREY SNDS 0150

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	2000/05 1119	08 06 06	FR 0062 FR 0053	015 / 060 013 / 1:0	DO		1531167 (216989) CLAY 0006 SAND BLDR 0043 GREY LMSN 0070
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1993/06 2348	06	FR 0067	030 / 060 020 / 1:0	DO		1527096 (126760) SAND 0040 GRVL 0060 LMSN 0072
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1990/09 1119	06	FR 0050 FR 0115 FR 0079	012 / 025 010 / 1:0	NU		1525264 (89999) SAND GRVL BLDR 0042 GREY LMSN 0120
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1997/04 1119	08 06 06	UK 0053 UK 0050	011 / 050 018 / 1:0	DO		1529509 (178698) SAND 0006 BLUE CLAY 0016 SAND BLDR 0056 GREY SNDS 0060
OSGOODE TOWNSHIP CON 04(001)	18 454202 5013418[W]	1996/11 1119	06 06	FR 0068 FR 0063 FR 0072	021 / 021 009 / 1:0	DO		1529349 (175354) SAND 0030 BRWN CLAY 0032 SAND GRVL 0042 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(001)	18 454541 5013552[W]	1968/09 1517	05	FR 0058	025 / 035 010 / 0:30	DO		1509837 () LOAM MSND 0040 QSND 0055 MSND GRVL 0060
OSGOODE TOWNSHIP CON 04(001)	18 454541 5013702[W]	1964/09 1503	05 05	FR 0080	025 / 037 010 / 1:0	DO		1507212 () MSND 0009 CLAY 0053 LMSN 0082
OSGOODE TOWNSHIP CON 04(001)	18 453930 5013321[W]	1981/04 1414	06 06	FR 0049	005 / 015 020 / 1:0	DO		1517545 () YLLW SAND DNSE 0015 GREY GRVL BLDR HARD 0045 GREY LMSN HARD 0052
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1996/10 1558	06 06	UK 0045	012 / 014 020 / 1:0	DO		1529251 (171270) BRWN CLAY LOOS 0006 BRWN SAND GRVL WBRG 0012 GREY CLAY STNS SNDY 0043 GREY LMSN LYRD 0050
OSGOODE TOWNSHIP CON 04(001)	18 454001 5013377[W]	1971/10 1558	05 05	FR 0076	010 / 025 018 / 1:0	DO		1511521 () BRWN SAND SILT 0014 BRWN CLAY SAND 0025 GREY FSND SILT 0030 BRWN SAND 0042 GREY GRVL BLDR 0046 BLCK LMSN 0078
OSGOODE TOWNSHIP CON 04(001)	18 454401 5013622[W]	1964/10 1703	02 03	FR 0076	018 / 030 004 / 2:0	DO		1507213 () LOAM 0003 MSND 0020 MSND BLDR GRVL 0050 LMSN 0076
OSGOODE TOWNSHIP CON 04(001)	18 454711 5013412[W]	1966/06 1503	05 05	FR 0098	032 / 032 010 / 1:0	DO		1507215 () MSND 0078 LMSN 0100
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1990/06 1558	06 06	UK 0090 UK 0110	015 / 050 030 / 1:0	DO		1524632 (79494) BRWN SAND PCKD 0003 GREY SAND WBRG 0012 GREY SAND PCKD 0039 GREY SNDS HARD 0080 GREY SNDS LYRD HARD 0125
OSGOODE TOWNSHIP CON 04(001)	18 454385 5013649[W]	1994/12 1119	09 06 06	FR 0068 UK 0071	020 / 060 011 / 1:0	DO		1528409 (151323) GRVL SNDY BLDR 0051 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(001)	18 453835 5013083[L]	2000/09 1414	08 06 06	FR 0075	012 / 070 012 / 1:0	DO		1531352 (222418) BRWN SAND GRVL PCKD 0020 GREY CLAY DNSE 0030 GREY SAND GRVL BLDR 0046 GREY LMSN LYRD 0078

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1999/11 1119	06 06 08	FR 0171 FR 0173	012 / 120 009 / 1:0	DO		1530906 (210583) SAND BLDR 0036 GREY LMSN 0121 GREY SNDS 0180
OSGOODE TOWNSHIP CON 04(001)	18 454616 5013637[W]	1973/07 1517	05	FR 0065	025 / 030 015 / 1:0	DO		1513403 () BRWN SAND 0061 ROCK STNS 0067
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1995/11 2348	06 06	FR 0049	005 / 040 010 / 1:0	DO		1528849 (165119) SAND 0040 GRVL 0048 LMSN 0050
OSGOODE TOWNSHIP CON 04(001)	18 453835 5013083[L]	2000/05 1119	08 06 06	FR 0113 FR 0069	021 / 110 006 / 1:0	DO		1531229 (217029) SAND 0004 CLAY 0008 SAND GRVL 0034 GREY LMSN 0120
OSGOODE TOWNSHIP CON 04(001)	18 454344 5013401[W]	1990/09 1119	06	FR 0115 FR 0048	008 / 020 010 / 1:0	NU		1525263 (90000) SAND GRVL BLDR 0040 GREY LMSN 0120
OSGOODE TOWNSHIP CON 04(001)	18 454469 5013316[W]	1998/04 1119	06 06 08	FR 0050 FR 0053	021 / 050 010 / 1:0	DO		1530032 (192727) SAND GRVL 0038 GREY LMSN 0060
OSGOODE TOWNSHIP CON 04(001)	18 454183 5013341[W]	1996/12 1119	06 06	FR 0111 FR 0116	021 / 021 005 / 1:0	DO		1529350 (175363) BLUE CLAY SAND GRVL 0032 GRVL BLDR 0037 GREY LMSN 0120
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1995/11 1119	06 09 06	UK 0097 UK 0114	006 / 080 025 / 1:0	DO		1528841 (164278) SAND CLAY SNDY 0016 BLUE CLAY SLTY 0032 GRVL BLDR 0042 GREY LMSN 0119
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1998/10 1558	06 06	UK 0053 UK 0092	009 / 075 012 / 1:0	ST		1530362 (194750) BRWN SAND 0012 GREY CLAY STNS PCKD 0038 GREY SAND GRVL 0041 GREY LMSN HARD 0100
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1994/08 1119	06 09 06	UK 0072 UK 0111	014 / 100 005 / 1:0	DO		1528154 (147396) CLAY FILL 0005 BRWN SAND 0033 BRWN SAND BLDR 0043 GREY LMSN 0120
OSGOODE TOWNSHIP CON 04(001)	18 453834 5013082[L]	2003/09 1414	08 06 06	FR 0150	030 / 140 007 / 1:0	DO		1534084 (257440) GREY SAND SOFT 0012 GREY LMSN LYRD 0160
OSGOODE TOWNSHIP CON 04(001)	18 454111 5013452[W]	1965/05 1603	03 02	FR 0080	021 / 032 010 / 1:0	DO		1507214 () PRDG 0015 MSND 0052 LMSN 0080
OSGOODE TOWNSHIP CON 04(001)	18 454341 5013532[W]	1967/08 1802	03 02 02	FR 0100	030 / 040 004 / 1:0	DO		1507216 () MSND GRVL 0058 BLDR GRVL 0063 LMSN 0107
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1986/12 4006	10 08 08	FR 0054	003 / 004 035 / 4:0	DO		1521510 (06410) BRWN SAND SAND SAND 0011 BRWN STNS SAND STNS 0050 GREY ROCK LMSN LMSN 0060
OSGOODE TOWNSHIP CON 04(001)	18 454336 5013226[W]	1997/07 1119	08 06 06	FR 0095	010 / 090 009 / 1:0	DO		1529698 (167667) SAND 0011 BLUE CLAY 0016 SAND GRVL 0041 GREY LMSN 0100
OSGOODE TOWNSHIP CON 04(001)	18 453805 5013037[W]	2002/08 1119	08 06 06	UK 0071	008 / 070 030 / 1:0	DO		1533068 (248069) BLUE SAND CLAY 0035 GREY LMSN 0080

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(001)	18 454581 5013742[W]	1976/05 4788	06	FR 0032	020 / 028 012 / 1:0	DO		1515341 () BRWN GRVL SAND HARD 0014 GREY LMSN HARD 0038
OSGOODE TOWNSHIP CON 04(001)	18 454661 5013372[W]	1966/08 1517	04 04	FR 0070	016 / 060 005 / 0:30	DO		1507218 () MSND 0020 MSND STNS 0040 MSND GRVL 0060 ROCK 0071
OSGOODE TOWNSHIP CON 04(001)	18 454218 5013375[W]	1998/05 1119	06 06	FR 0067 FR 0135	015 / 130 006 / 1:0	DO		1530186 (192721) SAND 0046 GREY LMSN 0140
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1996/09 1119	06 06	FR 0054 FR 0055	008 / 040 023 / 1:0	DO		1529351 (167668) CLAY SAND 0042 GRVL SAND 0045 GREY LMSN 0060
OSGOODE TOWNSHIP CON 04(001)	18 453969 5013201[W]	1997/09 1119	06 06	FR 0135 FR 0081	012 / 012 009 / 1:0	DO		1529953 (175292) SAND BLDR 0040 GREY LMSN 0103 GREY SNDS 0140
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1997/10 1119	06 06	FR 0054 FR 0050	009 / 050 030 / 1:0	DO		1529956 (183434) HPAN 0014 SAND GRVL 0040 GREY LMSN 0062
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1991/12 2348	06	FR 0067	020 / 070 015 / 1:0	DO		1526140 (104696) HPAN 0020 SAND 0058 GRVL 0060 SHLE 0070
OSGOODE TOWNSHIP CON 04(001)	18 454471 5013682[W]	1962/07 1503	05 05	FR 0070	026 / 026 010 / 0:30	DO		1507210 () MSND 0040 GRVL FSND 0053 BLUE LMSN 0072
OSGOODE TOWNSHIP CON 04(001)	18 454253 5013458[W]	2002/10 1119	08 06 06	UK 0193 UK 0190	030 / 140 020 / 1:0	DO		1533367 (237954) SAND BLDR 0043 GREY LMSN 0130 WHIT SNDS LMSN 0200
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1994/06 1558	06 06	UK 0168	020 / 070 008 / 1:0	DO		1527984 (142286) BRWN SAND 0006 BRWN CLAY 0010 GREY CLAY 0018 GREY SAND GRVL BLDR 0039 GREY LMSN 0129 GREY SNDS 0173
OSGOODE TOWNSHIP CON 04(001)	18 454345 5013328[W]	1998/04 1119	06 06 08	UK 0050 UK 0053	012 / 050 028 / 1:0	DO		1530031 (182467) SAND GRVL 0036 GREY LMSN 0060
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1991/03 1558	06 06	UK 0116	025 / 060 020 / 1:0	DO		1525387 (100017) BRWN CLAY SNDY BLDR 0025 GREY HPAN BLDR 0048 GREY LMSN 0125
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1998/07 4006	06 06	UK 0082 UK 0110	010 / 031 005 / 1:0	DO		1530099 (193124) BRWN SAND STNS 0010 BRWN STNS SILT LYRD 0045 GREY CLAY SILT LYRD 0058 GREY LMSN FCRD 0064 GREY LMSN MGRD 0120
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	2000/03 1119	08 06 06	UK 0133 UK 0150	030 / 140 012 / 1:0	DO		1531096 (216943) SAND 0011 SAND GRVL BLDR 0042 GREY LMSN 0121 GREY SNDS 0168
OSGOODE TOWNSHIP CON 04(001)	18 453838 5013082[L]	1997/09 1119	06 06	FR 0090 FR 0081	026 / 090 008 / 1:0	DO		1529952 (167662) CLAY SNDY GRVL 0043 SAND BLDR 0056 GREY LMSN 0100
OSGOODE TOWNSHIP CON 04(001)	18 453021 5012742[W]	1958/09 4216	04 05	FR 0057	002 / 005 117 / 4:30	PS		1507206 () CLAY MSND 0051 LMSN 0057

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(001)	18 454671 5013622[W]	1968/07 1603	03 03	FR 0066	026 / 040 006 / 2:0	DO		1509591 () SAND 0050 BLDR SAND 0057 LMSN 0066
OSGOODE TOWNSHIP CON 04(001)	18 454143 5013115[W]	1997/12 1119	06 08	FR 0066 FR 0075	010 / 060 030 / 1:0	DO		1529992 (182405) SAND GRVL 0036 GREY LMSN 0082
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/06 1119	06 06 08	UK 0164	020 / 100 020 / 1:0	DO		1533968 (248364) SAND CLAY GRVL 0006 GREY LMSN 0170
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/06 1119	08 06 06	UK 0155	025 / 150 020 / 1:0	DO		1533984 (248333) SAND BLDR 0012 GREY SNDS 0145 WHIT SNDS 0163
OSGOODE TOWNSHIP CON 04(002)	18 454545 5013115[W]	2004/06 1119	06	0056 0059	013 / 016 020 / 1:0	DO		1534915 (Z14590) A014658 SAND GRVL BLDR 0043 GREY LMSN 0071
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/06 1119	06 08 06	FR 0088 FR 0111	010 / 060 028 / 1:0	DO		1531227 (217003) SAND GRVL 0059 GREY LMSN 0120
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1995/07 1119	09 06 06	UK 0051 UK 0073	008 / 060 024 / 1:0	DO		1528720 (153271) CLAY SNDY 0008 SAND BLDR 0037 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 454234 5012600[W]	2003/06 1119	06 06 08	UK 0071	009 / 070 010 / 1:0	DO		1533969 (248367) SAND GRVL BLDR 0028 GREY LMSN 0083
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1994/07 1414	06 06	FR 0195	030 / 202 050 / 1:0	DO		1528102 (144821) BRWN SAND GRVL PCKD 0020 GREY SAND CLAY PCKD 0024 GREY GRVL BLDR LOOS 0052 GREY LMSN HARD 0064 GREY LMSN HARD 0150 WHIT SNDS HARD 0202
OSGOODE TOWNSHIP CON 04(002)	18 454162 5013177[W]	2001/05 1119	06 08 06	FR 0192 FR 0188	042 / 160 005 / 1:0	DO		1531971 (229393) SAND GRVL 0062 GREY LMSN 0121 GREY SNDS 0200
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/09 1119	06 06 08	FR 0068 FR 0082	012 / 095 007 / 1:0	DO		1531542 (222776) GREY SAND 0007 GREY CLAY 0011 GREY SAND CLAY 0037 GREY LMSN 0121
OSGOODE TOWNSHIP CON 04(002)	18 453615 5011663[W]	2003/04 1119	06 06 08	UK 0148 UK	025 / 170 010 / 1:0	DO		1533777 (248281) SAND BLDR GRVL 0007 GREY LMSN 0130 GREY SNDS 0181
OSGOODE TOWNSHIP CON 04(002)	18 453743 5011564[W]	2002/08 1119	06 06 08	UK 0154	024 / 150 015 / 1:0	DO		1533119 (248116) CLAY SNDY 0006 GREY LMSN 0160
OSGOODE TOWNSHIP CON 04(002)	18 454557 5013153[W]	2002/11 1119	08 06 06	UK 0222 UK 0180 UK 0112	020 / 120 010 / 1:0	DO		1533460 (237978) CLAY SAND GRVL 0044 GREY LMSN 0113 WHIT SNDS 0242
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/09 1119	08 06 06	FR 0071 FR 0074	016 / 060 080 / 1:0	DO		1530843 (210475) SAND 0049 SAND GRVL 0056 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1993/12 4006	10 06 06	UK 0108 UK 0118 UK 0072	008 / 075 005 / 1:0	DO		1527616 (126234) BRWN SAND STNS 0018 GREY CLAY 0046 GREY ROCK SOFT 0071 GREY LMSN 0125

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1993/12 4006	06 06 10	UK 0060 UK 0054	016 / 018 005 / 1:0	DO		1527632 (126273) BRWN SAND STNS 0018 BLCK CLAY 0040 GREY LMSN 0065
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/08 1558	06 06	UK 0063	013 / 025 020 / 1:0	DO		1530715 (208432) BRWN SAND 0004 BRWN CLAY SNDY 0011 GREY CLAY SNDY 0037 GREY GRVL SAND BLDR 0044 GREY LMSN 0075
OSGOODE TOWNSHIP CON 04(002)	18 454883 5013042[W]	1974/07 1558	06 06	FR 0060	015 / 025 025 / 1:0	DO		1514229 () BRWN GRVL SAND 0010 BRWN SAND STNS 0035 GREY SAND BLDR 0055 BLCK GRVL BLDR 0061
OSGOODE TOWNSHIP CON 04(002)	18 454032 5013116[W]	2001/03 1119	08 06 06	FR 0058 FR 0073	007 / 060 028 / 1:0	DO		1531987 (229428) SAND BLDR 0041 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453940 5013252[W]	2001/09 1119	08 06 06	FR 0073 FR 0066	013 / 070 010 / 1:0	DO		1532445 (234253) SAND GRVL 0042 GREY LMSN 0081
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/09 1119	06 06 08	UK 0075	017 / 051 030 / 1:0	DO		1531544 (221739) GREY SAND GRVL 0060 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453998 5012706[L]	1999/04 1119	06 06 08	UK 0190 FR 0121	045 / 180 004 / 1:0	DO		1530544 (192706) CLAY SNDY 0064 GREY LMSN 0133 GREY SNDS 0200
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/09 1119	08 06 06	UK 0075 UK 0073	013 / 050 030 / 1:0	DO		1531540 (221668) BLUE CLAY 0011 GREY SAND BLDR 0058 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/10 1119	06 08 06	FR 0058 FR 0072	010 / 060 018 / 1:0	DO		1531550 (222798) CLAY 0011 SAND BLDR 0046 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453921 5013033[W]	2002/07 1119	08 06 06	UK 0050 UK 0085 UK 0072 UK 0061	003 / 070 025 / 1:0	DO		1533042 (237922) SAND BLDR 0029 GREY LMSN FCRD 0034 GREY LMSN 0102
OSGOODE TOWNSHIP CON 04(002)	18 453973 5013014[W]	2000/11 1558	06 06	UK 0111	008 / 075 010 / 1:0	DO		1531679 (224708) BRWN LOAM SNDY 0008 GREY CLAY 0024 GREY SAND GRVL BLDR 0034 GREY LMSN 0090 GREY LMSN SNDS 0125
OSGOODE TOWNSHIP CON 04(002)	18 454794 5013257[W]	2001/04 1119	06 06 08	FR 0072 FR 0074	010 / 060 020 / 1:0	DO		1531979 (229422) SAND GRVL 0055 GREY LMSN 0082
OSGOODE TOWNSHIP CON 04(002)	18 454168 5013246[W]	2001/06 1119	06 06 08	FR 0059	009 / 060 030 / 1:0	DO		1532258 (232722) SAND GRVL 0036 GREY LMSN 0082
OSGOODE TOWNSHIP CON 04(002)	18 454233 5013266[W]	1998/10 1119	08 06 06	FR 0112	016 / 080 009 / 1:0	DO		1530375 (197117) CLAY 0011 SAND GRVL 0036 GREY LMSN 0118
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/05 1119	06 08 06	UK 0177 UK 0158	014 / 140 012 / 1:0	DO		1533776 (248317) SAND BLDR 0007 GREY LMSN 0138 GREY SNDS 0183

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(002)	18 453860 5012700[W]	2003/04 1119	08 06 06	UK 0051 UK 0054	003 / 045 027 / 1:0	DO IR		1533789 (248269) SAND CLAY PEAT 0034 GREY LMSN 0063
OSGOODE TOWNSHIP CON 04(002)	18 454843 5013044[W]	2004/11 1119	06	0074 0077 0070	018 / 018 020 / 1:0	DO		1535199 (Z19119) A018892 SAND GRVL 0054 BLCK LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/09 1119	08 06 06	FR 0141 FR 0292	026 / 240 006 / 1:0	DO		1530838 (210512) CLAY 0011 SAND GRVL 0034 GREY LMSN 0180 GREY SNDS 0300
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/09 1119	06 06 08	FR 0063 FR 0076 FR 0069	011 / 060 010 / 1:0	DO		1531436 (222779) GREY SAND GRVL BLDR 0046 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/09 1119	08 06 06	FR 0058 FR 0069 FR 0072	009 / 040 012 / 1:0	DO		1531445 (222778) GREY SAND GRVL 0043 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/06 1119	08 06 06	UK 0176	020 / 100 020 / 1:0	DO		1533967 (248365) BLDR SNDY CLAY 0009 BLCK LMSN 0150 GREY SNDS 0183
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1996/05 1558	06 06 06 06	UK 0277 UK 0068	006 / 075 015 / 1:0	DO		1528971 (167058) BRWN SAND GRVL LOOS 0008 GREY CLAY PCKD 0033 GREY SAND GRVL PCKD 0040 GREY LMSN MGRD HARD 0141 GREY SNDS HARD 0290
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/09 1119	06	FR 0211 FR 0224	011 / 118 009 / 1:0	DO		1531559 (221664) GREY SAND BLDR 0037 GREY LMSN 0118 GREY SNDS 0240
OSGOODE TOWNSHIP CON 04(002)	18 454751 5013352[W]	1961/07 3601	04 04	FR 0062	008 / 010 004 / 1:0	DO		1507217 () LOAM STNS 0010 GREY LMSN 0062
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/08 1558	06 06	UK 0084	029 / 050 012 / 1:0	DO		1530716 (208429) BRWN SAND GRVL STNS 0006 BRWN CLAY SNDY 0030 GREY CLAY SNDY STNS 0054 GREY LMSN 0100
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2002/07 1119	06 06 08	UK 0050 UK 0061 UK 0073 UK 0088	003 / 070 030 / 1:0	DO		1532946 (237926) BLUE SAND CLAY 0033 GREY LMSN 0101
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1996/06 6455						1529008 (163147)
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/09 1119	08 06 06	FR 0053 FR 0050	012 / 042 018 / 1:0	DO		1531435 (222780) GREY SAND GRVL 0037 GREY LMSN 0062
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/09 1119	06 06 08	FR 0188 FR 0207	029 / 180 005 / 1:0	DO		1531444 (222777) GREY SAND GRVL BLDR 0043 GREY LMSN 0146 GREY SNDS 0220

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(002)	18 454359 5012673[W]	2003/06 1119	06 08 06	UK 0056 UK 0058	005 / 050 040 / 1:0	NU		1533975 (248368) SAND GRVL 0037 GREY LMSN 0063
OSGOODE TOWNSHIP CON 04(002)	18 453727 5011732[W]	2004/04 1119	06	UK 0174	019 / 057 020 / 1:0	DO		1534636 (Z04904) A004792 SAND BLDR 0008 GREY LMSN 0160 GREY SNDS 0180
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/09 1558	06 06	UK 0088	005 / 050 020 / 1:0	DO		1531420 (220945) BRWN LOAM SNDY 0007 GREY CLAY 0025 GREY SAND GRVL BLDR 0037 GREY LMSN 0100
OSGOODE TOWNSHIP CON 04(002)	18 453998 5012706[L]	1998/11 1119	08 06 06	UK 0075	014 / 070 008 / 1:0	DO		1530480 (197154) SAND GRVL BLDR 0044 GREY LMSN 0079
OSGOODE TOWNSHIP CON 04(002)	18 453230 5012021[W]	1983/02 2348	06	UK 0065	010 / 065 004 / 1:0	DO		1518551 () HPAN 0024 LMSN 0070
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1996/11 1558	05 06	UK 0055	012 / 020 020 / 1:0	DO		1529283 (171297) BRWN CLAY STNS 0004 BRWN SAND 0009 BRWN CLAY 0018 GREY SAND GRVL 0044 GREY LMSN 0070
OSGOODE TOWNSHIP CON 04(002)	18 454790 5013184[W]	2001/05 1119	06 06 08	FR 0075 FR 0072	014 / 060 028 / 1:0	DO		1532087 (229348) SAND GRVL 0038 GREY BLDR LMSN 0082
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/06 1119	08 06 06	FR 0072 FR 0068	014 / 060 030 / 1:0	DO		1530734 (197215) CLAY 0007 SAND BLDR 0052 GREY LMSN 0078
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/11 1119	09 06 06	FR 0073 FR 0070	012 / 042 040 / 1:0	DO		1530901 (210579) CLAY SAND BLDR 0056 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2001/04 1119	08 06 06	FR 0076 FR 0074	010 / 050 080 / 1:0	DO		1531981 (229516) SAND GRVL 0062 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/10 1119	08 06 06	FR 0055 FR 0050 FR 0048	010 / 050 050 / 1:0	DO		1531556 (222801) CLAY BLDR 0037 GREY LMSN 0063
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2002/10 1119	06 08 06	UK 0197 UK 0190	028 / 180 012 / 1:0	DO		1533348 (248192) ROCK LOAM 0006 GREY LMSN 0155 WHIT SNDS LMSN 0201
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2002/06 1558	06 06	UK 0062	003 / 025 020 / 1:0	DO		1532916 (238171) BRWN SAND 0002 GREY SAND WBRG 0006 GREY CLAY 0022 GREY SAND GRVL BLDR 0029 GREY LMSN 0070
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/06 1119	09 06 06	FR 0064	012 / 050 035 / 1:0	DO		1530741 (197219) CLAY 0005 SAND GRVL BLDR 0049 GREY LMSN 0070
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/11 1119	06 06 08		012 / 060 040 / 1:0	DO		1530900 (210580) CLAY SAND BLDR 0054 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453779 5011619[W]	2002/08 1119	06 06 08	UK 0174	020 / 100 020 / 1:0	DO		1533117 (248105) FILL ROCK 0004 GREY LMSN 0182

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(002)	18 453727 5013013[W]	2002/09 1119	08 06 06	UK 0051 UK 0064 UK 0068	005 / 065 023 / 1:0	DO		1533215 (248146) BLUE SAND CLAY BLDR 0032 GREY LMSN 0101
OSGOODE TOWNSHIP CON 04(002)	18 453998 5012706[L]	1999/11 1119	06 06 08	UK 0058 UK 0064	015 / 070 020 / 1:0	DO		1531036 (210593) SAND GRVL 0047 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/10 1119	06 06	UK 0177	043 / 140 030 / 1:0	DO		1534344 (265647) ROCK FCRD 0005 GREY LMSN 0136 GREY SNDS 0185
OSGOODE TOWNSHIP CON 04(002)	18 454049 5012937[W]	2003/06 1119	08 06 06	UK 0046 UK 0054	006 / 050 022 / 1:0	NU		1533974 (248369) SAND GRVL 0033 GREY LMSN 0063
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1998/10 1119	08 06 06	UK 0064 FR 0066	014 / 060 028 / 1:0	DO		1530374 (197152) SAND BLDR 0041 GREY LMSN 0049
OSGOODE TOWNSHIP CON 04(002)	18 453998 5012706[L]	1999/04 1558	06 06	UK 0057	015 / 030 030 / 1:0	DO		1530501 (194827) BRWN LOAM SNDY STNS 0015 GREY CLAY 0035 GREY SAND GRVL BLDR 0045 GREY LMSN HARD 0076
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1997/05 1558	06 06	UK 0055	009 / 020 030 / 1:0	DO		1529424 (175645) BRWN SAND FILL 0002 BRWN CLAY PCKD 0012 GREY SAND GRVL WBRG 0041 GREY LMSN MGRD 0075
OSGOODE TOWNSHIP CON 04(002)	18 454530 5013005[W]	2001/08 1119	08 06 06	FR 0064 FR 0073	013 / 065 030 / 1:0	DO		1532439 (234407) SAND 0046 GREY LMSN 0082
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/03 1119	08 06 06	UK 0050 UK 0064	018 / 070 010 / 1:0	DO		1533626 (248250) BLDR SAND GRVL 0009 BLCK LMSN 0081
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/10 1119	06 06 08	FR 0052 FR 0054 FR 0049	004 / 050 024 / 1:0	DO		1531555 (222844) SAND CLAY BLDR 0036 GREY LMSN 0061
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/12 1558	06	UK 0344 UK 0170 UK 0250	046 / 059 012 / 2:0	DO		1534500 (Z00640) A000552 BRWN CLAY 0006 BRWN SAND 0014 GREY CLAY STNS 0034 GREY SAND GRVL BLDR 0040 GREY LMSN 0140 GREY SNDS 0350
OSGOODE TOWNSHIP CON 04(002)	18 454628 5013484[W]	2001/08 1119	06 06 08	FR 0068 FR 0072	029 / 065 035 / 1:0	DO		1532436 (234408) BLUE CLAY 0018 SAND GRVL 0041 GREY LMSN 0082
OSGOODE TOWNSHIP CON 04(002)	18 453998 5012706[L]	2000/05 1558	06 06	UK 0116	023 / 050 012 / 1:0	DO		1531144 (208573) BRWN SAND STNS 0008 BRWN CLAY 0020 GREY CLAY STNS 0034 GREY SAND GRVL 0041 GREY LMSN 0125
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1996/04 1558	06 06	UK 0087 UK 0028	012 / 020 025 / 1:0	DO		1528919 (167041) BRWN SAND STNS DRY 0004 BRWN HPAN BLDR PCKD 0009 GREY HPAN BLDR PCKD 0015 GREY LMSN HARD 0100
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/06 1119	06 06 08	FR 0172	021 / 160 005 / 1:0	DO		1530733 (197297) SAND GRVL 0059 GREY LMSN 0161 GREY SNDS 0180

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(002)	18 454567 5013116[W]	2002/08 1119	08 06 06	UK 0054 UK 0056	013 / 050 045 / 1:0	DO		1533114 (248093) SAND CLAY GRVL 0041 GREY LMSN 0064
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/08 1119	06 08 08	FR 0067 FR 0078 FR 0071	010 / 060 070 / 1:0	DO		1531437 (217082) SAND GRVL BLDR 0048 GREY LMSN 0082
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/03 1119	08 06 06	UK 0170	028 / 170 012 / 1:0	DO		1533625 (248249) SAND GRVL BLDR 0009 BLCK LMSN 0135 WHIT SNDS 0181
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/11 1119	06 06	UK 0171 UK 0150	012 / 120 025 / 1:0	DO		1534343 (265680) CLAY SNDY 0008 GREY LMSN 0127 GREY SNDS 0182
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/10 1119	06 06	UK 0184	058 / 140 015 / 1:0	DO		1534350 (265648) ROCK FILL 0007 GREY LMSN 0151 GREY SNDS 0192
OSGOODE TOWNSHIP CON 04(002)	18 454764 5013000[W]	2001/11 1119	06 06 08	UK 0068 UK 0073	014 / 060 025 / 1:0	DO		1532593 (237707) SAND BLDR 0048 GREY LMSN 0082
OSGOODE TOWNSHIP CON 04(002)	18 454789 5013012[W]	2001/04 1119	08 06 06	FR 0078	012 / 050 035 / 1:0	DO		1531980 (229423) SAND GRVL 0058 GREY LMSN 0082
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/10 1119	06 06 08	FR 0055	010 / 050 050 / 1:0	DO		1531548 (222841) GREY SAND GRVL 0041 GREY LMSN 0063
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2001/08 1558	06 06	UK 0068	005 / 025 030 / 1:0	DO		1532294 (230217) BRWN SAND BLDR 0002 BRWN SAND 0007 GREY CLAY 0016 GREY SAND GRVL 0024 GREY LMSN 0075
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/11 1119	06 06	UK 0051 UK 0065	005 / 050 050 / 1:0	DO		1534458 (237999) SAND GRVL 0035 GREY LMSN 0083
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/10 1119	08 06 06	FR 0074 FR 0072	011 / 060 035 / 1:0	DO		1531549 (222845) SAND GRVL 0058 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/06 1119	09 06 06	FR 0067 FR 0081 FR 0172	012 / 140 017 / 1:0	DO		1530731 (206323) CLAY 0011 SAND BLDR 0036 GREY LMSN 0142 SNDS 0180
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1998/10 1558	06 06	UK 0052	013 / 040 050 / 1:0	ST		1530357 (194773) BRWN CLAY 0004 BRWN SAND WBRG 0010 GREY CLAY BLDR 0032 GREY SAND GRVL 0039 GREY LMSN 0075
OSGOODE TOWNSHIP CON 04(002)	18 453983 5013231[W]	2001/05 1119	08 06 06	FR 0053 FR 0059 FR 0051	011 / 050 028 / 1:0	DO		1531970 (229391) SAND GRVL 0042 GREY LMSN 0062
OSGOODE TOWNSHIP CON 04(002)	18 453798 5011556[W]	2002/09 1119	06 06 08	UK 0154	025 / 120 020 / 1:0	DO		1533121 (248118) SAND 0004 GREY LMSN 0160

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(002)	18 453840 5012929[W]	2001/06 1558	06 06	UK 0191	006 / 035 020 / 1:0	DO		1532047 (230124) BRWN SAND 0004 GREY SAND WBRG 0012 GREY CLAY STNS 0024 GREY SAND GRVL BLDR 0039 GREY LMSN 0110 GREY SNDS 0200
OSGOODE TOWNSHIP CON 04(002)	18 453998 5012706[L]	1999/04 1119	08 06 06	FR 0073	014 / 060 024 / 1:0	DO		1530543 (192705) SAND CLAY 0050 GRVL BLDR 0062 GREY LMSN 0077
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/08 1119	06 06 08	FR 0068 FR 0073	014 / 060 035 / 1:0	DO		1530836 (206377) SAND FILL 0004 SAND GRVL 0049 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2002/07 1119	08 06 06	UK 0090 UK 0088 UK 0058 UK 0041	002 / 070 035 / 1:0	DO		1532945 (237925) SAND CLAY 0022 GREY LMSN 0101
OSGOODE TOWNSHIP CON 04(002)	18 453214 5012243[W]	2003/04 1119	06 06 08	UK 0150 UK 0175	018 / 170 030 / 1:0	DO		1533784 (248284) SAND GRVL BLDR 0009 GREY LMSN 0130 GREY SNDS 0181
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2001/06 1119	08 06 06	FR 0189	016 / 140 020 / 1:0	DO		1532259 (234318) SAND CLAY GRVL 0050 GREY LMSN 0195
OSGOODE TOWNSHIP CON 04(002)	18 454427 5013377[W]	2001/11 1119	08 06 06	UK 0047 UK 0053	011 / 050 030 / 1:0	DO		1532597 (232827) BRWN CLAY 0006 SAND GRVL 0036 GREY LMSN 0063
OSGOODE TOWNSHIP CON 04(002)	18 454216 5013197[W]	2000/11 1119	06 06 09	FR 0070 FR 0088	016 / 090 010 / 1:0	DO		1531712 (222945) SAND BLDR 0058 GREY LMSN 0100
OSGOODE TOWNSHIP CON 04(002)	18 454628 5013308[W]	2001/05 1119	06 06 08	FR 0075 FR 0070 FR 0072	014 / 060 030 / 1:0	DO		1532089 (229413) SAND 0046 GREY LMSN 0080
OSGOODE TOWNSHIP CON 04(002)	18 453999 5012705[L]	1999/06 1119	06 06 09	FR 0070 FR 0071	016 / 060 030 / 1:0	DO		1530732 (206342) SAND 0005 CLAY 0011 SAND GRVL 0055 GREY LMSN 0078
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012707[L]	2000/06 1119	08 06 06	UK 0067 UK 0073	011 / 070 030 / 1:0	DO		1531286 (217051) SAND BLDR 0050 GREY LMSN 0083
OSGOODE TOWNSHIP CON 04(002)	18 454493 5013136[W]	2001/03 1119	08 06 06	FR 0053 FR 0063 FR 0065 FR 0074	012 / 060 035 / 1:0	DO		1531974 (229450) SAND GRVL 0038 GREY LMSN 0081
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2001/07 1119	08 06 06	FR 0053 FR 0050	044 / 045 035 / 1:0	DO		1532265 (232789) SAND CLAY 0036 GREY LMSN 0061
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2003/09 1119	06 06	UK 0176	017 / 140 015 / 1:0	DO		1534158 (265599) SAND 0006 GREY LMSN 0101 GREY SNDS 0183
OSGOODE TOWNSHIP CON 04(002)	18 453994 5012706[L]	2002/10 1119	08 06 06	UK 0185	025 / 180 015 / 1:0	DO		1533349 (248190) ROCK LOAM 0004 GREY LMSN 0170 GREY SNDS 0195

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 04(005)	18 454460 5011584[L]	1993/05 1558	06 06	UK 0087	010 / 075 010 / 1:0	DO		1527396 (135965) BRWN SAND FGVL 0008 GREY CLAY SNDY BLDR 0039 GREY LMSN 0098
OSGOODE TOWNSHIP CON 04(005)	18 454460 5011584[L]	1985/05 2348	06	FR 0058	016 / 016 020 / 1:0	DO		1520236 () GRVL SAND 0056 LMSN 0061
OSGOODE TOWNSHIP CON 04(005)	18 455211 5011832[W]	1965/07 3504	06 06	FR 0055	020 / 065 005 / 0:30	DO		1507224 () MSND BLDR 0015 GREY LMSN 0068
OSGOODE TOWNSHIP CON 04(005)	18 454460 5011584[L]	1986/08 3644	06 06	FR 0140 SU 0160	012 / 140 007 / 1:0	DO		1521011 () GREY GRVL 0012 GREY LMSN 0145 WHIT SNDS 0165
OSGOODE TOWNSHIP CON 05(001)	18 455121 5013862[W]	1958/05 1603	02 02	FR 0113	042 / 060 007 / 3:0	DO		1507261 () MSND 0015 BLDR MSND 0078 LMSN 0113
OSGOODE TOWNSHIP CON 05(001)	18 455181 5013802[W]	1958/07 1530	04 04	FR 0080	030 / 040 007 / 1:0	DO		1507262 () MSND 0060 QSND 0070 GRVL 0076 ROCK 0080
OSGOODE TOWNSHIP CON 05(001)	18 455271 5013747[W]	1961/04 1530	04 04	FR 0072	035 / 045 010 / 2:0	DO		1507267 () MSND STNS 0010 MSND 0065 GRVL 0070 GREY LMSN 0072
OSGOODE TOWNSHIP CON 05(001)	18 454846 5013607[W]	1962/04 1539	04 04	FR 0083	040 / 045 008 / 0:30	DO		1507271 () GRVL 0050 MSND 0081 ROCK 0083
OSGOODE TOWNSHIP CON 05(001)	18 455011 5013602[W]	1967/06 1503	05 05	FR 0130	040 / 040 010 / 1:0	DO		1507287 () GRVL MSND BLDR 0011 MSND 0080 HPAN 0095 LMSN 0131
OSGOODE TOWNSHIP CON 05(001)	18 454881 5013512[W]	1967/06 1517	04 04	FR 0082	035 / 060 010 / 0:30	DO		1507294 () LOAM MSND 0020 QSND 0066 MSND GRVL 0078 LMSN 0085
OSGOODE TOWNSHIP CON 05(001)	18 456030 5014621[W]	1978/07 1517	06	FR 0155	015 / 080 012 / 1:10	DO		1516635 () BRWN HPAN 0011 GREY LMSN 0152 GREY SNDS 0158
OSGOODE TOWNSHIP CON 05(001)	18 455152 5013882[W]	1974/07 1558	06 06	FR 0058	005 / 020 020 / 1:0	DO		1514230 () BRWN SAND GRVL BLDR 0061 BLCK LMSN 0072
OSGOODE TOWNSHIP CON 05(001)	18 456292 5014727[W]	1975/03 1558	06 06	FR 0147	030 / 090 007 / 1:0	DO		1514595 () BRWN SAND 0005 GREY LMSN 0040 GREY SNDS 0138 WHIT SNDS 0148
OSGOODE TOWNSHIP CON 05(001)	18 455431 5014252[W]	1970/02 3504	06 06	FR 0106	018 / 049 008 / 2:0	DO		1510525 () LOAM 0008 MSND BLDR 0028 STNS 0030 FSND 0032 BLUE LMSN 0106 WHIT SNDS 0110
OSGOODE TOWNSHIP CON 05(001)	18 454891 5013577[W]	1972/06 1517	05	FR 0082	040 / 050 015 / 1:30	DO		1511801 () GRVL 0024 QSND 0070 GRVL 0082 ROCK 0084
OSGOODE TOWNSHIP CON 05(001)	18 455051 5014022[W]	1960/09 3002	05 05	FR 0069 FR 0046	028 / 060 008 / 1:0	DO		1507266 () BRWN CLAY GRVL CLAY 0023 GREY LMSN 0078
OSGOODE TOWNSHIP CON 05(001)	18 455291 5013832[W]	1961/04 1530	04	FR 0065	030 / 040 010 / 2:0	DO		1507268 () PRDG 0030 MSND 0050 STNS 0057 GRVL 0065

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 05(001)	18 455261 5013922[W]	1967/05 1517	05	FR 0051	023 / 030 010 / 0:30	DO		1507293 () MSND 0020 MSND STNS 0048 GRVL 0052
OSGOODE TOWNSHIP CON 05(001)	18 454851 5013622[W]	1971/01 1517	05	FR 0082	045 / 060 010 / 1:0	DO		1511004 () BRWN SAND 0005 BRWN SAND GRVL 0075 BRWN GRVL 0082
OSGOODE TOWNSHIP CON 05(001)	18 454701 5013632[W]	1969/12 4401	05 05	FR 0043	010 / 033 005 / 1:20	DO		1510346 () PRDG 0012 BRWN FSND STNS 0038 GREY LMSN 0045
OSGOODE TOWNSHIP CON 05(001)	18 454781 5013552[W]	1969/04 1517	04 04	FR 0064	030 / 035 010 / 2:0	DO		1510014 () SAND GRVL 0030 QSND 0060 GRVL 0063 LMSN 0065
OSGOODE TOWNSHIP CON 05(001)	18 454931 5013672[W]	1971/08 1517	05	FR 0076	035 / 057 / 1:0	DO		1511454 () GREY GRVL 0015 GREY QSND 0075 GREY LMSN 0077
OSGOODE TOWNSHIP CON 05(001)	18 455146 5013732[W]	1975/09 1505	06	FR 0094	030 / 060 025 / 1:0	ST DO		1515105 () BRWN FILL LOOS PCKD 0002 BRWN FSND PCKD 0075 BRWN SAND GRVL CGRD 0082 GREY LMSN HARD 0103
OSGOODE TOWNSHIP CON 05(001)	18 455549 5014115[L]	2000/09 1558	06 06	UK 0062	026 / 040 012 / 1:0	DO		1531422 (220942) BRWN SAND BLDR GRVL 0014 GREY SAND BLDR GRVL 0033 GREY GRVL 0042 GREY LMSN HARD 0070
OSGOODE TOWNSHIP CON 05(001)	18 454849 5013492[W]	1970/08 1517	05	FR 0077	030 / 060 005 / 1:0	DO		1510887 () BRWN MSND STNS 0020 GREY MSND 0070 BLCK MSND GRVL 0074 GREY LMSN 0078
OSGOODE TOWNSHIP CON 05(001)	18 455324 5013899[W]	1974/05 1517	05 05	UK 0090	035 / 060 010 / 1:30	DO		1514186 () LOAM SAND 0008 FSND 0080 GRVL 0086 SNDS 0092
OSGOODE TOWNSHIP CON 05(001)	18 456146 5014652[W]	1961/10 1530	05 05	FR 0040	009 / 033 005 / 3:0	DO		1507269 () HPAN STNS 0015 GREY ROCK 0045
OSGOODE TOWNSHIP CON 05(001)	18 456006 5014562[W]	1962/05 2308	04 04	FR 0040	017 / 027 007 / 1:0	DO		1507272 () HPAN 0018 GREY LMSN 0040
OSGOODE TOWNSHIP CON 05(001)	18 455421 5014047[W]	1963/06 3504	05 05	FR 0077	020 / 065 007 / 1:0	DO		1507275 () MSND 0033 LMSN 0077
OSGOODE TOWNSHIP CON 05(001)	18 455531 5014292[W]	1955/06 2308	04	FR 0036	028 / 028 003 / 1:0	DO		1507255 () HPAN 0010 MSND 0030 GRVL 0036
OSGOODE TOWNSHIP CON 05(001)	18 455156 5013732[W]	1972/06 1517	05	FR 0090	042 / 055 015 / 1:30	DO		1511868 () GRVL STNS 0025 SAND BLDR 0070 GRVL BLDR 0090
OSGOODE TOWNSHIP CON 05(001)	18 455330 5014221[W]	1979/06 4006	06	FR 0155 FR 0160 FR 0162 FR 0090	012 / 010 / 1:0	DO		1517032 () BRWN SAND 0005 BRWN SAND STNS BLDR 0017 GREY SHLE LMSN 0165
OSGOODE TOWNSHIP CON 05(001)	18 456221 5014702[W]	1976/10 1505	06	FR 0075	012 / 035 006 / 1:0	DO		1515883 () BRWN LOAM LOOS 0001 GREY CLAY BLDR PCKD 0018 GREY LMSN HARD 0085

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 05(001)	18 454011 5013295[W]	1996/07 1119	06 09 06	UK 0055 UK 0053	011 / 040 021 / 1:0	DO		1529114 (167641) BRWN SAND 0011 BLUE CLAY 0017 GREY SAND BLDR 0044 LMSN 0060
OSGOODE TOWNSHIP CON 05(001)	18 455030 5013621[W]	1979/09 1517	06	FR 0085	045 / 055 015 / 1:20	DO		1517145 () BRWN HPAN 0010 YLLW SAND 0085 BLCK GRVL 0087 STNS 0087
OSGOODE TOWNSHIP CON 05(001)	18 454154 5013374[W]	1996/07 1119	06 06 09	UK 0054 UK 0055	009 / 040 022 / 1:0	DO		1529115 (167642) SAND GRVL BLDR 0042 LMSN 0060
OSGOODE TOWNSHIP CON 05(001)	18 455552 5014114[L]	1990/05 1517	06	FR 0062	030 / 050 050 / :0	CO		1524536 (66797) BRWN SAND GRVL STNS 0050 GREY LMSN 0064
OSGOODE TOWNSHIP CON 05(001)	18 455111 5013782[W]	1971/07 1517	05	FR 0088	035 / 045 010 / :0	DO		1511283 () GRVL 0003 SAND 0078 GRVL 0082 ROCK 0088
OSGOODE TOWNSHIP CON 05(001)	18 455136 5013732[W]	1972/06 1517	05	FR 0075	-025 / 030 012 / 1:30	DO		1511800 () GRVL 0025 QSND 0072 GRVL 0075
OSGOODE TOWNSHIP CON 05(001)	18 454921 5013921[W]	1956/02 3002	05 05	FR 0103	040 / 084 006 / 12:0	CO		1507256 () MSND 0090 GRVL 0187
OSGOODE TOWNSHIP CON 05(001)	18 455246 5014082[W]	1957/03 4216	05 05 04	FR 0076	040 / 045 003 / 0:30	DO		1507257 () CLAY 0076 SHLE 0080 LMSN 0103
OSGOODE TOWNSHIP CON 05(001)	18 455241 5013937[W]	1957/03 4216	04 05 05	FR 0099	040 / 090 003 / 0:15	DO		1507258 () CLAY 0080 SHLE 0099
OSGOODE TOWNSHIP CON 05(001)	18 455391 5013902[W]	1958/10 4216	05 05	FR 0080	035 / 090 003 / 1:0	DO		1507263 () GRVL 0064 BRWN LMSN 0104
OSGOODE TOWNSHIP CON 05(001)	18 454996 5013647[W]	1959/04 3504	05 05	FR 0098	045 / 050 007 / 1:0	DO		1507264 () MSND BLDR 0083 LMSN 0098
OSGOODE TOWNSHIP CON 05(001)	18 454986 5013767[W]	1965/03 1503	05 05	FR 0088	041 / 041 010 / 1:0	DO		1507282 () MSND 0065 HPAN GRVL 0075 LMSN 0090
OSGOODE TOWNSHIP CON 05(001)	18 454751 5013612[W]	1969/04 1517	04 04	FR 0072	035 / 040 010 / 1:0	DO		1510041 () MSND 0005 QSND 0060 GRVL MSND 0072 LMSN 0074
OSGOODE TOWNSHIP CON 05(001)	18 455230 5013921[W]	1981/04 1517	06	FR 0085	045 / 050 015 / 1:20	DO		1517640 () BRWN LOAM 0002 YLLW SAND 0075 BLCK GRVL 0080 GREY SAND 0085 GREY LMSN 0087
OSGOODE TOWNSHIP CON 05(001)	18 455379 5013945[W]	1974/06 1558	06 06	FR 0170 FR 0090	070 / 175 008 / 1:0	DO		1514138 () BRWN GRVL BLDR 0060 BLCK LMSN 0140 GREY SNDS 0173 GREY SNDS 0225
OSGOODE TOWNSHIP CON 05(001)	18 455302 5013982[W]	1975/01 1558	06 06	FR 0079	040 / 060 050 / 1:0	DO		1514578 () GRVL BLDR SAND 0076 BLCK LMSN 0080
OSGOODE TOWNSHIP CON 05(001)	18 455411 5013822[W]	1976/09 1517	06	FR 0060	035 / 050 015 / 1:20	DO		1515607 () BRWN SAND GRVL 0057 GREY LMSN 0062

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 05(001)	18 454776 5013452[W]	1964/06 3113	04	FR 0080	055 / 060 006 / 0:30	DO		1507281 () GRVL MSND 0050 WHIT MSND 0065 GRVL MSND 0075 GRVL 0080
OSGOODE TOWNSHIP CON 05(001)	18 455029 5013727[W]	2002/12 1558	06 05	UK 0115 UK 0095	036 / 060 015 / 1:0	DO		1533514 (250528) BRWN SAND 0064 GREY SAND STNS 0076 GREY LMSN 0120
OSGOODE TOWNSHIP CON 05(001)	18 455552 5014114[L]	1995/06 1558	06 05	UK 0058	008 / 018 015 / 1:0	DO		1528532 (153134) BRWN SAND STNS DRY 0003 BRWN SAND WBRG 0008 GREY SAND WBRG 0020 GREY CLAY STKY 0037 GREY CLAY BLDR 0050 GREY LMSN 0058
OSGOODE TOWNSHIP CON 05(001)	18 455441 5014257[W]	1962/07 3113	04 04	FR 0056	010 / 010 003 / 0:30	DO		1507274 () GREY FSND 0028 GRVL BLDR 0033 GREY LMSN 0056
OSGOODE TOWNSHIP CON 05(001)	18 455391 5013902[W]	1958/05 1603	02 02	FR 0104	022 / 030 003 / 3:0	DO		1507260 () MSND 0005 BLDR MSND 0050 LMSN 0104
OSGOODE TOWNSHIP CON 05(001)	18 455226 5013827[W]	1960/05 1603	02 02	FR 0092	037 / 050 004 / 2:0	DO		1507265 () CLAY 0020 GRVL MSND 0070 LMSN 0092
OSGOODE TOWNSHIP CON 05(001)	18 456351 5014742[W]	1961/11 3002	04 04	FR 0029	011 / 019 007 / 1:0	DO		1507270 () BLDR HPAN 0013 GREY LMSN 0034
OSGOODE TOWNSHIP CON 05(001)	18 455146 5013672[W]	1963/07 1539	04	FR 0082	038 / 065 006 / 1:0	DO		1507278 () GRVL 0020 MSND 0070 GRVL 0082
OSGOODE TOWNSHIP CON 05(001)	18 455901 5014522[W]	1963/03 4825	04 04	FR 0036	012 / 014 005 / 0:30	DO		1507284 () HPAN 0010 BLUE LMSN 0040
OSGOODE TOWNSHIP CON 05(001)	18 454851 5013672[W]	1971/08 1517	05	FR 0082	035 / 040 015 / 1:0	DO		1511451 () GREY GRVL 0015 BRWN SAND 0079 BLCK GRVL 0082 GREY LMSN 0084
OSGOODE TOWNSHIP CON 05(001)	18 455084 5013843[W]	1998/09 1414	08 06 06	FR 0050	026 / 050 010 / 1:0	DO		1530253 (197001) BRWN SAND GRVL PCKD 0010 BRWN SAND GRVL PCKD 0027 BRWN LMSN ROCK SHLE 0050
OSGOODE TOWNSHIP CON 05(001)	18 455230 5013821[W]	1983/10 3644	06 06	FR 0098	035 / 060 050 / 1:0	DO		1518707 () GREY SAND 0040 GREY GRVL 0084 GREY LMSN 0105
OSGOODE TOWNSHIP CON 05(001)	18 455201 5013822[W]	1977/04 1558	06 06	FR 0084	040 / 040 008 / 20:0	DO		1515889 () BRWN GRVL STNS SAND 0020 GREY GRVL SAND PCKD 0045 GREY SAND STNS PCKD 0065 GREY GRVL BLDR PCKD 0075 GREY HPAN BLDR PCKD 0079 GREY LMSN 0083 GREY GRVL LOOS 0085 GREY LMSN 0090
OSGOODE TOWNSHIP CON 05(001)	18 455494 5013866[W]	1998/06 4006						1530101 (193122)
OSGOODE TOWNSHIP CON 05(001)	18 455552 5014114[L]	1991/07 3701	06	FR 0228 FR 0180 FR 0220	140 / 180 008 / 1:0	DO		1526071 (100582) BRWN CLAY BLDR PCKD 0039 GREY LMSN 0180 WHIT SNDS LMSN 0228

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 05(001)	18 455151 5013852[W]	1970/12 1517	05	FR 0079	035 / 050 010 / 1:0	DO		1511007 () BRWN FSND 0070 BRWN MSND GRVL 0080
OSGOODE TOWNSHIP CON 05(001)	18 455071 5013662[W]	1972/11 1517	05	FR 0088	-030 / 050 010 / 1:0	DO		1512261 () GREY GRVL 0004 BRWN QSND 0079 BLCK GRVL 0084 GREY LMSN 0090
OSGOODE TOWNSHIP CON 05(001)	18 455674 5014365[W]	1973/11 3658	06 06	FR 0178	015 / 075 015 / 2:0	DO		1514024 () BRWN SAND GRVL BLDR 0010 GREY LMSN 0180
OSGOODE TOWNSHIP CON 05(001)	18 455071 5013772[W]	1966/02 1603	03 03	FR 0091	041 / 055 006 / 1:0	DO		1507283 () MSND BLDR 0006 MSND GRVL 0070 GRVL MSND BLDR 0077 LMSN 0091
OSGOODE TOWNSHIP CON 05(001)	18 454707 5013596[W]	1997/05 4006	06 06	UK 0082 UK 0089	018 / 019 010 / 1:0	DO		1529413 (171926) BRWN SAND 0010 BRWN SAND STNS 0025 GREY GRVL SAND LYRD 0050 GREY GRVL MGRD 0070 GREY LMSN FCRD 0076 GREY LMSN MGRD 0095
OSGOODE TOWNSHIP CON 05(001)	18 454822 5013529[W]	4875	06 06	FR 0089	039 / 070 020 / 0:45	DO		1523993 (52003) BRWN GRVL SAND STNS 0007 BRWN SAND 0020 GREY CLAY 0032 GREY CLAY SNDY 0074 GREY GRVL SAND 0085 GREY LMSN SHLE 0094
OSGOODE TOWNSHIP CON 05(001)	18 454901 5013642[W]	1970/08 3644	05	FR 0104	037 / 050 012 / 1:0	DO		1510809 () BRWN MSND GRVL 0021 BRWN MSND 0082 GREY HPAN GRVL 0090 GREY LMSN 0104
OSGOODE TOWNSHIP CON 05(001)	18 455506 5014292[W]	1971/05 1517	05	FR 0125	012 / 060 010 / 1:0	DO		1511281 () BRWN SAND 0012 GREY LMSN 0120 BRWN LMSN 0130
OSGOODE TOWNSHIP CON 05(001)	18 454930 5013621[W]	1984/08 3644	06 06	FR 0100	010 / 070 020 / 1:0	DO		1519126 () GREY CLAY STNS 0018 GREY LMSN 0105
OSGOODE TOWNSHIP CON 05(001)	18 455492 5013853[W]	1998/06 4006	06 06	UK 0132 UK 0061 UK 0123	021 / 047 008 / 1:0	DO		1530100 (193121) BRWN SAND STNS 0015 GREY SAND SILT LYRD 0038 GREY LMSN FCRD 0041 GREY LMSN MGRD 0140
OSGOODE TOWNSHIP CON 05(001)	18 454405 5013495[W]	1996/05 1119	06 09 06	UK 0060 UK 0072 UK 0069	015 / 070 006 / 1:0	DO		1528998 (167237) RED SAND 0013 BLUE CLAY 0029 GRVL HPAN 0035 GREY LMSN 0080
OSGOODE TOWNSHIP CON 05(001)	18 455351 5012862[W]	1969/08 1517	04	FR 0074	030 / 045 010 / 1:0	DO		1510188 () BRWN MSND 0020 GREY FSND 0050 GREY QSND 0071 BLCK MSND GRVL 0074
OSGOODE TOWNSHIP CON 05(001)	18 455161 5013812[W]	1969/08 1517	04	FR 0076	035 / 052 005 / 2:0	DO		1510206 () BRWN MSND STNS 0015 GREY FSND 0075 BLCK MSND GRVL 0077
OSGOODE TOWNSHIP CON 05(001)	18 455095 5013844[W]	1973/11 1119	06 06	FR 0095	047 / 055 020 / 0:30	DO		1513679 () SAND 0070 SAND GRVL 0081 GREY LMSN 0100
OSGOODE TOWNSHIP CON 05(001)	18 456006 5014582[W]	1957/11 3566	05 05	FR 0125	018 / 090 003 / 1:0	DO		1507259 () CLAY BLDR 0012 LMSN 0125

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 05(001)	18 455201 5013812[W]	1963/07 1539	04 04	FR 0083	036 / 064 006 / 1:0	DO		1507277 () GRVL 0012 MSND 0065 GRVL 0082 ROCK 0083
OSGOODE TOWNSHIP CON 05(001)	18 454871 5013622[W]	1965/03 1517	04	FR 0084	040 / 060 005 / 0:30	DO		1507286 () LOAM MSND 0012 MSND GRVL 0060 STNS MSND 0080 GRVL 0085
OSGOODE TOWNSHIP CON 05(001)	18 455216 5013722[W]	1962/05 1526	04 04	FR 0090	018 / 044 003 / 3:0	DO		1507273 () GRVL 0060 FSND 0072 GREY LMSN 0100
OSGOODE TOWNSHIP CON 05(001)	18 455601 5014327[W]	1962/08 1530	05	FR 0030	003 / 010 015 / 0:30	DO		1507276 () MSND 0005 QSND 0020 HPAN 0028 GRVL 0030
OSGOODE TOWNSHIP CON 05(001)	18 455811 5014457[W]	1963/08 1539	04 04	FR 0070	010 / 085 001 / 1:0	DO		1507279 () MSND 0013 GREY LMSN 0085
OSGOODE TOWNSHIP CON 05(001)	18 455476 5013912[W]	1963/08 1526	04 04	FR 0055	014 / 020 003 / 3:0	CO		1507280 () GRVL 0018 LMSN 0060
OSGOODE TOWNSHIP CON 05(001)	18 454906 5013527[W]	1965/03 1517	04 04	FR 0087	074 / 089 005 / 0:30	DO		1507285 () LOAM MSND 0030 MSND 0060 QSND 0083 GRVL MSND 0085 GREY ROCK 0089
OSGOODE TOWNSHIP CON 05(001)	18 454851 5013622[W]	1976/09 1558	06 06	FR 0083	025 / 030 030 / 1:0	DO		1515617 () BRWN SAND 0055 GREY SAND 0070 GREY GRVL STNS PCKD 0079 BLCK LMSN FCRD 0084
OSGOODE TOWNSHIP CON 05(001)	18 455552 5014114[L]	1992/06 3323	06	FR 0155	012 / 045 012 / 3:0	DO		1526983 (126325) BRWN FILL 0002 BRWN SAND 0010 BRWN FGVL 0015 BRWN LMSN 0150 WHIT SNDS 0160
OSGOODE TOWNSHIP CON 05(001)	18 456391 5014642[W]	1971/09 3002	06	FR 0162 FR 0041	023 / 170 004 / 2:0	DO		1511485 () BRWN LOAM SAND STNS 0011 GREY CLAY SILT SAND 0024 GREY LMSN 0160 GREY SNDS 0172
OSGOODE TOWNSHIP CON 05(001)	18 454951 5013762[W]	1969/04 1517	04 04	FR 0078	035 / 060 005 / 2:0	DO		1510113 () MSND STNS 0010 QSND 0072 GRVL MSND 0076 GREY ROCK 0080
OSGOODE TOWNSHIP CON 05(001)	18 455451 5013972[W]	1954/02 3566	05	FR 0045	020 / 021 008 / 1:0	CO		1507254 () MSND GRVL BLDR 0045
OSGOODE TOWNSHIP CON 05(001)	18 455301 5013772[W]	1971/04 1517	05	FR 0112	040 / 065 010 / 1:0	DO		1511133 () BRWN SAND 0022 BRWN GRVL STNS 0040 BRWN QSND 0080 BLCK LMSN 0113
OSGOODE TOWNSHIP CON 05(002)	18 455706 5013742[L]	2003/09 1119				NU		1534163 (265581)
OSGOODE TOWNSHIP CON 05(002)	18 455706 5013742[L]	2003/09 1119	06 06	UK 0099	050 / 080 020 / 1:0	DO		1534164 (248917) SAND GRVL BLDR 0085 GREY LMSN 0103
OSGOODE TOWNSHIP CON 05(002)	18 455707 5013743[L]	2000/08 1558	06 06	UK 0147	013 / 025 050 / 1:0	DO		1531339 (220906) BRWN LOAM SNDY STNS 0014 GREY LMSN HARD 0089 GREY SNDS VERY HARD 0150

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OSGOODE TOWNSHIP CON 05(002)	18 455711 5013742[L]	1985/07 1558	06 06	FR 0198	015 / 070 005 / 1:0	DO		1519910 () BRWN SAND GRVL 0008 GREY CLAY SNDS 0035 GREY HPAN BLDR 0058 GREY LMSN 0160 GREY SNDS 0200
OSGOODE TOWNSHIP CON 05(002)	18 455471 5013512[W]	1963/11 1503	05 05	FR 0080 FR 0130	045 / 080 002 / 1:0	DO		1507289 () MSND 0068 BLUE LMSN 0133
OSGOODE TOWNSHIP CON 05(002)	18 455472 5013826[W]	2003/02 1119	08 06 06	UK 0175 UK 0172	050 / 140 010 / 1:0	DO		1533617 (248888) SAND GRVL 0046 GREY LMSN 0129 GREY SNDS 0177
OSGOODE TOWNSHIP CON 05(002)	18 455711 5013742[L]	1995/04 1558	06 06	UK 0025 UK 0049	012 / 020 025 / 1:0	DO		1528487 (153112) BRWN HPAN STNS 0012 GREY LMSN 0060
OSGOODE TOWNSHIP CON 05(002)	18 455711 5013742[L]	1995/08 1558	06 06	UK 0216	027 / 100 006 / 1:0	DO		1528714 (153167) BRWN LOAM STNS SNDY 0006 GREY LMSN HARD 0140 GREY SNDS 0223
OSGOODE TOWNSHIP CON 05(002)	18 455581 5013722[W]	1962/07 3113	05	FR 0030	018 / 018 004 / 0:30	ST DO		1507291 () CSND STNS 0020 FSND 0025 GRVL 0030
OSGOODE TOWNSHIP CON 05(002)	18 455521 5013742[W]	1962/08 3113	04	FR 0030	018 / 018 002 / 0:30	DO		1507290 () MSND GRVL 0025 GRVL 0030
OSGOODE TOWNSHIP CON 05(002)	18 455710 5013742[L]	1998/09 3749	06	FR 0168 FR 0072	022 / 180 015 / 1:0	DO		1530453 (194599) BRWN SAND ROCK LOOS 0023 GREY SAND SILT LOOS 0036 GREY GRVL 0038 GREY LMSN 0180
OSGOODE TOWNSHIP CON 05(002)	18 455711 5013742[L]	1997/04 1558	05 06	UK 0058	002 / 012 020 / 1:0	DO		1529396 (175624) BRWN CLAY STNS WBRG 0006 GREY CLAY SNDY 0020 GREY SAND DRY 0036 GREY GRVL PCKD 0056 GREY LMSN 0076
OSGOODE TOWNSHIP CON 05(002)	18 455707 5013743[L]	2000/08 1558	06 06	UK 0141	010 / 025 030 / 1:0	DO		1531340 (220904) BRWN LOAM SNDY BLDR 0013 GREY LMSN HARD 0085 GREY SNDS 0145
OSGOODE TOWNSHIP CON 05(002)	18 455681 5013802[W]	1963/11 1503	05 05	FR 0074	032 / 042 010 / 1:0	DO		1507288 () MSND 0030 LMSN 0075
OSGOODE TOWNSHIP CON 05(003)	18 455663 5013432[W]	1974/04 1517	05	FR 0054	018 / 039 010 / 1:30	DO		1513991 () GREY GRVL 0054
OSGOODE TOWNSHIP CON 05(003)	18 455561 5013272[W]	1958/05 1603	03 03	FR 0109	037 / 050 008 / 2:0	DO		1507292 () BLDR MSND GRVL 0070 LMSN 0109
OSGOODE TOWNSHIP CON 05(003)	18 455673 5013306[W]	1975/09 1517	06	FR 0056	028 / 035 005 / 1:0	DO		1515097 () PRDG 0020 BRWN SAND GRVL 0056 GREY LMSN 0059
OSGOODE TOWNSHIP CON 05(003)	18 456730 5013821[W]	1979/08 1517	06	FR 0035	012 / 022 018 / 1:20	DO		1517151 () BRWN HPAN 0016 BLCK GRVL 0017 GREY LMSN 0038
OSGOODE TOWNSHIP CON 05(003)	18 455643 5013392[W]	1987/04 3644	06 06	FR 0100 FR 0069	020 / 080 007 / 1:0	DO		1521690 (07101) GREY GRVL 0030 GREY HPAN GRVL 0061 GREY LMSN 0105

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
GLOUCESTER TOWNSHIP RF 05(029)	18 455141 5014612[W]	1949/07 3601	04 04	FR 0040	006 / / :0	ST DO		1502279 () GRVL 0006 LMSN 0044
GLOUCESTER TOWNSHIP RF 05(029)	18 455171 5014612[W]	1948/05 3725	04 04	FR 0064	003 / 018 007 / 0:30	DO		1502278 () HPAN BLDR 0015 LMSN STNS ROCK 0072
GLOUCESTER TOWNSHIP RF 05(029)	18 455141 5014712[W]	1965/03 3504	06 06	FR 0060	018 / 060 005 / 0:30	DO		1502282 () CLAY MSND STNS 0008 LMSN 0080
GLOUCESTER TOWNSHIP RF 05(029)	18 455341 5014862[W]	1972/10 1836	06	FR 0055	010 / 052 012 / 1:0	PS		1512096 () GRVL BLDR 0015 GREY LMSN 0060
GLOUCESTER TOWNSHIP RF 05(030)	18 455151 5014572[W]	1951/09 3601	04 04	FR 0044	004 / / 1:0	DO		1502286 () HPAN CLAY 0006 GRNT 0044
GLOUCESTER TOWNSHIP RF 05(030)	18 455216 5014417[W]	1950/03 3601	04 04	FR 0032	004 / 004 / 1:0	DO		1502285 () BLDR GRVL 0010 GRNT 0034
GLOUCESTER TOWNSHIP RF 05(030)	18 456871 5015167[W]	1959/09 3517	05 05	FR 0035 FR 0052	032 / 040 008 / 1:0	PS		1502289 () LOAM BLDR 0012 QRTZ 0056
GLOUCESTER TOWNSHIP RF 05(030)	18 456057 5014871[L]	1993/12 1558	06 08	UK 0164	052 / 075 020 / 1:0	DO		1527639 (138062) BRWN SAND GRVL BLDR 0015 GREY LMSN 0159 GREY SNDS 0170
GLOUCESTER TOWNSHIP RF 05(030)	18 456822 5015271[W]	2012/04 1119						7181178 (Z128526) A128088
GLOUCESTER TOWNSHIP RF 05(030)	18 455241 5014347[W]	1960/05 1301	04 04	FR 0098	040 / 045 002 / 1:0	DO		1502290 () CLAY 0012 LMSN 0102
GLOUCESTER TOWNSHIP RF 05(030)	18 455241 5014362[W]	1954/02 3113	04 04	FR 0043	016 / 064 001 / 0:30	DO		1502287 () RED GRVL SHLE STNS 0012 GREY LMSN 0072 WHIT ROCK 0115
GLOUCESTER TOWNSHIP RF 05(030)	18 455336 5014287[W]	1962/06 1517	04 04	FR 0050	009 / 020 015 / 1:0	DO		1502295 () LOAM STNS 0005 MSND STNS 0034 ROCK 0050
GLOUCESTER TOWNSHIP RF 05(030)	18 456111 5014717[W]	1963/06 1603	02 02	FR 0066	007 / 020 020 / 3:0	DO		1502297 () BLDR MSND LOAM 0008 GREY LMSN 0066
GLOUCESTER TOWNSHIP RF 05(030)	18 456631 5015017[W]	1964/08 1503	05	FR 0094	035 / 070 015 / 1:0	PS		1502300 () PRDR 0056 LMSN 0096
GLOUCESTER TOWNSHIP RF 05(030)	18 455980 5014685[W]	1975/09 3658	06 06	FR 0135 FR 0172 FR 0084	017 / 160 004 / 2:0	ST		1515005 () BRWN FILL BLDR PCKD 0008 GREY LMSN HARD 0128 GREY SNDS 0178
GLOUCESTER TOWNSHIP RF 05(030)	18 455181 5014507[W]	1959/07 1632	02 02	FR 0045	010 / 019 004 / 0:30	DO		1502288 () MSND BLDR 0019 GREY LMSN 0045
GLOUCESTER TOWNSHIP RF 05(030)	18 455201 5014507[W]	1961/10 1517	04 04	FR 0034	014 / 017 010 / 2:0	DO		1502294 () PRDG 0012 HPAN STNS 0025 GREY ROCK 0035

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
GLOUCESTER TOWNSHIP RF 05(030)	18 455471 5014342[W]	1967/04 1517	04	FR 0032	005 / 015 015 / 0:30	DO		1502301 () MSND 0005 MSND STNS 0020 GRVL MSND 0032
GLOUCESTER TOWNSHIP RF 05(030)	18 456171 5014752[W]	1970/07 3504	06	FR 0145	016 / 145 002 / 2:0	DO		1510760 () GRVL BLDR 0010 GRVL 0015 GREY LMSN 0155
GLOUCESTER TOWNSHIP RF 05(030)	18 456911 5015212[W]	1968/05 3002	06 06	FR 0046 FR 0086 FR 0102	036 / 042 050 / 4:0	DO		1509627 () BLCK MUCK 0001 BRWN CLAY BLDR FSND 0010 GREY LMSN 0038 GREY SNDS 0082 LMSN 0094 GREY SNDS 0105
GLOUCESTER TOWNSHIP RF 05(030)	18 455176 5014517[W]	1964/07 3504	06 06	FR 0084	025 / 065 005 / 1:0	DO		1502299 () LOAM 0012 LMSN 0084
GLOUCESTER TOWNSHIP RF 05(030)	18 455231 5014352[W]	1960/06 3601	04 04	FR 0120	024 / 060 003 / 1:0	PS		1502291 () CLAY LOAM 0020 LMSN 0120
GLOUCESTER TOWNSHIP RF 05(030)	18 456651 5015022[W]	1961/09 3002	04 04	FR 0040	018 / 025 007 / 1:0	DO		1502292 () BLDR HPAN 0016 GREY LMSN 0045
GLOUCESTER TOWNSHIP RF 05(030)	18 455521 5014362[W]	1971/06 1517	05	FR 0023	005 / 005 015 / :0	DO		1511302 () LOAM 0005 GRVL 0020 ROCK 0029
GLOUCESTER TOWNSHIP RF 05(030)	18 455966 5014627[W]	1963/02 1503	05 05	UK 0060 UK 0070 UK 0079	017 / 020 006 / 1:0	DO		1502296 () GRVL BLDR 0013 BLUE LMSN 0080
GLOUCESTER TOWNSHIP RF 05(030)	18 456131 5014727[W]	1963/10 3504	06 06	FR 0055	012 / 040 010 / 1:0	DO		1502298 () MSND BLDR 0009 LMSN 0055
GLOUCESTER TOWNSHIP RF 05(030)	18 455201 5014532[W]	1961/10 1517	04 04	FR 0033	005 / 012 015 / 3:0	DO		1502293 () LOAM MSND 0020 HPAN 0025 GRVL 0029 GREY ROCK 0033
GLOUCESTER TOWNSHIP RF 05(030)	18 456320 5014864[W]	1974/06 1504	06 06	FR 0175	015 / 100 030 / 2:0	DO		1514514 () BRWN HPAN 0010 GREY LMSN 0055 GREY SNDS 0138 WHIT SNDS 0195
GLOUCESTER TOWNSHIP 04(026)	18 454340 5015958[W]	2008/06 1558	06	UK 0023 UK 0214	078 / 122 018 / 6:0	DO		7112988 (Z77378) A065697 BRWN LOAM SHLE ROCK 0005 GREY LMSN MGRD 0140 BRWN LYRD GREY SNDS HARD 0223 WHIT
GLOUCESTER TOWNSHIP 04(027)	18 453809 5014961[W]	1984/10 5222	06 06	FR 0074 FR 0080 FR 0067	/ 065 012 / 2:0	DO		1520016 () BRWN FILL PCKD 0005 GREY SAND LYRD PCKD 0023 BRWN SAND LYRD LOOS 0043 BLCK SHLE SOFT MGRD 0067 GREY LMSN HARD MGRD 0074 UNKN 0080 BRWN SAND HARD 0085
GLOUCESTER TOWNSHIP 04(027)	18 452955 5014904[W]	2008/03 1119	00	0095 0112	010 / 027 020 / 1:0	DO		7104233 (Z78179) A072350 SAND GRVL 0042 GREY LMSN 0120
GLOUCESTER TOWNSHIP 04(028)	18 453957 5014562[W]	1990/06 3644	06 06	FR 0090	007 / 030 030 / 1:0	DO		1524825 (56323) GREY CLAY STNS 0010 GREY HPAN STNS 0044 GREY SNDS 0095

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
GLOUCESTER TOWNSHIP RF 04(027)	18 453804 5014961[L]	2003/06 6617		UK 0003	003 / 005 / :0	NU	20 5	1533852 (264667) MSND FSND SILT 0025
GLOUCESTER TOWNSHIP RF 04(027)	18 453804 5014961[L]	2003/06 6617		FR 0005	005 / 009 / :0	NU	20 5	1533848 (264663) GREY FSND CLAY SILT 0025
GLOUCESTER TOWNSHIP RF 04(027)	18 453804 5014961[L]	2003/06 6617		FR 0008	008 / 009 / :0	NU	20 5	1533851 (264666) MSND GRVL STNS 0005 BRWN MSND SLTY SAND 0025
GLOUCESTER TOWNSHIP RF 04(027)	18 454771 5015382[W]	1956/10 3601	04 04	FR 0048	008 / 008 003 / 1:0	DO		1502203 () CLAY 0006 LMSN 0048
GLOUCESTER TOWNSHIP RF 04(028)	18 454801 5015272[W]	1956/06 1505	05 05	FR 0155	008 / 042 013 / 1:0	CO		1502205 () BLDR CLAY MSND 0006 SNDS 0163
GLOUCESTER TOWNSHIP RF 04(028)	18 454871 5014909[W]	2009/07 7260				NU		7131193 (Z099971)
GLOUCESTER TOWNSHIP RF 04(029)	18 453271 5013542[W]	1966/02 1503	06	FR 0052	005 / 015 010 / 2:0	CO		1502207 () MSND FILL 0006 CLAY 0040 HPAN 0046 GRVL 0052
GLOUCESTER TOWNSHIP RF 04(029)	18 454230 5014121[W]	1979/08 1365	06	FR 0087 FR 0174	012 / 075 030 / 2:0	CO		1517165 () BRWN SAND BLDR 0038 GREY LMSN 0126 WHIT SNDS 0180
GLOUCESTER TOWNSHIP RF 04(029)	18 455001 5014802[W]	1956/08 3601	04 04	FR 0045	010 / 012 004 / 1:0	DO		1502206 () CLAY 0006 GREY LMSN 0045
GLOUCESTER TOWNSHIP RF 04(029)	18 453312 5013609[W]	1975/02 3504	06 06	FR 0095 UK 0104	006 / 035 007 / 1:30	CO		1514603 () SAND 0010 SAND CLAY 0038 GRVL BLDR 0047 LMSN 0104
GLOUCESTER TOWNSHIP RF 04(029)	18 453104 5013591[W]	2005/12 1558	06	0161	016 / 021 012 / 6:0	DO		1536160 (Z39229) A025657 BRWN SAND STNS FILL 0004 BRWN SAND DRY 0010 GREY SAND WBRG 0014 GREY CLAY PCKD 0033 GREY SAND PCKD 0048 GREY SNDS HARD 0173
GLOUCESTER TOWNSHIP RF 04(029)	18 455001 5014742[W]	1965/09 3601	05 05	FR 0046	008 / 010 004 / 1:0	DO		1502283 () CLAY LOAM 0008 LMSN 0046
GLOUCESTER TOWNSHIP RF 04(030)	18 455211 5014182[W]	1952/04 3718	04 04					1502210 () MSND BLDR 0022 GREY LMSN 0032
GLOUCESTER TOWNSHIP RF 04(030)	18 455171 5014222[W]	1963/09 1503	05 05	FR 0098 FR 0070	025 / 031 010 / 1:0	PS		1502211 () MSND GRVL BLDR 0033 BLUE LMSN 0100
GLOUCESTER TOWNSHIP RF 04(030)	18 453330 5013321[W]	1980/10 1558	06 06 06	FR 0063	/ 003 030 / 1:0	DO		1517522 () BRWN SAND FILL LOOS 0002 GREY CLAY SAND STNS 0020 GREY SAND BLDR PCKD 0044 BLCK CLAY MGRD SOFT 0063
GLOUCESTER TOWNSHIP RF 04(030)	18 455201 5014192[W]	1950/12 3725	06	FR 0025	005 / 025 004 / 0:30	PS		1502209 () LOAM BLDR 0015 GRVL 0025

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
GLOUCESTER TOWNSHIP RF 04(030)	18 455131 5014452[W]	1976/06 3644	06	FR 0085 FR 0142	020 / 100 010 / 1:0	CO		1515466 () GREY SAND GRVL 0024 GREY LMSN 0143
GLOUCESTER TOWNSHIP RF 04(030)	18 453348 5013406[W]	1976/01 1558	06 06	FR 0070	/ 001 050 / 1:0	DO		1515197 () BRWN SAND 0003 BRWN SAND LOOS 0035 BLCK GRVL 0038 BLCK LMSN HARD 0051 BLCK LMSN 0073
GLOUCESTER TOWNSHIP RF 04(030)	18 455141 5014342[W]	1949/01 3601	04 04	FR 0045 FR 0010	010 / 013 020 / 1:0	ST DO		1502208 () LOAM 0010 GRVL 0025 LMSN 0050
GLOUCESTER TOWNSHIP RF 04(030)	18 453431 5013142[W]	1970/11 1558	06	FR 0087	020 / 055 012 / 2:0	DO		1510978 () BRWN CLAY SILT 0019 GREY GRVL BLDR 0030 GREY CLAY STNS 0053 GREY LMSN 0087
GLOUCESTER TOWNSHIP RF 05(026)	18 454631 5015992[W]	1976/06 3504	06	FR 0100 FR 0080	008 / 100 002 / 1:0	NU		1515473 () LMSN FCRD 0005 GREY LMSN HARD 0090 LMSN SNDS 0100
GLOUCESTER TOWNSHIP RF 05(026)	18 455936 5016682[W]	1973/05 3504	06	FR 0110 FR 0125	051 / 120 030 / 0:30	IN		1513271 () FILL GRVL BLDR 0006 LMSN 0039 GRNT 0065 SNDS GRNT 0125
GLOUCESTER TOWNSHIP RF 05(026)	18 454581 5016032[W]	1954/11 3701	05 05	FR 0070 FR 0085	007 / 008 006 / 1:0	DO		1502263 () BLDR HPAN 0003 GRVL STNS 0006 MSND LMSN 0085
GLOUCESTER TOWNSHIP RF 05(026)	18 454841 5015932[W]	1970/08 3002	06	FR 0119 FR 0174 FR 0188 FR 0130 FR 0065	073 / 138 090 / 6:0	IN		1510880 () BRWN GRVL 0007 GREY LMSN 0095 GREY SNDS 0230
GLOUCESTER TOWNSHIP RF 05(026)	18 454761 5016172[W]	1960/10 3002	08	FR 0244 FR 0037 FR 0174 FR 0196 FR 0108	024 / 111 200 / 54:0	IN		1502264 () GREY LMSN SHLE 0092 BRWN SNDS 0201 GREY LMSN 0226 BRWN SNDS 0248 LMSN SNDS 0250
GLOUCESTER TOWNSHIP RF 05(026)	18 456211 5016920[W]	1975/04 1517	05 05	FR 0112	040 / 065 010 / 1:20	CO		1514733 () BRWN LOAM SAND 0002 BRWN SHLE 0010 GREY LMSN 0116
GLOUCESTER TOWNSHIP RF 05(026)	18 455841 5016772[W]	1969/09 3002	06 06	FR 0072 FR 0097	015 / 099 015 / 4:0	CO		1510195 () LOAM 0001 LMSN 0060 SNDS 0099
GLOUCESTER TOWNSHIP RF 05(026)	18 454831 5015962[W]	1976/06 3504	08	FR 0020 SA 0080 UK 0100 SA 0040	021 / 080 005 / 15:0	NU		1515472 () LMSN 0095 LMSN SNDS 0101
GLOUCESTER TOWNSHIP RF 05(026)	18 455391 5016532[W]	1973/09 1558	06	FR 0123 FR 0148	035 / 090 012 / 1:0	DO		1513567 () BLCK SAND STNS 0006 BLCK LMSN 0050 GREY LMSN 0055 BLCK LMSN 0080 WHIT SNDS 0095 BLCK LMSN 0102 WHIT SNDS 0148