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Phase 1 and 2 Environmental Site Assessment

469 Rice Road
City of Welland, Ontario

Prepared for:

Shout Corporation
45 Reinhart Pl
Petersburg, Ontario
N0B 2H0

File: 17479
January, 2018

EXECUTIVE SUMMARY

Landtek Limited is pleased to submit the Phase 1 and 2 Environmental Site Assessment (ESA) report for 469 Rice Road in the City of Welland, Ontario (referred to as the 'Site'). The work was initiated following authorization to proceed from Mr. Mike Schout of Schout Developments.

Phase 1 ESA

The primary objectives of the Phase 1 ESA were: (1) review historical land use/activities on the subject property and surrounding land to assess the potential for environmental liabilities; (2) carry out a site inspection of the subject property to document existing conditions and identify areas of potential environmental concern and (3) assess the overall environmental status of the subject site.

The Phase1 ESA was completed in general accordance with the requirements described in CSA Standard Z768-01, as well as the document "Guideline: Professional Engineers Providing Services in Environmental Site Assessment, Remediation, and Management (Association of Professional Engineers of Ontario, 1996).

Phase 2 ESA

The primary purpose of this Phase 2 ESA was to evaluate the existing environmental conditions at the site with respect to the subsurface soils and groundwater identified in the Phase 1 ESA.

The Phase 2 ESA was completed in general accordance with CSA Standard Z769-00 as well in general accordance with O. Reg. 153/04. The soil and groundwater quality standards and regulations came into effect in 2011 (Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, April 15, 2011). The Phase 2 ESA covers physical sampling of soils and groundwater and chemical analyses where potential risks and/or environmental liability are evident from the Phase 1 ESA.

The following summary outlines the findings of the Phase 1 ESA:

- The Site is irregular in shape and is utilized as municipal parkland with one (1) building or structure present (a storage building). It is located approximately 100 m northwest of the intersection of Rice Road and Quaker Road (Highway 81), in Welland, Ontario. The Site is bound by Rice Road to the east (followed by residential dwellings); and residential dwellings to the north, west and south.

- It is recommended that a limited Phase Two ESA be conducted to investigate the potential surficial soil impacts related to residual pesticides due to the historical agricultural use on the property. The limited Phase Two ESA should also investigate the potential soil impacts from soil of unknown quality within the berms or fill areas on the Site. The limited Phase Two ESA should include sampling for organochlorine pesticides metals and inorganic parameters, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene and xylene (BTEX), and volatile organic compound (VOC) parameters.

The following summary outlines the findings of the Phase Two ESA:

A total of nine boreholes (boreholes BH1 to BH9) were drilled on December 15, 2017 by a specialist contractor using a drill equipped with continuous flight augers. The boreholes and were advanced under the full time supervision of a representative of Landtek Limited.

Soil results were compared to MOECC Table 2 Standards for residential/parkland/institutional (RPI) land use in fine textured soils in a non-potable groundwater condition in accordance with Ontario Regulation 153/04.

- Soil samples analysed for PHC Fraction F1-F4 parameter concentrations tested below the maximum allowable MOECC Table 2 RPI standards.

- Soil samples analysed for VOC parameter concentrations tested below the maximum allowable MOECC Table 2 RPI standards.

- Soil samples analysed for OC Pesticide parameter concentrations tested below the maximum allowable MOECC Table 2 RPI.

- Soil samples analysed for metals and inorganic parameter concentrations tested below the maximum allowable MOECC Table 2 RPI.

Conclusion and Recommendations

Based on the review of the historical and regulatory information, and observations made during the site observations, the conclusions and recommendations of the Phase 2 ESA are as follows:

1. All OC pesticide, PHC F1-F4 fractions, VOCs, metals and inorganic parameter concentrations in the soil samples obtained as part of this Phase Two ESA were below the MOE Table 3 R/P/I standards for medium to fine textured soil.

2. It would be prudent to include a contingency allowance or disposal provision in the event that former building foundations, building material remnants or wastes are encountered during demolition/excavation operations. This can be incorporated as part of a waste management plan/budget, if required. The waste management plan should include provisions for disposal of potential hazardous or designated substances that may require disposal during demolition operations.

Based on the available information obtained as part of this Phase 1 and 2 ESA, there are no obvious issues or evidence of major environmental concern/impact on the Site. It is the opinion of Landtek Limited that there is no need to undertake additional environmental evaluation of the site at this time.

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1.0 INTRODUCTION

Landtek Limited is pleased to submit the Phase 1 and 2 Environmental Site Assessment (ESA) report for 469 Rice Road in the City of Welland, Ontario (referred to as the 'Site'). The work was initiated following authorization to proceed from Mr. Mike Schout of Schout Developments.

Phase 1 ESA

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The Phase1 ESA was completed in general accordance with the requirements described in CSA Standard Z768-01, as well as the document "Guideline: Professional Engineers Providing Services in Environmental Site Assessment, Remediation, and Management (Association of Professional Engineers of Ontario, 1996).

Phase 2 ESA

The primary purpose of this Phase 2 ESA was to evaluate the existing environmental conditions at the site with respect to the subsurface soils identified in the Phase 1 ESA.

The Phase 2 ESA was completed in general accordance with CSA Standard Z769-00 as well in general accordance with O. Reg. 153/04. The soil and groundwater quality standards and regulations came into effect in 2011 (Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, April 15, 2011). The Phase 2 ESA covers physical sampling of soils and groundwater and chemical analyses where potential risks and/or environmental liability are evident from the Phase 1 ESA.

These assessments were completed with the understanding that a Record of Site Condition (RSC) in not required for the Site.

2.0 SITE DESCRIPTION

The Site is irregular in shape and is utilized as municipal parkland with one (1) building or structure present (a storage building). The Site is located approximately 100 m northwest of the intersection of Rice Road and Quaker Road (Highway 81), in Welland, Ontario. The Site is bound by Rice Road to the east (followed by residential dwellings); and residential dwellings to the north, west and south.

The Site is approximately 12.8 hectares (31.62 acres). **Figure 1** shows the general location of the Site.

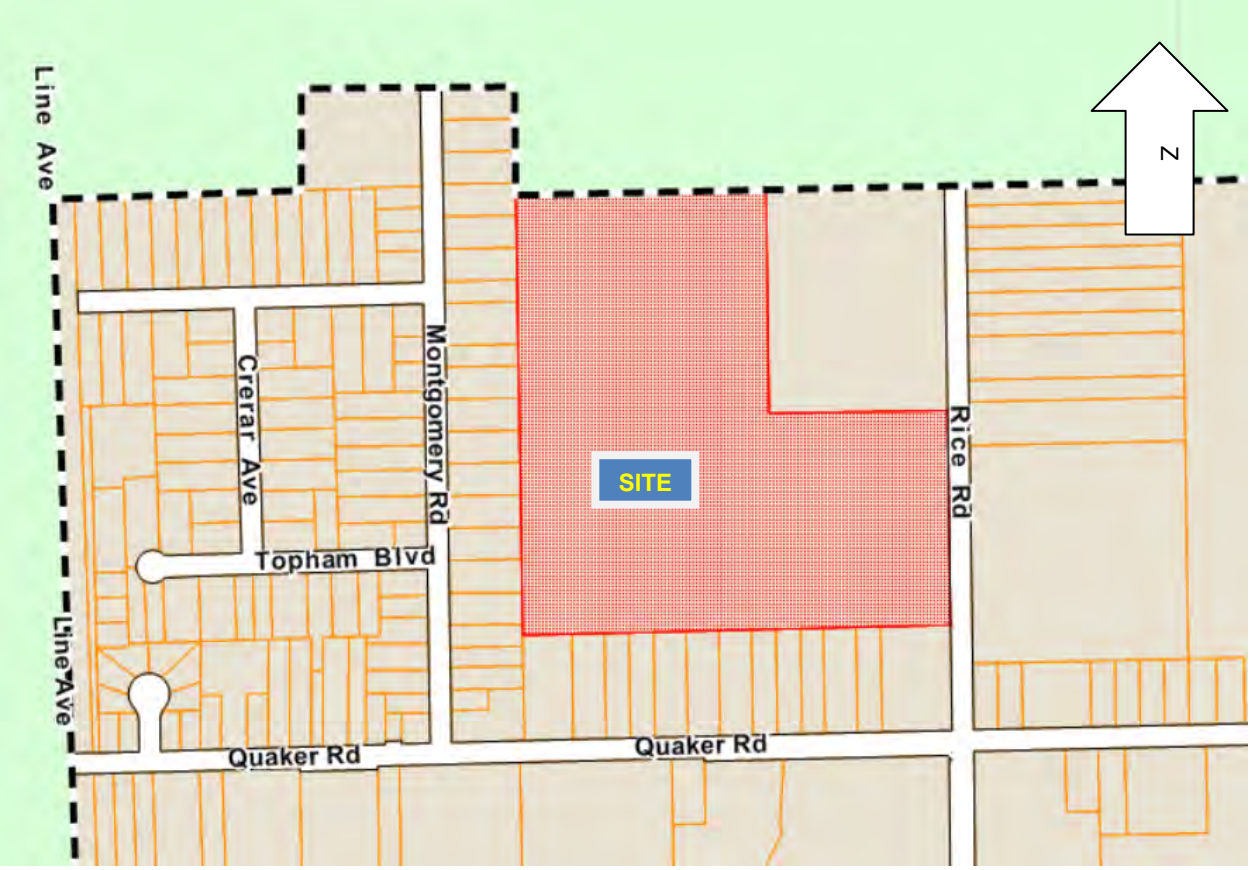


FIGURE 1
Location of Subject Site

3.0 RECORDS REVIEW

3.1 Historical Maps

An historical map of the Township of Thorold/Welland dated 1875 was reviewed and the relevant portion is presented in **Appendix D**. Information from this map indicates that the Site was owned by S. Daugherty and appears to be used as agricultural/estate land.

3.2 Aerial Photographs

Aerial photographs of the site were obtained from EcoLog ERIS and the City of Hamilton. The photographs are presented in **Appendix E** and the findings are summarized as follows:

Table 1: Aerial Photograph Descriptions

Year	Study Site	Surrounding Lands
1934	The Site is utilized as agricultural lands with a small dwelling and/or agricultural building present at the east-central portion of the Site. A driveway is present extending west from Rice Road to the structure.	Rice Road is present to the immediate east of the Site. Quaker road is present to you south of the Site. The surrounding lands appear to be primarily agricultural.
1960	Consistent with above.	The surrounding lands appear to be primarily agricultural with some rural/residential dwellings along Quaker Road and Rice Road.
1968	Consistent with above.	Increased residential development along Quaker Road and Rice Road and to the west of the Site.
1976	Consistent with above, with the exception of that a large agricultural barn type structure is now present at the east-central portion of the Site	Consistent with above.
2002	The agricultural structures previously mentioned are no longer present on the Site. The Site is now being utilized as municipal parklands. A large recreational facility is now present at the center of the Site and manicured soccer fields occupy the remainder of the Site.	Consistent with above.
2010	Same as above.	Same as above.
2016	Same as above.	Same as above.

3.3 Fire Insurance Plans and Underwriters' Multi-Risk Reports

Underwriters' reports and fire insurance plans (FIP) were requested from the ERIS and Opta Information Intelligence. No Fire Insurance Plans or underwriter reports were available for the Site or surrounding area.

3.4 Site Occupancy Records

Site occupancy records from Vernon City Directory data, supplemented with information from FIPs, Eco Log and interviews are presented as **Table 3**

Table 3: Occupancy Search for Site

Address	Site Occupant and Dates
469 Rice Road	2012 to 1990 - Welland Soccer Club, Double dome Indoor Soccer Club, Welland Youth Soccer and Indoor Golf of Niagara. 1985 1960 – Residential (1 Tenant)

No Potentially Contaminating Activities (PCAs) associated with the Site or adjacent properties were identified from the review of the occupancy search.

3.5 Regulatory Information

Environmental Risk Information Service

Appropriate regulatory agency information was reviewed through ERIS Historical Searches from previous report and searches completed by Landtek for adjacent properties to obtain information regarding but not limited to environmental permits, past or pending environmental control orders or complaints, outstanding environmental regulatory non-compliance issues, waste disposal or landfill sites, PCB storage sites, coal gasification plant sites, underground storage tanks, etc. within a radius of 250 m of the site.

There are multiple mappable records for the subject site and adjacent properties of concern in the surrounding 250 m radius. Records of concern are summarized in **Table 4**.

Table 4: ERIS Report Summary for Site and Adjacent Properties

Company Name / Address	Distance	Activity
Site		
469 Rice Road	Site	No records for Site
Adjacent Properties		
528 Quaker Road	137 m South/Southwest	TSSA historic incidents – reported a near miss to a gaseous fuel pipeline in 2007. No action was required.
Lot 235	184 m South/Southeast	Identified in the Ontario Water Well Information System as containing one drilled supply well Well ID(6601899) which was installed in 1950.

No Potentially Contaminating Activities (PCAs) were associated with the Site or adjacent properties identified from the review of the ERIS report.

Ministry of the Environment and Climate Change (MOE)

A freedom of information request was sent to the MOE to determine if there are any environmentally related issues or information on the subject property in their records. In detail, Landtek Limited requested information concerning previous spills, outstanding notices, orders, special permits, approvals or licenses, and violations.

At the time of this report the reply from the MOE had not been received. Upon receipt of the reply, any items of potential concern or environmental liabilities will be forwarded and should be appended to this report.

3.6 Geological Data and Groundwater

Based on published geological information and previous experience for the area, native subsurface soil conditions in the area of the site consist of glaciolacustrine clay and silt deposits. The bedrock in the area is identified as brown or tan dolostone of the Guelph Formation.

The borehole information is generally consistent with the geological data, and the predominant native soils comprise silt and clay deposits.

3.7 Previous Environmental Reports and Additional Information

No previous environmental reports were available for review during the preparation of this report.

4.0 OBSERVED SITE CONDITIONS

Landtek Limited conducted a visual assessment of the site on November 23, 2017. The following sections summarize the observed site conditions. Photographs of typical site conditions are shown in **Appendix F**.

4.1 Site Uses and Structures

The Site is located in a predominately rural/residential area of Welland, Ontario. At the time of Landtek's site inspection the site was operating as a municipal park which included multiple soccer fields and small slab-on-grade building used for storage of landscaping supplies and machinery. The Site previously contained an indoor soccer facility which had been demolished in 2017.

A summary of the physical description of the Site, are provided below:

4.2 Building Heating and Cooling Systems

No building heating or cooling systems were present at the time of the Site visit.

4.3 Site Topography and Drainage

The overall topography of the site varies significantly throughout the site. Evidence suggests that control of surface drainage is handled by overland flow to swales along Rice Road. A culvert is present running through the central portion of the site from west to east.

4.4 Storage Tanks

There was no evidence of Underground Storage Tanks (UST) or Above Ground Storage Tanks (ASTs). There was no observed evidence of filler pipes, breather pipes or ground depressions that may indicate the presence of any UST's.

4.5 Hazardous Materials

Appendix D presents general information related to common hazardous or designated substances that can be found in buildings/building materials. The following sections summarize substances that are more likely to be found in construction materials and building equipment.

Asbestos Containing Materials (ACM)

No ACMs were observed at the time of the site inspection.

Lead Containing Materials (LCM)

No LCMs were observed at the time of the site inspection.

Ozone Depleting Substances (ODS)

No ODS were observed at the time of the site inspection.

Polychlorinated Biphenyls (PCB)

No ACMs were observed at the time of the site inspection.

Urea Formaldehyde Foam Insulation (UFFI)

No ACMs were observed at the time of the site inspection.

4.6 Ground Staining

No ground staining was observed at the time of the site inspection.

4.7 Air Emissions

No significant sources of air emissions were observed to be generated from the property at the time of the Site inspection.

4.8 Noise and Odours

No significant sources of noise and odours were observed to be generated from the facility at the time of the Site inspection.

4.9 Stressed Vegetation

There was no evidence of vegetation stress at the time of the site visit.

4.10 Presence of Fill

The overall topography of the site varies significantly throughout the site. Berms and elevated soccer fields are present throughout the site. It is expected that significant quantities of fill of unknown quality are present on the Site.

4.11 Potable Water Supply

The site is currently serviced with municipal water and no wells were identified on the site. It is understood that the surrounding residential lands to the north, west and south are serviced with municipal water. Agricultural properties to the east are understood to use groundwater wells as a potable water source.

4.12 Abandoned and Existing Wells

There was no evidence of any existing or abandoned wells.

4.13 Site Services

The site and nearby properties utilities include water, electricity, telecommunications, natural gas, and cable.

4.14 Pits and Lagoons

No pits or lagoons were observed during the visual site assessment

4.15 Roads, Easements, and Parking Areas

A gravel road is present entering the west side of the site from Rice Road to a gravel parking lot situated on the southeast portion of the property. No other roads, easements, or parking areas were observed on the property at the time of the site inspection.

4.16 Adjacent Property Uses

The following property uses were observed within the vicinity of the site:

Direction	Adjacent Land Use
North	Residential single family detached housing.
East	Rice Road beyond that, rural/agricultural
South	Residential single family detached housing.
West	Residential single family detached housing.

5.0 INTERVIEWS

Landtek Limited conducted an interview with Mr. Dan Degazio, Director of Economic Development for the City of Welland on December 4, 2017. The following information has been compiled from the interview responses:

- The City of Welland acquired the property circa 2002 from the Welland Soccer Club.
- No previous environmental site assessments have been completed at the Site.
- No issues of environmental concern
- The Site is serviced by municipal water and sanitary, natural gas and hydro.
- No known USTs or ASTs on the Site.
- No USTs or ASTs have been removed from the Site.
- Berms on Site consist of regraded soil from the agricultural fields.
- Storage building used for storage of lawnmowers, soccer nets and supplies.

6.0e PHASE 2 ENVIRONMENTAL SITE ASSESSMENT

6.1 Methodology

The objectives of the Phase 2 ESA were: (1) review available background environmental information regarding the site; (2) undertake sampling of subsurface soils and groundwater by means of boreholes and monitoring wells; (3) carry out chemical testing of soil and groundwater to assist in the assessment of existing conditions; and, (4) evaluate and report on the findings to present the existing environmental conditions of the site.

Borehole locations were marked out in the field prior to completing intrusive investigative fieldwork. Underground utilities in the test areas were located by public and private utility locating services.

A total of nine boreholes (boreholes BH1 to BH9) were drilled on December 15, 2017 by a specialist contractor using a drill equipped with continuous flight augers. The boreholes and monitoring wells were advanced under the full time supervision of a representative of Landtek Limited.

A monitoring well was installed in borehole BH3, to a depth of approximately 4.6 m below existing ground surface to monitor groundwater elevations. The borehole log in **Appendix H** presents the monitoring well installation details. A water level reading was completed on January 19, 2018.

Borehole samples were obtained at regular intervals and the sample equipment was washed with phosphate free detergent and rinsed between samples to avoid cross contamination. Soil conditions were logged and soil samples were taken following protocols outlined in CSA Z769-00 as well as the MOECC's 'Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario', dated May, 1996. Screening for Total Combustible Vapours (TCV) and VOCs was performed on all samples using a PID (RKI Eagle 2 Model).

The soil were transported to Landtek Limited's laboratory in a cooled insulated container. Soil samples were visually examined to determine the textural classification, and samples were selected for chemical analyses based on visual and olfactory indicators as well as TCV and VOC readings.

Soil samples samples (were submitted for chemical analyses to ALS Environmental Laboratories (Canadian Accredited Environmental Laboratory). Soil sample characterization testing included petroleum hydrocarbon compounds (PHC), volatile organic compounds (VOCs), organochlorine pesticides (OC pesticides), metals, and inorganic parameters.

6.2 Subsurface Conditions

The soil conditions are presented in the following sections. Fill was encountered in all boreholes at the subject site. The borehole and test pit logs are presented in **Appendix H** and a site plan showing the borehole locations is presented in **Figure 2**.

The borehole information is generally consistent with the geological data, and the predominant native soils comprise silt and clay deposits. No bedrock was encountered during this investigation. The detailed borehole logs are presented in **Appendix G** and the ground conditions encountered by the boreholes are discussed further in the following sections.

Organic Soil

Topsoil was encountered at the ground surface in boreholes BH1, BH3 and BH7 and is approximately 150 mm thick.

Fill (Granular)

Pavement granular material was encountered in boreholes BH6 and BH8 at the ground surface, and consisted of approximately 300 mm to 450 mm of sand and gravel.

Fill

Fill material comprised predominantly of silt and clay was encountered at the ground surface and underlying the topsoil in all boreholes, and extends to a depth of between 1.5 m and 3.4 m (boreholes BH1 and BH7) below existing ground level. The fill material contains varying proportions of gravel, asphalt, and organics. The fill is brown and occasionally black.

SPT 'N' values ranging from 4 to 14 were reported, indicating the fill material to be moderately to well compacted. Moisture contents in the fill material range between 8 % and 37 %.

Silt to Clayey Silt

Native silt to clayey silt was encountered in all the boreholes at a depth of between 1.5 m (boreholes BH4, BH5, BH6 and BH7) and 3.4 m (boreholes BH1 and BH7), and extends to the terminus of the boreholes at a maximum depth of 6.6 m below existing ground level. The silt to clayey silt is brown and occasionally grey, and contains traces of fine sand and rust staining.

SPT 'N' values ranging from 3 to 67 were reported, indicating the silt to clayey silt to be of a very loose to very dense, but generally compact condition. Moisture contents in the silt to clayey silt range between 17 % and 29 %.

Bedrock

Bedrock was not encountered during this investigation.

Groundwater

Groundwater seepage was encountered during this investigation in all boreholes, except boreholes BH5 and BH6, at a depth of between 2.1 m and 4.0 m below existing ground level. On completion of drilling, a monitoring well was installed in borehole BH3 and a water level reading in the monitoring well was completed on January 19, 2018.

It should be noted that these groundwater levels are not considered to reflect the long term stabilized water table. Groundwater conditions are expected to vary according to the time of the year and seasonal precipitation levels. During wet weather, an increase in water seepage is to be expected in the shallow fill deposits.

The groundwater conditions are expected to vary according to the time of the year and seasonal changes in precipitation. **Table 6.1** presents the detailed monitoring well data including the static water level readings.

Table 6.1: Summary of Water Level Readings

Monitoring Well	Measured Well Depth (m)	Reading Date(s)	Depth to Water Level (m)
BH/MW3	4.6	January 19, 2017	2.2

Notes:
A. Water level measurements above are in metres below existing ground surface.

6.2.1 Sampling Methodologies

Soil Sampling

Soil sample collection was taken according to field/laboratory screening results where there was visual, olfactory, or vapour detection of potential impact. Soil conditions were logged and soil samples were taken following protocols outlined in accordance with the MOECC Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, and generally accepted industry methods.

Samples obtained for analyses of metals, inorganics, OC pesticides, and petroleum hydrocarbons F2-F4 (PHC), were performed by removing a portion of the soil sample and placing it into a sealable container (ie. glass jar). Samples obtained for PHC Fraction 1, benzene, toluene, ethylbenzene, xylenes (BTEX), and VOCs were sampled using a plastic syringe sampling device that allows the measurement of a precise amount of soil sample from the undisturbed soil to be placed and field preserved in a methanol vial. All samples were placed and stored in a cooler with an ice pack for transportation to the analytical laboratory.

Field Screening Measurements

Field screening tests included the following:

- Determining the textural classification of the sample and, where feasible, its geologic description based on visual and manual inspection.
- Visual observation for evidence of chemical staining or free product.
- Determination of olfactory evidence of impact.
- Measurement of the headspace Total Combustible Vapour (TCV) and VOC concentrations.

During the split spoon sampling, headspace soil samples were screened for undifferentiated VOC vapour readings using a PID (RKI Eagle 2 model). Prior to screening, the PID was inspected and calibrated according to the manufacturer's recommendations.

6.3 Site Classification and Selection of Criteria

6.3.1 Site Geology

The subsurface conditions encountered in the boreholes generally consist of fill overlying sand. Therefore, the site is considered to be classified as having coarse textured soil as defined by Ontario Regulation 153/04. As per Ontario Regulation 153/04 and in consideration of the subsurface soil conditions, the site is not considered to be a ‘shallow soil property’ due to the fact that bedrock was not encountered within 2.0 m of the existing ground surface.

6.3.2 Site Hydrology

Locally and specific to the area, the horizontal groundwater flow has been inferred to be in a northeasterly direction. Nearby servicing trenches and underground utilities may have an impact on the local pattern of groundwater flow.

6.3.3 Site Classification / Selected Restoration Standards

The site is proposed for continued commercial use. Classification of the site has been based on the following site characteristics in accordance with Ontario Regulation 153/04:

- Site investigation has confirmed that more than 2 m of overburden is present above the bedrock; therefore, the site is not considered a shallow soil condition.

- The site is not considered an environmentally sensitive site since: a) the site is not or does not include part of an area of natural significance; b) the pH of the soils is within an acceptable range (between 5 and 9); and c) the property does not include or is not adjacent to a body of water and is not located within 30 m of any bodies of water.

- Potable groundwater is in use as a drinking water source to the east of the site; therefore the groundwater is considered to be the source of drinking water.

- The land is not used for agricultural or 'other use' as defined by the applicable regulations.

- Fine grained soil consisting of silty clay till is the predominant subsurface material at the site.

- The current zoning is parkland land use and proposed use of the site is intended for residential uses.

Based on the above information, the analytical results for soil and ground water samples have been compared to Table 2 of the MOECC *Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 15, 2011* for Residential/Parkland/Institutional (RPI) for fine textured soils.

6.4 Results of Chemical Testing

Soil samples were submitted for chemical analyses to ALS Laboratories (a Canadian Accredited Environmental Laboratory). Soil sample characterization testing included petroleum hydrocarbon compounds including benzene, toluene, ethylbenzene, and xylene (BTEX) parameters, OC Pesticides, volatile organic compounds (VOCs), metals, and inorganic parameters. The schedule of chemical testing and the summary of test results for soils are shown in **Table 6.2**. Samples were selected based on location and depth of potential areas of concern as well as olfactory or vapour reading indicators, where possible.

Table 6.2: Schedule of Chemical Analyses and Summary of Test Results for Soils

Sample/Depth (mbgs)	Analyses	Exceedances (ppm)		
		Parameter	Sample Results	Table 2 RPI Standard
BH1 Surface (0 to 0.6)	-OC Pesticides	--	**No exceedances**	--
BH1 SS2 (1.5 to 2.1)	-Metal & Inorganics	--	**No exceedances**	--
BH5 SS1 (0.8 to 1.4)	-Metal & Inorganics -VOCs -PHCs F1-F4	--	**No exceedances**	--
BH6 SS1 (0.8 to 1.4)	- VOCs -PHCs F1-F4	--	**No exceedances**	--
BH7 Surface (0 to 0.6)	-OC Pesticides	--	**No exceedances**	--
BH8 SS1 (0.8 to 1.4)	-Metal & Inorganics	--	**No exceedances**	--
BH8 SS2 (1.5 to 2.1)	-VOCs -PHCs F1-F4	--	**No exceedances**	--
BH9 Surface (0 to 0.6)	-OC Pesticides	--	**No exceedances**	--

Soil Sample Results – compared against Table 2 RPI land coarse texture soil)

Certificates of analysis for the chemical testing including laboratory quality control data are presented in **Appendix I**.

Soil results were compared to MOECC Table 2 Standards for residential/parkland/institutional (RPI) land use in fine textured soils in a non-potable groundwater condition in accordance with Ontario Regulation 153/04.

- Soil samples analysed for PHC Fraction F1-F4 parameter concentrations tested below the maximum allowable MOECC Table 2 RPI standards.

- Soil samples analysed for VOC parameter concentrations tested below the maximum allowable MOECC Table 2 RPI standards.

- Soil samples analysed for OC Pesticide parameter concentrations tested below the maximum allowable MOECC Table 2 RPI.

- Soil samples analysed for metals and inorganic parameter concentrations tested below the maximum allowable MOECC Table 2 RPI.

7.0 SUMMARY OF FINDINGS

The following summary outlines the findings of the Phase 1 ESA:

- The Site is irregular in shape and is utilized as municipal parkland with one (1) building or structure present (a storage building). It is located approximately 100 m northwest of the intersection of Rice Road and Quaker Road (Highway 81), in Welland, Ontario. The Site is bound by Rice Road to the east (followed by residential dwellings); and residential dwellings to the north, west and south.

- It is recommended that a limited Phase Two ESA be conducted to investigate the potential surficial soil impacts related to residual pesticides due to the historical agricultural use on the property. The limited Phase Two ESA should also investigate the potential soil impacts from soil of unknown quality within the berms or fill areas on the Site. The limited Phase Two ESA should include sampling for organochlorine pesticides metals and inorganic parameters, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene and xylene (BTEX), and volatile organic compound (VOC) parameters.

The following summary outlines the findings of the Phase Two ESA:

A total of nine boreholes (boreholes BH1 to BH9) were drilled on December 15, 2017 by a specialist contractor using a drill equipped with continuous flight augers. The boreholes and were advanced under the full time supervision of a representative of Landtek Limited.

Soil results were compared to MOECC Table 2 Standards for residential/parkland/institutional (RPI) land use in fine textured soils in a non-potable groundwater condition in accordance with Ontario Regulation 153/04.

- Soil samples analysed for PHC Fraction F1-F4 parameter concentrations tested below the maximum allowable MOECC Table 2 RPI standards.

- Soil samples analysed for VOC parameter concentrations tested below the maximum allowable MOECC Table 2 RPI standards.

- Soil samples analysed for OC Pesticide parameter concentrations tested below the maximum allowable MOECC Table 2 RPI.

- Soil samples analysed for metals and inorganic parameter concentrations tested below the maximum allowable MOECC Table 2 RPI.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the review of the historical and regulatory information, and observations made during the site observations, the conclusions and recommendations of the Phase 2 ESA are as follows:

1. All OC pesticide, PHC F1-F4 fractions, VOCs, metals and inorganic parameter concentrations in the soil samples obtained as part of this Phase Two ESA were below the MOE Table 3 R/P/I standards for medium to fine textured soil.

2. It would be prudent to include a contingency allowance or disposal provision in the event that former building foundations, building material remnants or wastes are encountered during demolition/excavation operations. This can be incorporated as part of a waste management plan/budget, if required. The waste management plan should include provisions for disposal of potential hazardous or designated substances that may require disposal during demolition operations.

Based on the available information obtained as part of this Phase 1 and 2 ESA, there are no obvious issues or evidence of major environmental concern/impact on the Site. It is the opinion of Landtek Limited that there is no need to undertake additional environmental evaluation of the site at this time.

9.0 QUALIFICATIONS OF ASSESSOR(S) AND CLOSURE

Qualifications

Investigative assessment work was coordinated by Mr. Kevin Roberts, Dipl. Env.Tech, who has over 10 years of related environmental research and remediation experience.

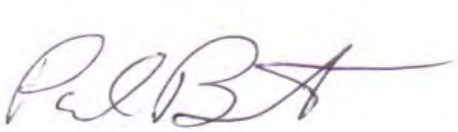
Mr. Paul Blunt, P.Eng. has conducted and supervised Environmental Site Assessments for more than 25 years. Mr. Blunt obtained a B.Sc. in Chemical Engineering from University of Windsor in 1987 and is a licensed Professional Engineer in the Province of Ontario. Mr. Blunt has conducted and supervised Phase 1 Environmental Site Assessments over 1500 environmental site assessments on a variety of agricultural, residential, industrial, commercial and industrial properties.

Closure

We trust this report is satisfactory for you purposes. If you have any questions regarding our submission, please do not hesitate to contact this office.

Yours truly,

LANDTEK LIMITED



Kevin Roberts, Dipl. Env.Tech.

Paul Blunt P.Eng., QP_{ESA}

APPENDIX A

REFERENCES AND REGULATORY DOCUMENTS

APPENDIX A
References and Regulatory Documents

Regulatory Documents

When applicable, situations were noted in this report where the Site, or operations conducted on the Site, do not appear to comply with the applicable regulations.

The following is a list of environmental legislation that may have been referenced for the purposes of this assessment:

- Environmental Assessment Act, R.S.O. 1990, c. E18;
- Environmental Bill of Rights, 1993, S.O. 1993, c. 28;
- Environmental Protection Act, R.S.O. 1990, c. E9;
- Fish and Wildlife Protection Act, 1997, S.O. 1997, c. 41;
- Occupational Health and Safety Act, R.S.O. 1990, c. O1;
- Ontario Water Resources Act, R.S.O. 1990, c. O40;
- Pesticides Act, R.S.O. 1990, c. P11;
- Safe Drinking Water Act, 2002, S.O. 2002, c. 32;
- Technical Standards and Safety Act, 2000, S.O. 2000, c. 16; and
- Waste Management Act, 1992, S.O. 1992, c.1.

APPENDIX B

LIMITATION OF THE REPORT

APPENDIX B
Limitations of the Report

This report was prepared for the sole use of the Client, their legal counsel, and Client designated and authorized financial and mortgage institutions. It is intended to provide an evaluation of the current environmental conditions at the subject site. Any use of this report, or decisions made based on it, by an unauthorized party, is the responsibility of the unauthorized party. Landtek Limited accepts no responsibility for damages of any type suffered by the unauthorized party as a result of actions or decisions made based on this report.

The conclusions and recommendations given in this report are based on information obtained from various sources noted and a visual examination of the site. It is based on the conditions of the subject property at the time of the field investigation supplemented by a review of historical information to assess environmental conditions at the site reported. Landtek Limited assumes that information provided by others is factual and accurate, and accepts no responsibility for any deficiency, misstatement, of inaccuracy in this report from information provided by others.

Sampling and analysis of soil, groundwater, or other materials was carried out in specific locations as part of the scope of work. The findings of the assessment cannot be extended to reflect portions of the site that were unavailable for direct observation by Landtek Limited.

This assessment should not be considered a comprehensive audit that eliminates all risks of encountering environmental problems. There is no warranty expressed or implied by this report concerning the status of the study site.

APPENDIX C

GENERAL ENVIRONMENTAL INFORMATION

APPENDIX C
General Environmental Information

Appendix C presents general information related to some of the more common hazardous or designated substances that can be found in buildings/building materials. The intent of this information is to present some of the various regulations (see section 11.0) related to the substances addressed and refer to details related to their handling, management, and disposal.

Asbestos

Asbestos is a common fire retardant and insulating material. Asbestos has been used widely in the past; however, the era from the early 1950s to the 1970s (approximately 1973) was the largest contributor of asbestos as an insulating material. Normally, asbestos does not create a hazard provided the material is laying dormant. However, in situations such as demolition activities or where the material has been deteriorating and becomes friable, asbestos fibres may become airborne, inhalation of which may cause a number of health complications. The use of asbestos in construction materials, such as fire retardant and insulating materials, has been eliminated from commercial use since the late 1970s. Ontario Regulations 278/05 Occupational Health and Safety Act, deal with asbestos and asbestos removal.

Occurrence

Asbestos can be found in a variety of construction materials. The following is a list of the more common materials that may contain asbestos: acoustic and stucco ceiling materials, automobile brake pads, bulk insulating material in walls and roofs, cementitious board (transite), gaskets for heating equipment, insulation on mechanical equipment (e.g., piping, pipe elbows, boilers), pipe and pipe elbow insulation, roofing felts, some drywall and mortar joint compounds, suspended ceiling tile, vinyl floor tiles, and window caulking.

Designated Substances

The Occupational Health and Safety Act identifies 11 designated substances and has regulations pertaining to each.

Occurrence

The following outlines the designated substances identified in the Occupational Health and Safety Act and some of the common uses/occurrences associated with them.

- acrylonitrile – plastics
- arsenic – paints, printing fluids, herbicides and insecticides
- asbestos – insulating and heat resistant material (refer to section on asbestos for details)
- benzene – gasoline and other petroleum fuels
- coke oven emissions – applicable in areas where foundry operations may be an issue
- ethylene oxide – plastics, anti-freeze, agricultural fungicide
- isocyanates – paint, plastics, foam insulation, etc.
- lead – metallic lead may be present in pipes, in the soldering joints of the plumbing system and in paint
- mercury – may be present in hear control equipment (thermostats) and electrical equipment (mercury switches, mercury vapour lamps)
- silica – all cementitious material could contain silica; analysis required to establish type
- vinyl chloride – paint, plastics

Chlorofluorocarbons – CFC's

Freon, which is used in air conditioning and refrigerating units, can usually be found as one of the following types: Freon R-12 (ODP level 1.0), Freon R-22 (ODP level 0.05), and Freon R-502 (ODP level 0.33). All types listed above contain CFC's, which are substances known to contribute to the Earth's ozone layer depletion; however, Freon R-22 contains the lowest concentration of CBC as indicated by the ozone-depleting potential (ODP) level.

Halon 1211 (ODP level 3.0) and Halon 1301 (ODP level 10.0) are other CFC type compounds, commonly used in fire extinguishers at facilities where contamination from normal fire extinguishing chemicals is undesirable.

Lead Based Paints

As a building construction material, lead has been frequently used in oil based paints as a pigmentation and drying agent, particularly white and pastel shades, some paints contained as much as 50 percent lead by weight.

Additionally, lead has been used in roofing materials, cornices, tank linings, electrical conduits and soft solders for tinplate and plumbing. In the 1950s other pigments replaced lead, but smaller amounts were still used in some paints as a sealant or to speed up drying.

In 1976, federal government regulations limited the amount of lead in interior pain to 0.5 percent by weight. Exterior paint may contain more lead buy must be labelled with warning signs. Depending on the age of the paint, the lead level may be very high, paints that were produced or used prior the 1980 may contain small amounts of lead, however, paints that were produced or used prior to 1950 may contain high levels of lead.

Exposure to lead can cause a variety of adverse health effects, with children being at greatest risk. The most common route of exposure for both adults and children is ingestion of lead dust generated by deteriorating paint or by removal during renovation activities. Prior to removal of any paints as part of renovation activities, they should be tested for lead content and the removal procedures adjusted accordingly (i.e. do not sand off lead based paints).

Liquid Industrial Wastes

For Liquid Industrial Wastes the small quantity exemption for requirement of a MOE hazardous waste generator number is 25 litres per month. If more than 25 litres in a month period, or the accumulated amount of waste on site is over 25 litres, a MOE hazardous waste generator number is required.

Motor Vehicle Service Station Wastes

Wastes resulting from the servicing of motor vehicles at retail motor vehicle service stations are exempt from requiring a MOE hazardous waste generator number. These wastes are still defined as Hazardous or Liquid Industrial Wastes and must be handled at appropriately approved facilities. This exemption is limited to retail service stations that have a contract with a licensed carrier to have their wastes, from the servicing of motor vehicles, hauled off-site. Such wastes can include waste crankcase oil from oil storage tanks, water removed from gasoline storage tanks and gasoline contaminated groundwater.

Mould

Moulds or fungi are present indoors and outdoors. Exposure to mould may occur indoors on water damaged building materials during occupancy, building maintenance and/or repair operations. The most common types of moulds are generally not hazardous. However, some moulds may be problematic to some people.

Pigeon Droppings

Pigeon droppings are known to harbour the fungus cryptococcus neoformans which cause the disease cryptococcosis, a serious respiratory disorder. In addition soils enriched by pigeon droppings roosting overhead can harbour the fungus histoplasma capsulatium which can cause the disease histoplasmosis, another serious respiratory disorder. Both diseases infect humans through inhalation and can be prevented through proper use of respirators when handling contaminated materials.

Polychlorinated Biphenyls – PCBs

Polychlorinated biphenyls or PCBs, are typically found in transformers and other electrical equipment containing insulating liquids. The management of PCB waste is regulated by Waste Management – PCBs Regulation, Ontario Regulation 362.

The use of PCBs in electrical equipment was reduced drastically in the early 1970s and has been banned since 1977. However, light ballasts manufactured prior to 1977 may contain PCBs; many are still in service today.

Occurrence

PCBs are most commonly found in electrical equipment such as: fluorescent lamp ballasts, capacitors, and transformers.

APPENDIX D

HISTORICAL MAP AND AERIAL PHOTOGRAPHS

Key Plan - NTS

LEGEND

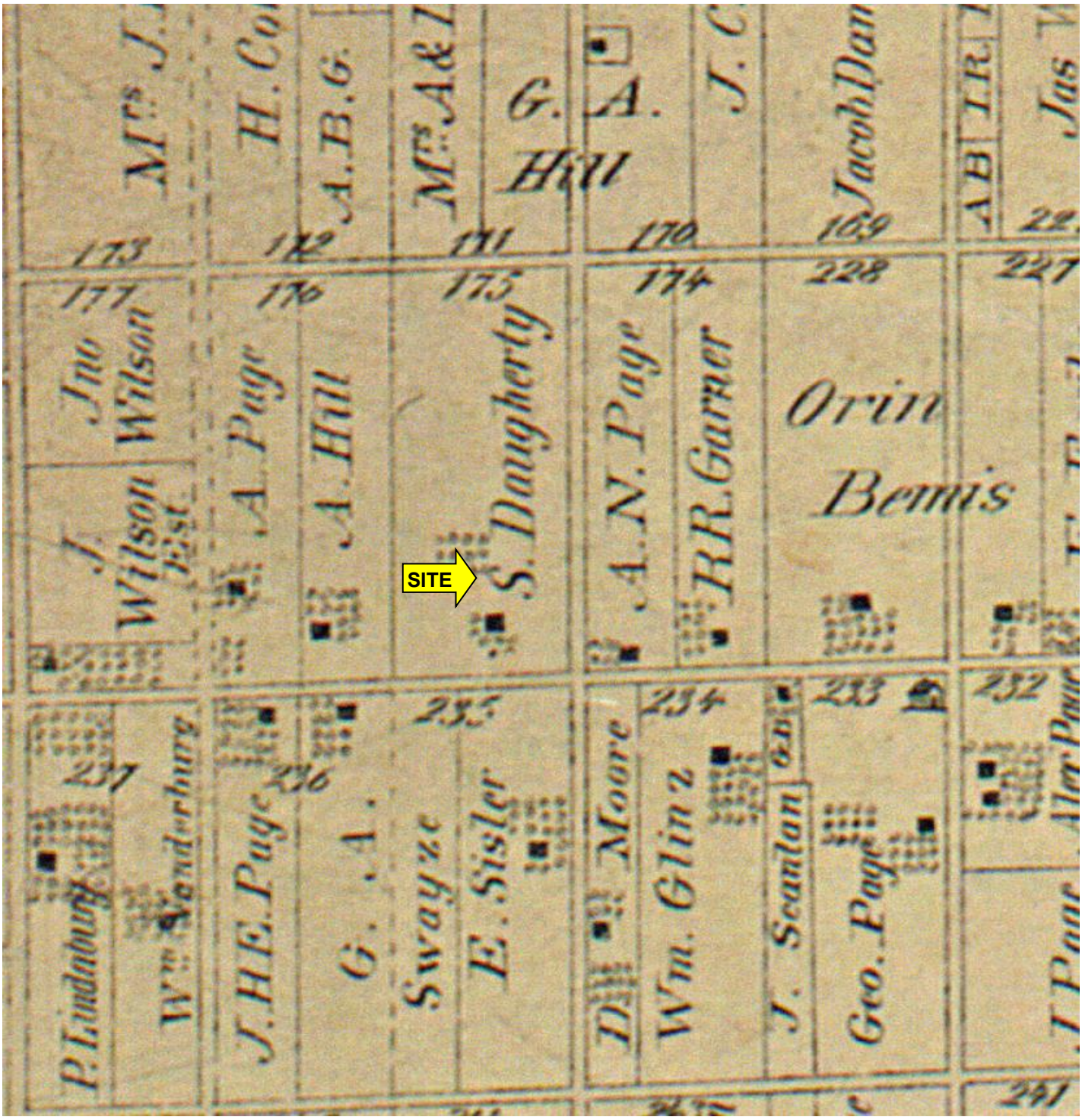
- Approximate location of boreholes drilled by Landtek Limited on December 15, 2017.
- Approximate locations of monitoring well installed by Landtek Limited on December 15, 2017.
- TBM: top elevation of existing floor slab. Assumed elevation = 100.0m.

NOTES

1. Base plan provided by google maps.
2. Borehole locations are considered approximate.

LANDTEK LIMITED
CONSULTING ENGINEERS
205 NEBO ROAD, HAMILTON, ONTARIO, L8W 2E1

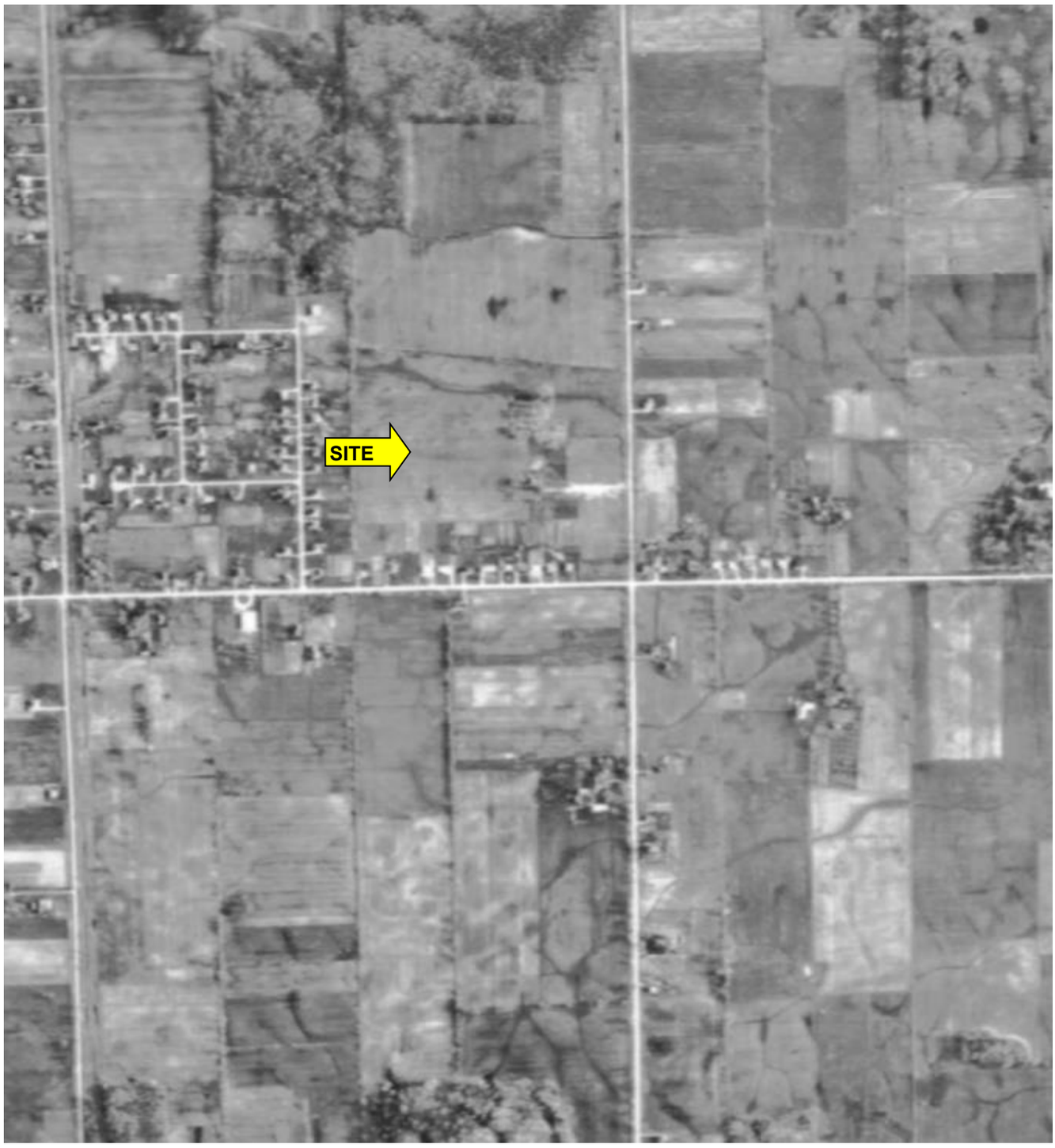
DRAWING:	Borehole Location Plan		
PROJECT:	Preliminary Geotechnical Investigation Report 469 Rice Road, Welland, Ontario		
SCALE:	NTS	**PROJECT NO.**	17480
DATE:	January, 2018	**DRAWING NO.**	1

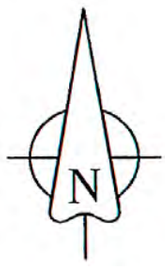


LANDTEK LIMITED		
Scale:	NTS	Date: December 2017
Project:	Phase 1 ESA 469 Rice Road Welland, ON	
Title:	Historical Map - 1875	
Project No.	17442	

LANDTEK LIMITED

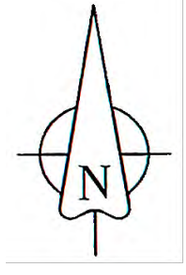
Scale:	NTS	Date: December 2017
Project:	Phase 1 ESA 469 Rice Road Welland, ON	
Title:	Aerial Photograph - 1934	
Project No.	17442	





LANDTEK LIMITED

Scale:	NTS	Date: December 2017
Project:	Phase 1 ESA 469 Rice Road Welland, ON	
Title:	Aerial Photograph - 1960	
Project No.	17442	



LANDTEK LIMITED

Scale:	NTS	Date: December 2017
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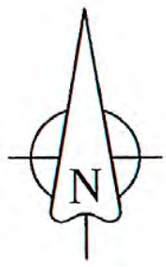
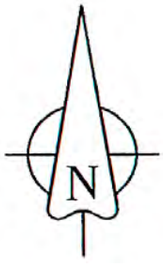
Title:	Aerial Photograph - 1968	
Project No.	17442	



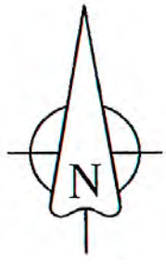
LANDTEK LIMITED

Scale:	NTS	Date: December 2017
Project:	Phase 1 ESA 469 Rice Road Welland, ON	
Title:	Aerial Photograph - 1976	
Project No.	17442	



LANDTEK LIMITED

Scale:	NTS	Date: December 2017
Project:	Phase 1 ESA 469 Rice Road Welland, ON	
Title:	Aerial Photograph - 2002	
Project No.	17442	



LANDTEK LIMITED		
Scale:	NTS	Date: December 2017
Project:	Phase 1 ESA 469 Rice Road Welland, ON	
Title:	Aerial Photograph - 2010	
Project No.	17442	

N

LANDTEK LIMITED

Scale:	NTS	Date: December 2017
Project:	Phase 1 ESA 469 Rice Road Welland, ON	
Title:	Aerial Photograph - 2016	
Project No.	17442	

APPENDIX E

ENVIRONMENTAL RISK INFORMATION SERVICE (ERIS) DATA

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*469 Rice Road* *469 Rice Rd* *Welland ON L3C2W2*
Project No:	*17435*
Report Type:	*Standard Express Report*
Order No:	*20171117010*
Requested by:	*Landtek Limited*
Date Completed:	*November 17, 2017*

Environmental Risk Information Services
A division of Glacier Media Inc.
P: 1.866.517.5204
E: info@erisinfo.com

www.erisinfo.com

Table of Contents

Executive Summary

Property Information:

Project Property:	*469 Rice Road* *469 Rice Rd Welland ON L3C2W2*
Project No:	*17435*

Coordinates:

Latitude:	*43.023428*
Longitude:	*-79.271175*
UTM Northing:	*4,764,866.66*
UTM Easting:	*640,861.61*
UTM Zone:	*UTM Zone 17T*

Elevation:	*606 FT* *184.84 M*

Order Information:

Order No:	*20171117010*
Date Requested:	*November 17, 2017*
Requested by:	*Landtek Limited*
Report Type:	*Standard Express Report*

Historical/Products:

Aerial Photographs	*National Collection - Digital (PDF)*
City Directory Search	*Subject Site*
ERIS Xplorer	*Data and Historical Layer Viewer*
Insurance Products	*Fire Insurance Maps/Inspection Reports/Site Specific Plans*
Land Title Search	*Title Search*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Within 0.25 km	Total
AAGR	*Abandoned Aggregate Inventory*	Y	0	0	0
AGR	*Aggregate Inventory*	Y	0	0	0
AMIS	*Abandoned Mine Information System*	Y	0	0	0
ANDR	*Anderson's Waste Disposal Sites*	Y	0	0	0
AUWR	*Automobile Wrecking & Supplies*	Y	0	0	0
BORE	*Borehole*	Y	0	0	0
CA	*Certificates of Approval*	Y	0	0	0
CFOT	*Commercial Fuel Oil Tanks*	Y	0	0	0
CHEM	*Chemical Register*	Y	0	0	0
CNG	*Compressed Natural Gas Stations*	Y	0	0	0
COAL	*Inventory of Coal Gasification Plants and Coal Tar Sites*	Y	0	0	0
CONV	*Compliance and Convictions*	Y	0	0	0
CPU	*Certificates of Property Use*	Y	0	0	0
DRL	*Drill Hole Database*	Y	0	0	0
EASR	*Environmental Activity and Sector Registry*	Y	0	0	0
EBR	*Environmental Registry*	Y	0	0	0
ECA	*Environmental Compliance Approval*	Y	0	0	0
EEM	*Environmental Effects Monitoring*	Y	0	0	0
EHS	*ERIS Historical Searches*	Y	0	0	0
EIIS	*Environmental Issues Inventory System*	Y	0	0	0
EMHE	*Emergency Management Historical Event*	Y	0	0	0
EXP	*List of TSSA Expired Facilities*	Y	0	0	0
FCON	*Federal Convictions*	Y	0	0	0
FCS	*Contaminated Sites on Federal Land*	Y	0	0	0
FOFT	*Fisheries & Oceans Fuel Tanks*	Y	0	0	0
FST	*Fuel Storage Tank*	Y	0	0	0
FSTH	*Fuel Storage Tank - Historic*	Y	0	0	0
GEN	*Ontario Regulation 347 Waste Generators Summary*	Y	0	0	0
GHG	*Greenhouse Gas Emissions from Large Facilities*	Y	0	0	0
HINC	*TSSA Historic Incidents*	Y	0	1	1
IAFT	*Indian & Northern Affairs Fuel Tanks*	Y	0	0	0
INC	*TSSA Incidents*	Y	0	0	0
LIMO	*Landfill Inventory Management Ontario*	Y	0	0	0
MINE	*Canadian Mine Locations*	Y	0	0	0
MNR	*Mineral Occurrences*	Y	0	0	0
NATE	*National Analysis of Trends in Emergencies System (NATES)*	Y	0	0	0

Database	Name	Searched	Project Property	Within 0.25 km	Total
NCPL	Non-Compliance Reports	Y	0	0	0
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBI	National Energy Board Pipeline Incidents	Y	0	0	0
NEBW	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OGW	Oil and Gas Wells	Y	0	0	0
OOGW	Ontario Oil and Gas Wells	Y	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PES	Pesticide Register	Y	0	0	0
PINC	TSSA Pipeline Incidents	Y	0	0	0
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	Y	0	0	0
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	0	0
SPL	Ontario Spills	Y	0	0	0
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	TSSA Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	0	0
WWIS	Water Well Information System	Y	0	1	1
	Total:		0	2	2

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
1	HINC		528 QUAKER ROAD WELLAND ON L3C 3G9	SSW/137.3	0.00	12
2	WWIS		lot 235 ON	SSE/138.9	0.00	12

Executive Summary: Summary By Data Source

HINC - TSSA Historic Incidents

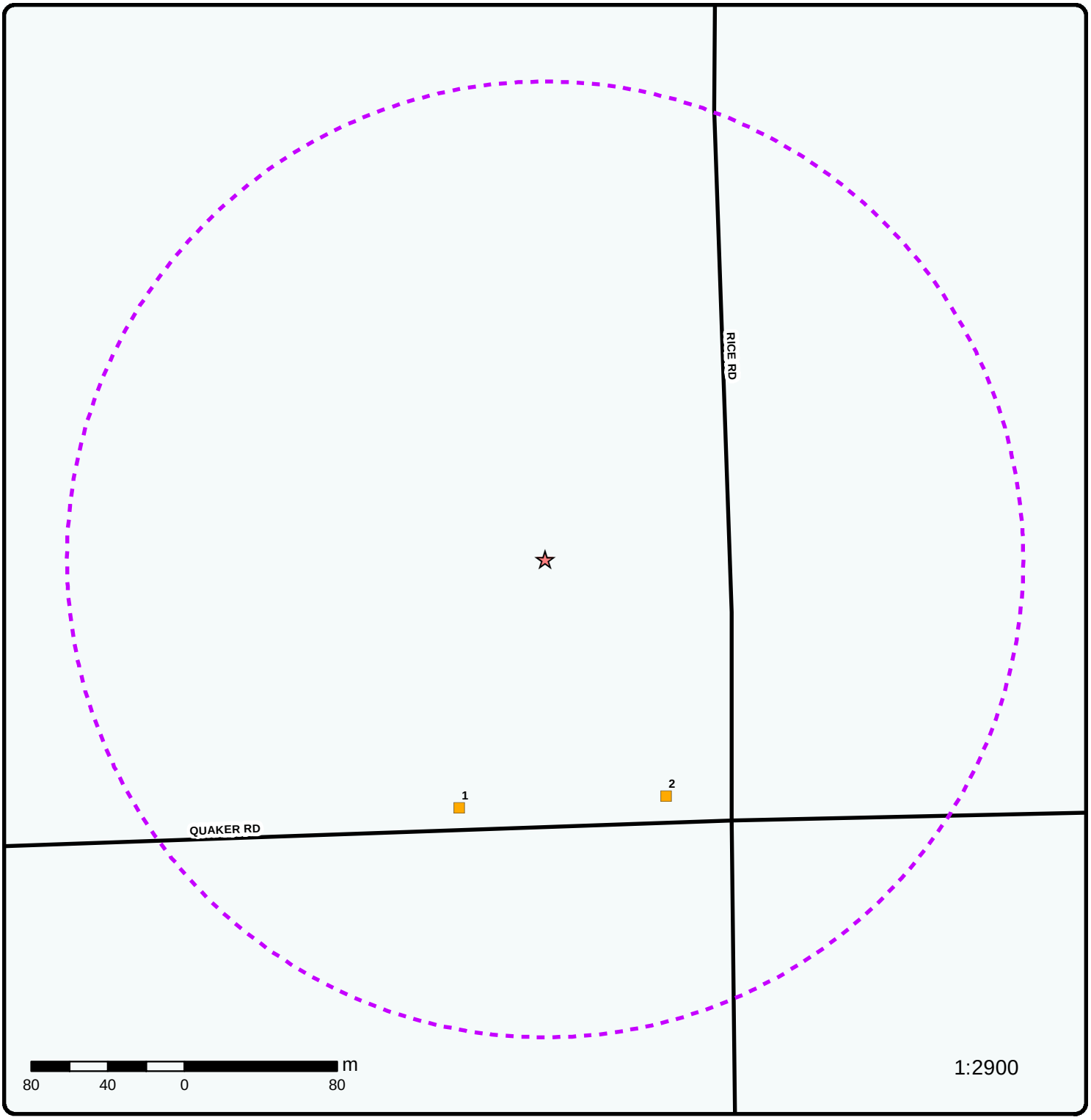
A search of the HINC database, dated 2006-June 2009* has found that there are 1 HINC site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
	528 QUAKER ROAD WELLAND ON L3C 3G9	SSW	137.33	1

WWIS - Water Well Information System

A search of the WWIS database, dated Mar 31, 2017 has found that there are 1 WWIS site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
	lot 235 ON	SSE	138.94	2



Map : 0.25 Kilometer Radius

Order No: 20171117010

Address: 469 Rice Rd, Welland, ON L3C2W2 CA

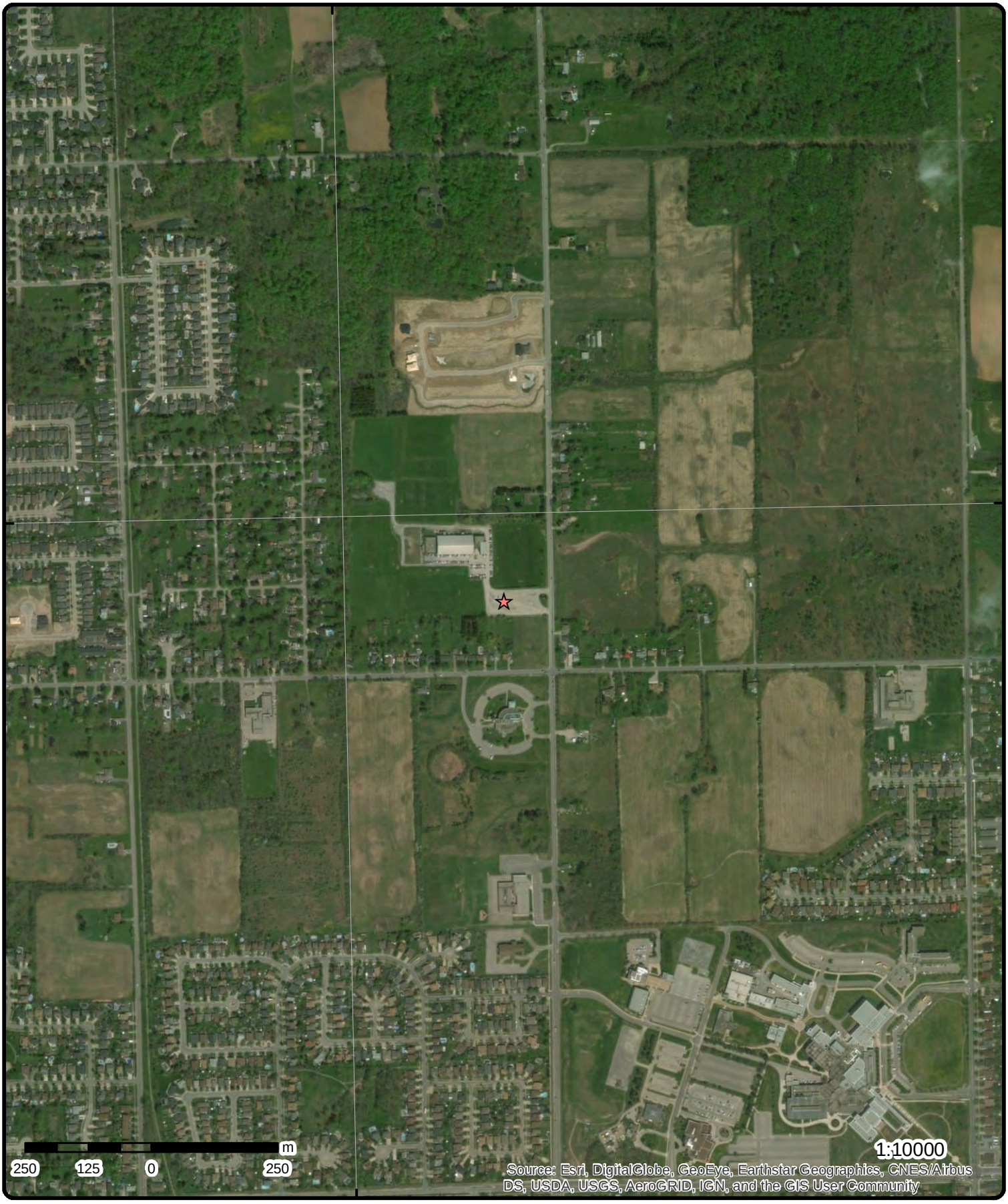
ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Expressway
- Principal Highway
- Secondary Highway
- Major Road
- Local road
- Trail
- Proposed Road
- Ferry Route/Ice Road
- Industrial and Resource - Regions
- Main Line
- Sidetrack
- Transit Line
- Abandoned Line
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

Source: © 2015 DMTI Spatial Inc.

79°16'30"W

43°1'30"N



43°1'30"N

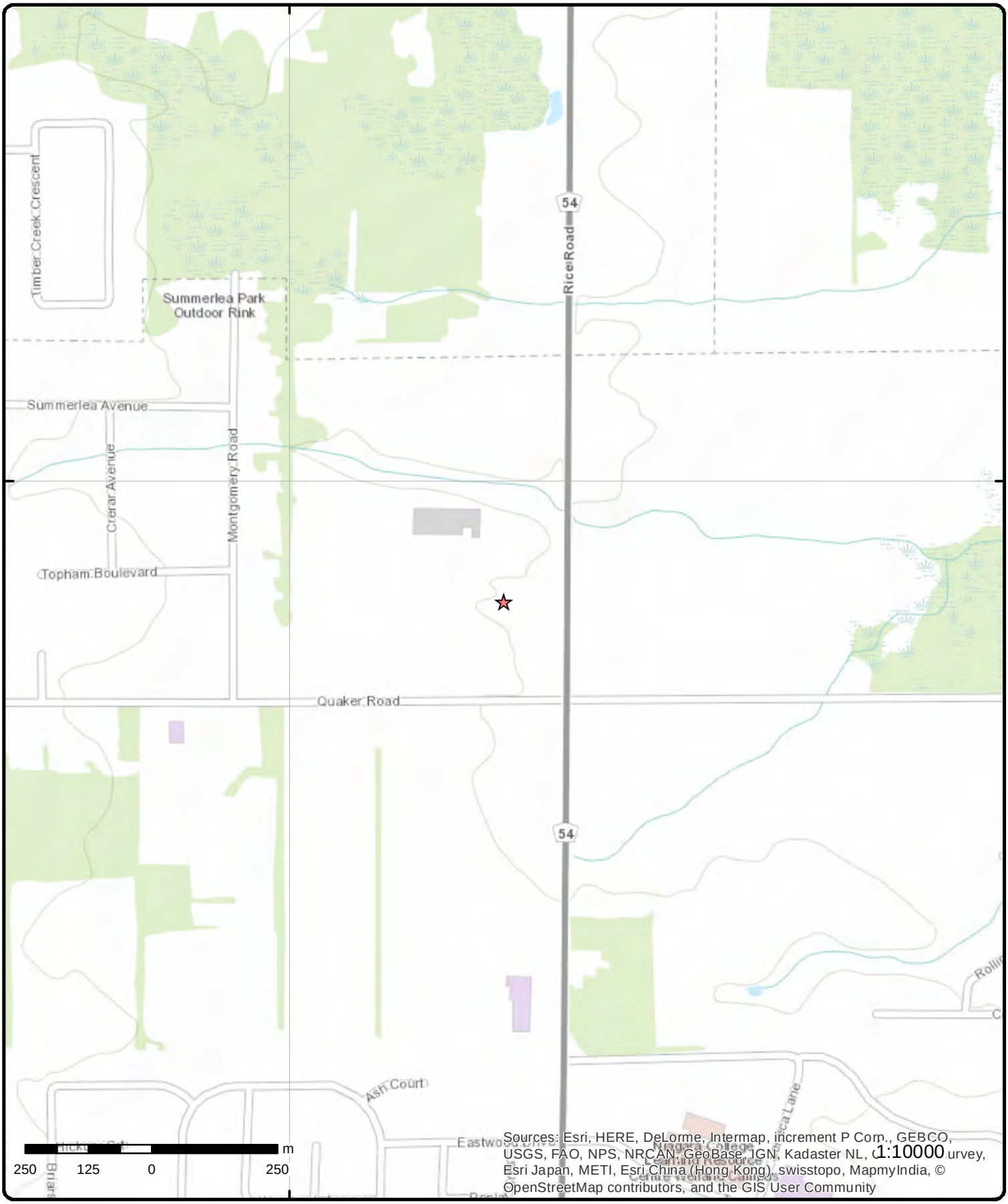
Aerial

Address: 469 Rice Rd, Welland, ON L3C2W2 CA

Source: ESRI World Imagery

Order No: 20171117010

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES



Topographic Map

Address: 469 Rice Rd, Welland, ON L3C2W2 CA

Source: ESRI World Topographic Map

Order No: 20171117010

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
1	1 of 1	SSW/137.3	184.8	528 QUAKER ROAD WELLAND ON L3C 3G9	HINC

External File Num: FS INC 0709-05276
Date of Occurrence: 9/19/2007
Fuel Occurrence Type: Vapour Release
Fuel Type Involved: Natural Gas
Status Desc:: Completed - No Action Required
Job Type Desc:: Incident/Near-Miss Occurrence (FS)
Oper. Type Involved:: Construction Site (pipeline strike)
Service Interruptions:: No
Property Damage:: No
Fuel Life Cycle Stage:: Transmission, Distribution and Transportation
Root Cause::
Reported Details::
Fuel Category:: Gaseous Fuel
Occurrence Type:: Incident
Affiliation:: Industry Stakeholder (Licensee/Registration/Certificate Holder, Facility Owner, etc.)
County Name:: Niagara
Approx. Quant. Rel::
Nearby body of water::
Enter Drainage Syst.::
Approx. Quant. Unit::
Environmental Impact::

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
2	1 of 1	SSE/138.9	184.8	lot 235 ON	WWIS

Well ID: 6601899
Construction Date:
Primary Water Use: Public
Sec. Water Use: 0
Final Well Status: Water Supply
Water Type:
Casing Material:
Audit No:
Tag:
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:
Static Water Level:
Flowing (Y/N):
Flow Rate:
Clear/Cloudy:

Data Entry Status:
Data Src: 1
Date Received: 12/13/1950
Selected Flag: 1
Abandonment Rec:
Contractor: 3409
Form Version: 1
Owner:
Street Name:
County: NIAGARA (WELLAND)
Municipality: WELLAND CITY (THOROLD)
Site Info:
Lot: 235
Concession:
Concession Name:
Easting NAD83:
Northing NAD83:
Zone:
UTM Reliability:

Bore Hole Information

Bore Hole ID: 10461632
DP2BR: 107
Spatial Status:
Cluster Kind:

Code OB:	r	**UTMRC:**	5
Code OB Desc:	Bedrock	**UTMRC Desc:**	margin of error : 100 m - 300 m
Open Hole:		**Location Method:**	p5
Elevation:	184.767227	**Org CS:**	
Elevrc:		**Date Completed:**	11/20/1948
Remarks:			
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	932593512
Layer:	1
Color:	3
General Color:	BLUE
Mat1:	05
Most Common Material:	CLAY
Mat2:	
Other Materials:	
Mat3:	
Other Materials:	
Formation Top Depth:	0.00
Formation End Depth:	80.00
Formation End Depth UOM:	ft

Formation ID:	932593513
Layer:	2
Color:	
General Color:	
Mat1:	08
Most Common Material:	FINE SAND
Mat2:	
Other Materials:	
Mat3:	
Other Materials:	
Formation Top Depth:	80.00
Formation End Depth:	107.00
Formation End Depth UOM:	ft

Formation ID:	932593514
Layer:	3
Color:	
General Color:	
Mat1:	15
Most Common Material:	LIMESTONE
Mat2:	
Other Materials:	
Mat3:	
Other Materials:	
Formation Top Depth:	107.00
Formation End Depth:	111.00
Formation End Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	966601899
Method Construction Code:	1
Method Construction:	Cable Tool

Other Method Construction:

Pipe Information

Pipe ID: 11010202
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930749934
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 107.00
Casing Diameter: 6.00
Casing Diameter UOM: inch
Casing Depth UOM: ft

Casing ID: 930749935
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 111.00
Casing Diameter: 6.00
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 996601899
Pump Set At:
Static Level: 35.00
Final Level After Pumping: 80.00
Recommended Pump Depth:
Pumping Rate: 10.00
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 2
Pumping Duration HR:
Pumping Duration MIN:
Flowing: N

Water Details

Water ID: 933949196
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 109.00
Water Found Depth UOM: ft

Unplottable Summary

Total: 16 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
CA	ASHTON HOMES (WESTERN) LTD.	QUAKER RD./LANCASTER DR.	WELLAND CITY ON	
CA	WELLAND SOCCER CLUB	EASEMENT & QUAKER RD.	WELLAND CITY ON	
CA	FRANK SILVESTRI - COLLEGE PARK SUBD.PHII	STREET A QUAKER RD/FIRST AVE.	WELLAND CITY ON	
CA	WELLAND CITY	QUAKER RD. E. OF N.R. 50	WELLAND CITY ON	
CA	WELLAND CITY	QUAKER ROAD	WELLAND CITY ON	
CA	WELLAND CITY	PRICE AVE/BETTS AVE/BARRON ST.	WELLAND ON	
CA	WELLAND CITY	QUAKER ROAD	WELLAND CITY ON	
CA	WELLAND CITY	FIRST AVE/QUAKER ROAD	WELLAND CITY ON	
CA	WELLAND CITY - BETTS STREET	PRICE AVE./FIRST AVE.	WELLAND CITY ON	
CA	LANTANA HOLDINGS BRIAN CHEV. OLDS	EASEMENT QUAKER RD.	WELLAND CITY ON	
CA	THE CITY	RICE RD.	WELLAND ON	
CA	WELLAND CITY - BARRON ST.	PRICE AVE./FIRST AVE./BETTS ST	WELLAND CITY ON	
CA	WELLAND COUNTY ROMAN CATHOLIC SEP. SCH.	P.S. RICE RD. 8-2101-89	WELLAND CITY ON	
GEN	WELLAND COUNTY R.C.S.S. BOARD 42-654	ST. JOSEPH, LINCOLN STREET & EMPRESS AVENUE, C/O 427 RICE ROAD	WELLAND ON	L3C 7C1
GEN	WELLAND COUNTY R.C.S.S. BOARD 42-657	OUR LADY OF GRACE, 243 GORHAM ROAD RIDGEWAY, C/O 427 RICE ROAD	WELLAND ON	L3C 7C1
SPL	Welland Hydro-Electric System Corp.	Quaker Road	Welland ON	

Unplottable Report

Site: ***ASHTON HOMES (WESTERN) LTD.***
QUAKER RD./LANCASTER DR. WELLAND CITY ON

Database: ***CA***

Certificate #:	3-0236-94-
Application Year:	94
Issue Date:	3/28/1994
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name::	
Client Address::	
Client City::	
Client Postal Code::	
Project Description::	
Contaminants::	
Emission Control::	

Site: ***WELLAND SOCCER CLUB***
EASEMENT & QUAKER RD. WELLAND CITY ON

Database: ***CA***

Certificate #:	3-1088-86-
Application Year:	86
Issue Date:	8/27/1986
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name::	
Client Address::	
Client City::	
Client Postal Code::	
Project Description::	
Contaminants::	
Emission Control::	

Site: ***FRANK SILVESTRI - COLLEGE PARK SUBD.PHII***
STREET A QUAKER RD/FIRST AVE. WELLAND CITY ON

Database: ***CA***

Certificate #:	3-0141-90-
Application Year:	90
Issue Date:	2/9/1990
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name::	
Client Address::	
Client City::	
Client Postal Code::	
Project Description::	
Contaminants::	
Emission Control::	

Site: ***WELLAND CITY***
QUAKER RD. E. OF N.R. 50 WELLAND CITY ON

Database: ***CA***

Certificate #:	3-1209-89-
Application Year:	89

Issue Date: 6/27/1989
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name::
Client Address::
Client City::
Client Postal Code::
Project Description::
Contaminants::
Emission Control::

Site: ***WELLAND CITY***
QUAKER ROAD WELLAND CITY ON

Database: ***CA***

Certificate #: 3-1368-88-
Application Year: 88
Issue Date: 8/5/1988
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name::
Client Address::
Client City::
Client Postal Code::
Project Description::
Contaminants::
Emission Control::

Site: ***WELLAND CITY***
PRICE AVE/BETTS AVE/BARRON ST. WELLAND ON

Database: ***CA***

Certificate #: 7-0474-98-
Application Year: 98
Issue Date: 6/12/1998
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name::
Client Address::
Client City::
Client Postal Code::
Project Description::
Contaminants::
Emission Control::

Site: ***WELLAND CITY***
QUAKER ROAD WELLAND CITY ON

Database: ***CA***

Certificate #: 7-1177-88-
Application Year: 88
Issue Date: 8/5/1988
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name::
Client Address::
Client City::
Client Postal Code::
Project Description::
Contaminants::
Emission Control::

Site: ***WELLAND CITY***
FIRST AVE/QUAKER ROAD WELLAND CITY ON

Database: ***CA***

Certificate #: 3-0335-95-
Application Year: 95
Issue Date: 4/18/1995
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name::
Client Address::
Client City::
Client Postal Code::
Project Description::
Contaminants::
Emission Control::

Site: ***WELLAND CITY - BETTS STREET***
PRICE AVE./FIRST AVE. WELLAND CITY ON

Database: ***CA***

Certificate #: 3-0696-91-
Application Year: 91
Issue Date: 6/11/1991
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name::
Client Address::
Client City::
Client Postal Code::
Project Description::
Contaminants::
Emission Control::

Site: ***LANTANA HOLDINGS BRIAN CHEV. OLDS***
EASEMENT QUAKER RD. WELLAND CITY ON

Database: ***CA***

Certificate #: 3-0646-86-
Application Year: 86
Issue Date: 6/27/1986
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name::
Client Address::
Client City::
Client Postal Code::
Project Description::
Contaminants::
Emission Control::

Site: ***THE CITY***
RICE RD. WELLAND ON

Database: ***CA***

Certificate #: 7-0278-85-006
Application Year: 85
Issue Date: 5/8/85
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name::
Client Address::
Client City::
Client Postal Code::
Project Description::

Contaminants::
Emission Control::

Site: ***WELLAND CITY - BARRON ST.***
PRICE AVE./FIRST AVE./BETTS ST WELLAND CITY ON

Database: ***CA***

Certificate #: 3-0753-92-
Application Year: 92
Issue Date: 6/29/1992
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name::
Client Address::
Client City::
Client Postal Code::
Project Description::
Contaminants::
Emission Control::

Site: ***WELLAND COUNTY ROMAN CATHOLIC SEP. SCH.***
P.S. RICE RD. 8-2101-89 WELLAND CITY ON

Database: ***CA***

Certificate #: 3-0713-89-
Application Year: 89
Issue Date: 5/15/1989
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name::
Client Address::
Client City::
Client Postal Code::
Project Description::
Contaminants::
Emission Control::

Site: ***WELLAND COUNTY R.C.S.S. BOARD 42-654***
ST. JOSEPH, LINCOLN STREET & EMPRESS AVENUE, C/O 427 RICE ROAD WELLAND ON L3C 7C1

Database: ***GEN***

Generator No.: ON1381736
Status:
Approval Years: 93,94,95,96
Contam. Facility:
MHSW Facility:
SIC Code: 8511
SIC Description: ELEMT./SECON. EDUC.

PO Box No.:
Country:
Choice of Contact:
Co Admin:
Phone No. Admin:

--Details--
Waste Code: 148
Waste Description: INORGANIC LABORATORY CHEMICALS

Waste Code: 263
Waste Description: ORGANIC LABORATORY CHEMICALS

Site: ***WELLAND COUNTY R.C.S.S. BOARD 42-657***
OUR LADY OF GRACE, 243 GORHAM ROAD RIDGEWAY, C/O 427 RICE ROAD WELLAND ON L3C 7C1

Database: ***GEN***

Generator No.: ON1381739
Status:
Approval Years: 94,95,96
Contam. Facility:
MHSW Facility:

PO Box No.:
Country:
Choice of Contact:
Co Admin:
Phone No. Admin:

SIC Code: 8511
SIC Description: ELEMT./SECON. EDUC.

--Details--
Waste Code: 148
Waste Description: INORGANIC LABORATORY CHEMICALS

Waste Code: 263
Waste Description: ORGANIC LABORATORY CHEMICALS

Site: ***Welland Hydro-Electric System Corp.***
Quaker Road Welland ON

Database: ***SPL***

Ref No:	3267-6EB7CU	***Site Address:***	
Contaminant Name:	MINERAL OIL	***Site Conc:***	
Contaminant Code:		***Site Lot:***	
Contaminant Limit 1:		***Site County/District:***	
Contam. Limit Freq 1:		***Site Municipality:***	Welland
Contaminant UN No 1:		***Site Postal Code:***	
Contaminant Qty:		***Sector Type:***	Transformer
MOE Reported Dt:	7/14/2005	***Source Type:***	
Health/Env Conseq:		***Receiving Medium:***	Land
Incident Dt:	7/14/2005	***Receiving Env:***	
Incident Cause:	Other Discharges	***Environment Impact:***	Not Anticipated
Incident Event:		***Nature of Impact:***	
Incident Reason:	Storm/Flood - Resulting from storm/flood/lightening	***SAC Action Class:***	Spills to Land
Incident Summary:	Welland Hydro - non-PCB min oil - 175L		

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ***Note:*** *Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Abandoned Aggregate Inventory: Provincial AAGR

The MAAP Program maintains a database of abandoned pits and quarries. Please note that the database is only referenced by lot and concession and city/town location. The database provides information regarding the location, type, size, land use, status and general comments.*

Government Publication Date: Sept 2002*

Aggregate Inventory: Provincial AGR

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. The database provides information regarding the registered owner/operator, location name, operation type, approval type, and maximum annual tonnage.

Government Publication Date: Up to Sep 2017

Abandoned Mine Information System: Provincial AMIS

The Abandoned Mines Information System contains data on known abandoned and inactive mines located on both Crown and privately held lands. The information was provided by the Ministry of Northern Development and Mines (MNDM), with the following disclaimer: "the database provided has been compiled from various sources, and the Ministry of Northern Development and Mines makes no representation and takes no responsibility that such information is accurate, current or complete". Reported information includes official mine name, status, background information, mine start/end date, primary commodity, mine features, hazards and remediation.

Government Publication Date: 1800-Nov 2016

Anderson's Waste Disposal Sites: Private ANDR

The information provided in this database was collected by examining various historical documents which aimed to characterize the likely position of former waste disposal sites from 1860 to present. The research initiative behind the creation of this database was to identify those sites that are missing from the Ontario MOE Waste Disposal Site Inventory, as well as to provide revisions and corrections to the positions and descriptions of sites currently listed in the MOE inventory. In addition to historic waste disposal facilities, the database also identifies certain auto wreckers and scrap yards that have been extrapolated from documentary sources. Please note that the data is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1860s-Present

Automobile Wrecking & Supplies: Private AUWR

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 1999-May 2017

Borehole: Provincial BORE

A borehole is the generalized term for any narrow shaft drilled in the ground, either vertically or horizontally. The information here includes geotechnical investigations or environmental site assessments, mineral exploration, or as a pilot hole for installing piers or underground utilities. Information is from many sources such as the Ministry of Transportation (MTO) boreholes from engineering reports and projects from the 1950 to 1990's in Southern Ontario. Boreholes from the Ontario Geological Survey (OGS) including The Urban Geology Analysis Information System (UGAIS) and the York Peel Durham Toronto (YPDT) database of the Conservation Authority Moraine Coalition. This database will include fields such as location, stratigraphy, depth, elevation, year drilled, etc. For all water well data or oil and gas well data for Ontario please refer to WWIS and OOGW.

Government Publication Date: 1875-Jul 2014

Certificates of Approval: Provincial CA

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status. This database will no longer be updated, as CofA's have been replaced by either Environmental Activity and Sector Registry (EASR) or Environmental Compliance Approval (ECA). Please refer to those individual databases for any information after Oct.31, 2011.

Government Publication Date: 1985-Oct 30, 2011*

Commercial Fuel Oil Tanks: Provincial CFOT

Since May 2002, Ontario developed a new act where it became mandatory for fuel oil tanks to be registered with Technical Standards & Safety Authority (TSSA). This data would include all commercial underground fuel oil tanks in Ontario with fields such as location, registration number, tank material, age of tank and tank size.

Government Publication Date: Feb 28, 2017

Chemical Register: Private CHEM

This database includes information from both a one time study conducted in 1992 and private source and is a listing of facilities that manufacture or distribute chemicals. The production of these chemical substances may involve one or more chemical reactions and/or chemical separation processes (i.e. fractionation, solvent extraction, crystallization, etc.).

Government Publication Date: 1999-May 2017

Compressed Natural Gas Stations: Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 31, 2012

Inventory of Coal Gasification Plants and Coal Tar Sites: Provincial COAL

This inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988) collected by the MOE. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. Detailed information is available and includes: facility type, size, land use, information on adjoining properties, soil condition, site operators/occupants, site description, potential environmental impacts and historic maps available. This was a one-time inventory.*

Government Publication Date: Apr 1987 and Nov 1988*

Compliance and Convictions: Provincial CONV

This database summarizes the fines and convictions handed down by the Ontario courts beginning in 1989. Companies and individuals named here have been found guilty of environmental offenses in Ontario courts of law.

Government Publication Date: 1989-Sep 2017

Certificates of Property Use: Provincial CPU

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Government Publication Date: 1994-Oct 2017

Drill Hole Database: Provincial DRL

The Ontario Drill Hole Database contains information on more than 113,000 percussion, overburden, sonic and diamond drill holes from assessment files on record with the department of Mines and Minerals. Please note that limited data is available for southern Ontario, as it was the last area to be completed. The database was created when surveys submitted to the Ministry were converted in the Assessment File Research Image Database (AFRI) project. However, the degree of accuracy (coordinates) as to the exact location of drill holes is dependent upon the source document submitted to the MNDM. Levels of accuracy used to locate holes are: centering on the mining claim; a sketch of the mining claim; a 1:50,000 map; a detailed company map; or from submitted a "Report of Work".

Government Publication Date: 1886-Aug 2015

Environmental Activity and Sector Registry: Provincial EASR

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities with the ministry, rather than apply for an approval. The registry is available for common systems and processes, to which preset rules of operation can be applied. The EASR is currently available for: heating systems, standby power systems and automotive refinishing. Businesses whose activities aren't subject to the EASR may apply for an ECA (Environmental Compliance Approval), Please see our ECA database.

Government Publication Date: Oct 2011-Oct 2017

Environmental Registry: Provincial EBR

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, license, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes: Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9, Approval for sewage works - OWRA s. 53(1), and EPA s. 27 - Approval for a waste disposal site. For information regarding Permit to Take Water (PTTW), Certificate of Property Use (CPU) and (ORD) Orders please refer to those individual databases.

Government Publication Date: 1994-Oct 2017

Environmental Compliance Approval: Provincial ECA

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. In the past, a business had to apply for multiple approvals (known as certificates of approval) for individual processes and pieces of equipment. Today, a business either registers itself, or applies for a single approval, depending on the types of activities it conducts. Businesses whose activities aren't subject to the EASR may apply for an ECA. A single ECA addresses all of a business's emissions, discharges and wastes. Separate approvals for air, noise and waste are no longer required. This database will also include Renewable Energy Approvals. For certificates of approval prior to Nov 1st, 2011, please refer to the CA database. For all Waste Disposal Sites please refer to the WDS database.

Government Publication Date: Oct 2011-Oct 2017

Environmental Effects Monitoring: Federal EEM

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Government Publication Date: 1992-2007*

ERIS Historical Searches: Private EHS

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Aug 2016

Environmental Issues Inventory System: Federal EIIS

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Government Publication Date: 1992-2001*

Emergency Management Historical Event: Provincial EMHE

List of locations of historical occurrences of emergency events, including those assigned to the Ministry of Natural Resources by Order-In-Council (OIC) under the Emergency Management and Civil Protection Act, as well as events where MNR provided requested emergency response assistance. Many of these events will have involved community evacuations, significant structural loss, and/or involvement of MNR emergency response staff. These events fall into one of ten (10) type categories: Dam Failure; Drought / Low Water; Erosion; Flood; Forest Fire; Soil and Bedrock Instability; Petroleum Resource Center Event, EMO Requested Assistance, Continuity of Operations Event, Other Requested Assistance. EMHE record details are reproduced by ERIS under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2017.

Government Publication Date: Dec 31, 2016

List of TSSA Expired Facilities: Provincial EXP

List of facilities with removed tanks which were once registered with the Fuels Safety Program of the Technical Standards and Safety Authority (TSSA). Includes private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc. Tanks which have been removed automatically fall under the expired facilities inventory held by TSSA.

Government Publication Date: Feb 28, 2017

Federal Convictions: Federal FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land: Federal FCS

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government.

Government Publication Date: Jun 2000-Mar 2017

Fisheries & Oceans Fuel Tanks: Federal FOFT

Fisheries & Oceans Canada maintains an inventory of aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Government Publication Date: 1964-Apr 2015

Fuel Storage Tank: Provincial FST

The Technical Standards & Safety Authority (TSSA), under the Technical Standards & Safety Act of 2000 maintains a database of registered private and retail fuel storage tanks in Ontario with fields such as location, tank status, license date, tank type, tank capacity, fuel type, installation year and facility type.

Government Publication Date: Feb 28, 2017

Fuel Storage Tank - Historic: Provincial FSTH

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks. Public records of private fuel storage tanks are only available since the registration became effective in September 1989. This information is now collected by the Technical Standards and Safety Authority.

Government Publication Date: Pre-Jan 2010*

Ontario Regulation 347 Waste Generators Summary: Provincial GEN

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as: drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution etc. This information is a summary of all years from 1986 including the most currently available data. Some records may contain, within the company name, the phrase "See & Use..." followed by a series of letters and numbers. This occurs when one company is amalgamated with or taken over by another registered company. The number listed as "See & Use", refers to the new ownership and the other identification number refers to the original ownership. This phrase serves as a link between the 2 companies until operations have been fully transferred.

Government Publication Date: 1986-Jun 2017

Greenhouse Gas Emissions from Large Facilities: Federal GHG

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO2 eq).

Government Publication Date: 2013-Dec 2015

TSSA Historic Incidents: Provincial HINC

This database will cover all incidences recorded by TSSA with their older system, before they moved to their new management system. TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. The TSSA works to protect the public, the environment and property from fuel-related hazards such as spills, fires and explosions. This database will include spills and leaks from pipelines, diesel, fuel oil, gasoline, natural gas, propane and hydrogen recorded by the TSSA.

Government Publication Date: 2006-June 2009*

Indian & Northern Affairs Fuel Tanks: Federal IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

TSSA Incidents: Provincial INC

TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Includes incidents from fuel-related hazards such as spills, fires and explosions. This database will include spills and leaks from diesel, fuel oil, gasoline, natural gas, propane and hydrogen recorded by the TSSA.

Government Publication Date: Feb 28, 2017

Landfill Inventory Management Ontario: Provincial LIMO

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the ministry compiles new and updated information. The inventory will include small and large landfills. Additionally, each year the ministry will request operators of the larger landfills complete a landfill data collection form that will be used to update LIMO and will include the following information from the previous operating year. This will include additional information such as estimated amount of total waste received, landfill capacity, estimated total remaining landfill capacity, fill rates, engineering designs, reporting and monitoring details, size of location, service area, approved waste types, leachate of site treatment, contaminant attenuation zone and more. The small landfills will include information such as site owner, site location and certificate of approval # and status.

Government Publication Date: Dec 31, 2013

Canadian Mine Locations: Private MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Mineral Occurrences: Provincial MNR

In the early 70's, the Ministry of Northern Development and Mines created an inventory of approximately 19,000 mineral occurrences in Ontario, in regard to metallic and industrial minerals, as well as some information on building stones and aggregate deposits. Please note that the "Horizontal Positional Accuracy" is approximately +/- 200 m. Many reference elements for each record were derived from field sketches using pace or chain/tape measurements against claim posts or topographic features in the area. The primary limiting factor for the level of positional accuracy is the scale of the source material. The testing of horizontal accuracy of the source materials was accomplished by comparing the plan metric (X and Y) coordinates of that point with the coordinates of the same point as defined from a source of higher accuracy.

Government Publication Date: 1846-Feb 2017

National Analysis of Trends in Emergencies System (NATES): Federal NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

Non-Compliance Reports: Provincial NCPL

The Ministry of the Environment provides information about non-compliant discharges of contaminants to air and water that exceed legal allowable limits, from regulated industrial and municipal facilities. A reported non-compliance failure may be in regard to a Control Order, Certificate of Approval, Sectoral Regulation or specific regulation/act.

Government Publication Date: Dec 31, 2014

National Defense & Canadian Forces Fuel Tanks: Federal NDFT

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills: Federal NDSP

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Aug 2010

National Defence & Canadian Forces Waste Disposal Sites: Federal NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents: Federal NEBI

Locations of pipeline incidents from 2008 to present, made available by the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008 -Jun 2017

National Energy Board Wells: Federal NEBW

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES): Federal NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003*

National PCB Inventory: Federal NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008*

National Pollutant Release Inventory: Federal NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-May 2017

Oil and Gas Wells: Private OGW

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-Sep 2017

Ontario Oil and Gas Wells: Provincial OOGW

In 1998, the MNR handed over to the Ontario Oil, Gas and Salt Resources Corporation, the responsibility of maintaining a database of oil and gas wells drilled in Ontario. The OGSR Library has over 20,000+ wells in their database. Information available for all wells in the ERIS database include well owner/operator, location, permit issue date, and well cap date, license No., status, depth and the primary target (rock unit) of the well being drilled. All geology/stratigraphy table information, plus all water table information is also provide for each well record.

Government Publication Date: 1800-Oct 2016

Inventory of PCB Storage Sites: Provincial OPCB

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province. Ontario Regulation 11/82 (Waste Management - PCB) and Regulation 347 (Generator Waste Management) under the Ontario EPA requires the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the Ontario Ministry of Environment. This database contains information on: 1) waste quantities; 2) major and minor sites storing liquid or solid waste; and 3) a waste storage inventory.

Government Publication Date: 1987-Oct 2004; 2012-Dec 2013

Orders: Provincial ORD

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all Orders on the registry such as (EPA s. 17) - Order for remedial work, (EPA s. 18) - Order for preventative measures, (EPA s. 43) - Order for removal of waste and restoration of site, (EPA s. 44) - Order for conformity with Act for waste disposal sites, (EPA s. 136) - Order for performance of environmental measures.

Government Publication Date: 1994-Oct 2017

Canadian Pulp and Paper: Private PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009

Parks Canada Fuel Storage Tanks: Federal PCFT

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Government Publication Date: 1920-Jan 2005*

Pesticide Register: Provincial PES

The Ontario Ministry of the Environment and Climate Change maintains a database of licensed operators and vendors of registered pesticides.

Government Publication Date: 1988-Aug 2017

TSSA Pipeline Incidents: Provincial PINC

TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. This database will include spills, strike and leaks from recorded by the TSSA.

Government Publication Date: Feb 28, 2017

Private and Retail Fuel Storage Tanks: Provincial PRT

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks and licensed retail fuel outlets. This database includes an inventory of locations that have gasoline, oil, waste oil, natural gas and/or propane storage tanks on their property. The MCCR no longer collects this information. This information is now collected by the Technical Standards and Safety Authority (TSSA).

Government Publication Date: 1989-1996*

Permit to Take Water: Provincial PTTW

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Government Publication Date: 1994-Oct 2017

Ontario Regulation 347 Waste Receivers Summary: Provincial REC

Part V of the Ontario Environmental Protection Act ("EPA") regulates the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. Regulation 347 of the Ontario EPA defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as: landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants. This information is a summary of all years from 1986 including the most currently available data.

Government Publication Date: 1986-2016

Record of Site Condition: Provincial RSC

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up.
RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09).

Government Publication Date: 1997-Sept 2001, Oct 2004-Aug 2017

Retail Fuel Storage Tanks: Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-May 2017

Scott's Manufacturing Directory: Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011*

Ontario Spills: Provincial SPL

This database identifies information such as location (approximate), type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact, etc. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Government Publication Date: 1988-Jun 2017

Wastewater Discharger Registration Database: Provincial SRDS

Information under this heading is combination of the following 2 programs. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment maintained a database of all direct dischargers of toxic pollutants within nine sectors including: Electric Power Generation; Mining; Petroleum Refining; Organic Chemicals; Inorganic Chemicals; Pulp & Paper; Metal Casting; Iron & Steel; and Quarries. All sampling information is now collected and stored within the Sample Result Data Store (SRDS).

Government Publication Date: 1990-2014

Anderson's Storage Tanks: Private TANK

The information provided in this database was collected by examining various historical documents, which identified the location of former storage tanks, containing substances such as fuel, water, gas, oil, and other various types of miscellaneous products. Information is available in regard to business operating at tank site, tank location, permit year, permit & installation type, no. of tanks installed & configuration and tank capacity. Data contained within this database pertains only to the city of Toronto and is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1915-1953*

Transport Canada Fuel Storage Tanks: Federal TCFT

List of fuel storage tanks currently or previously owned or operated by Transport Canada. This inventory also includes tanks on The Pickering Lands, which refers to 7,530 hectares (18,600 acres) of land in Pickering, Markham, and Uxbridge owned by the Government of Canada since 1972; properties on this land has been leased by the government since 1975, and falls under the Site Management Policy of Transport Canada, but is administered by Public Works and Government Services Canada. This inventory provides information on the site name, location, tank age, capacity and fuel type.

Government Publication Date: 1970-Jan 2015

TSSA Variances for Abandonment of Underground Storage Tanks: Provincial VAR

List of variances granted for abandoned tanks. Under the Technical Standards and Safety Authority (TSSA) Liquid Fuels Handling Code and Fuel Oil Code, all underground storage tanks must be removed within two years of disuse. If removal of a tank is not feasible, an application may be sought for a variance from this code requirement.

Government Publication Date: Feb 28, 2017

Waste Disposal Sites - MOE CA Inventory: Provincial WDS

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. All new Environmental Compliance Approvals handed out after Oct 31, 2011 for Waste Disposal Sites will still be found in this database.

Government Publication Date: Oct 31, 2017

Waste Disposal Sites - MOE 1991 Historical Approval Inventory: Provincial WDSH

In June 1991, the Ontario Ministry of Environment, Waste Management Branch, published the "June 1991 Waste Disposal Site Inventory", of all known active and closed waste disposal sites as of October 30st, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

Government Publication Date: Up to Oct 1990*

Water Well Information System: Provincial WWIS

This database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information as coordinates, construction date, well depth, primary and secondary use, pump rate, static water level, well status, etc. Also included are detailed stratigraphy information, approximate depth to bedrock and the approximate depth to the water table.

Government Publication Date: Mar 31, 2017

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

APPENDIX F

PHOTOGRAPHS OF TYPICAL SITE CONDITIONS

Photograph 1	
Photograph depicts the on-Site parking area.	

Photograph 2	
Photograph depicts the storage building on Site.	

LANDTEK LIMITED

Project No. 17435	Date: January 2018
Phase I ESA 469 Rice Road Welland, ON	
Title:	Typical Site Condition Photographs

Photograph 3	
Photograph depicts the eastern portion of the Site.	

Photograph 4	
Photograph depicts the northern portion of the Site.	

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Project No. 17435	Date: January 2018
Phase I ESA 469 Rice Road Welland, ON	
Title:	Typical Site Condition Photographs

APPENDIX G

BOREHOLE LOGS

LANDTEK LIMITED

BH 1

Project No.:	17479	Drill Date:	December 15, 2017
Project:	Phase Two Environmental Site Assessment	Drill Method:	[ ] solid stem [x] hollow stem [ ] vibratory
Location:	469 Rice Road, Welland, Ontario	Datum:	TBM: assumed elevation = 100.00 m

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Scale (m)	SPT "N" Value	Soil Moisture (%)	GWL	Monitor Details	Test Data
Ground Surface		101.2								
±150 mm Topsoil		0.0								
FILL: clayey silt, some gravel, some asphalt, brown, stiff, moist			1	SS		12	11			
						13				
			2	SS			25			
						5				
			3	SS			16			
		98.5								
FILL: clayey silt, some organics, black, firm, moist		2.7								
		98.1								
FILL: silt, trace gravel, brown, firm, moist		3.1	4	SS		6	19			
		97.8								
SILT: homogeneous, trace fine sand, brown, dense, very moist		3.4								
at 4.0 m: wet										
			5	SS		35	21			
			6	SS		39	21			
		94.6								
BOREHOLE TERMINATED		6.6								

Scale (m): 0.0, -0.5, -1.0, -1.5, -2.0, -2.5, -3.0, -3.5, -4.0, -4.5, -5.0, -5.5, -6.0, -6.5, -7.0, -7.5, -8.0

SPT "N" Value: 0, 25, 50, 75, 100

Soil Moisture (%): 0, 25, 50

Notes:
1. On completion, borehole open to 6.0 m.
2. Groundwater seepage encountered at 4.0 m.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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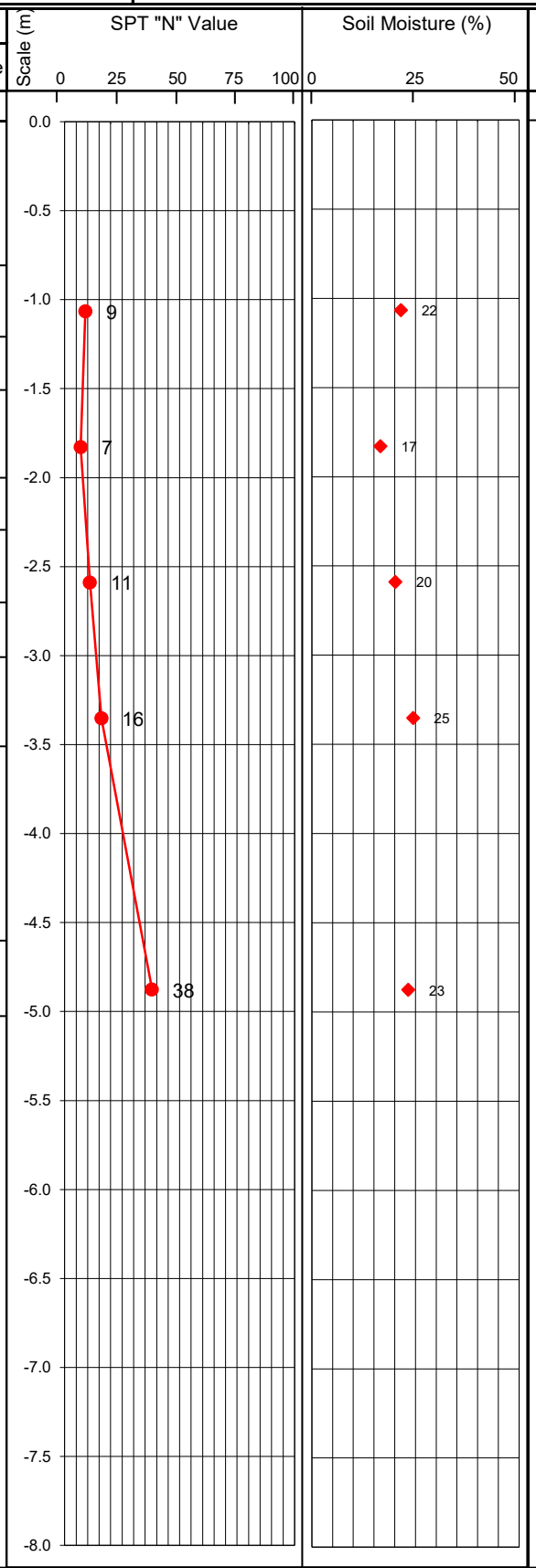
BH 2

Project No.:	17479	Drill Date:	December 15, 2017
Project:	Phase Two Enviromental Site Assessment	Drill Method:	[ ] solid stem [x] hollow stem [ ] vibratory
Location:	469 Rice Road, Welland, Ontario	Datum:	TBM: assumed elevation = 100.00 m

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Test Data
Ground Surface		99.4			
FILL: silty clay, trace gravel, trace asphalt, brown, firm to stiff, moist		0.0	1	SS	
		97.9			
FILL: silty clay, some gravel, brown, firm, moist at 2.1 m: wet		1.5	2	SS	
		97.1			
SILT: homogeneous, trace fine sand, brown, compact, wet 3.0 m to 5.0 m: compact to dense, very moist		2.3	3	SS	
			4	SS	
		94.4	5	SS	
BOREHOLE TERMINATED		5.0			



Notes:
1. On completion, borehole open to 4.5 m.
2. Groundwater seepage encountered at 2.1 m.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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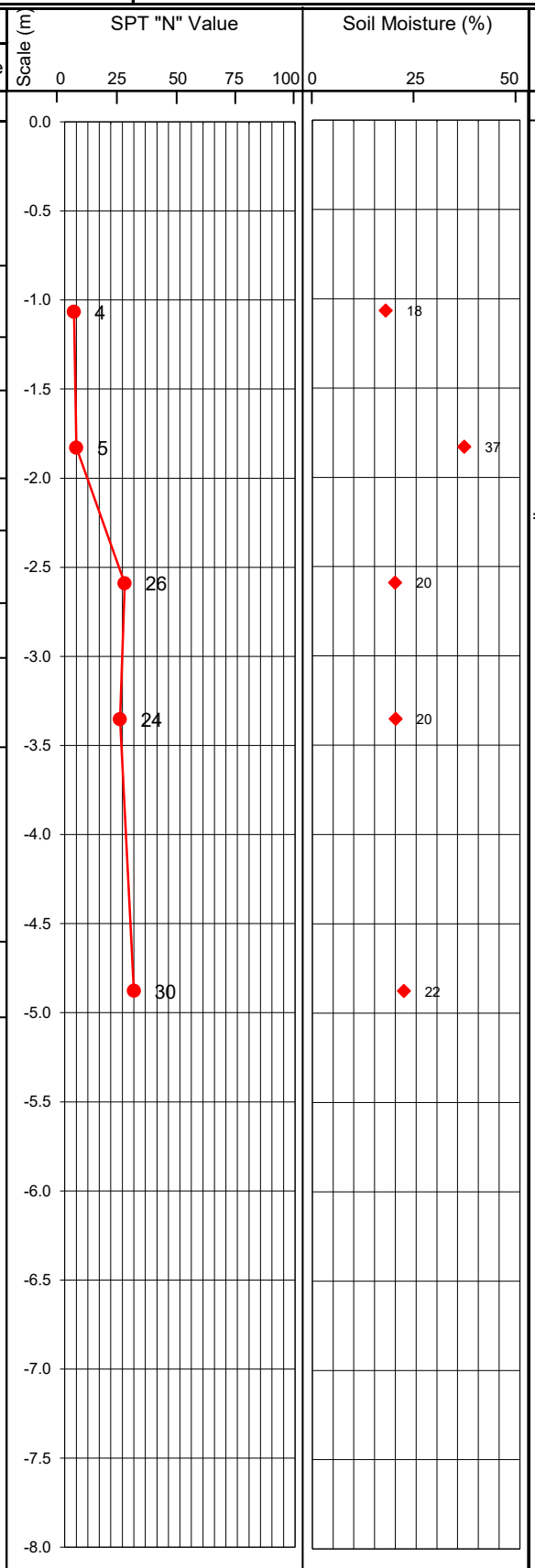
BH 3

Project No.:	17479	Drill Date:	December 15, 2017
Project:	Phase Two Environmental Site Assessment	Drill Method:	[ ] solid stem [x] hollow stem [ ] vibratory
Location:	469 Rice Road, Welland, Ontario	Datum:	TBM: assumed elevation = 100.00 m

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Test Data
Ground Surface		99.6			Stick Up= 0.82 m
±150 mm Topsoil		0.0			
FILL: clayey silt, some gravel, brown, soft, moist			1	SS	bentonite backfill to ground level
			2	SS	
		97.6			
SILT (possible native): brown, firm, moist		2.0			WL = 2.2 m Jan. 18/2018
		97.3			
SILT: trace fine sand, brown, compact, very moist		2.3	3	SS	sand backfill to 2.6 m
at 2.9 m: wet			4	SS	3.1 m
4.5 m to 5.0 m: dense			5	SS	1.5 m of slotted 50 mm dia PVC pipe
		94.6			4.6 m
BOREHOLE TERMINATED		5.0			



Notes:
1. On completion, borehole open to 4.5 m.
2. Groundwater seepage encountered at 2.9 m.
3. Water level measured at 2.2 m below ground surface on January 18, 2018

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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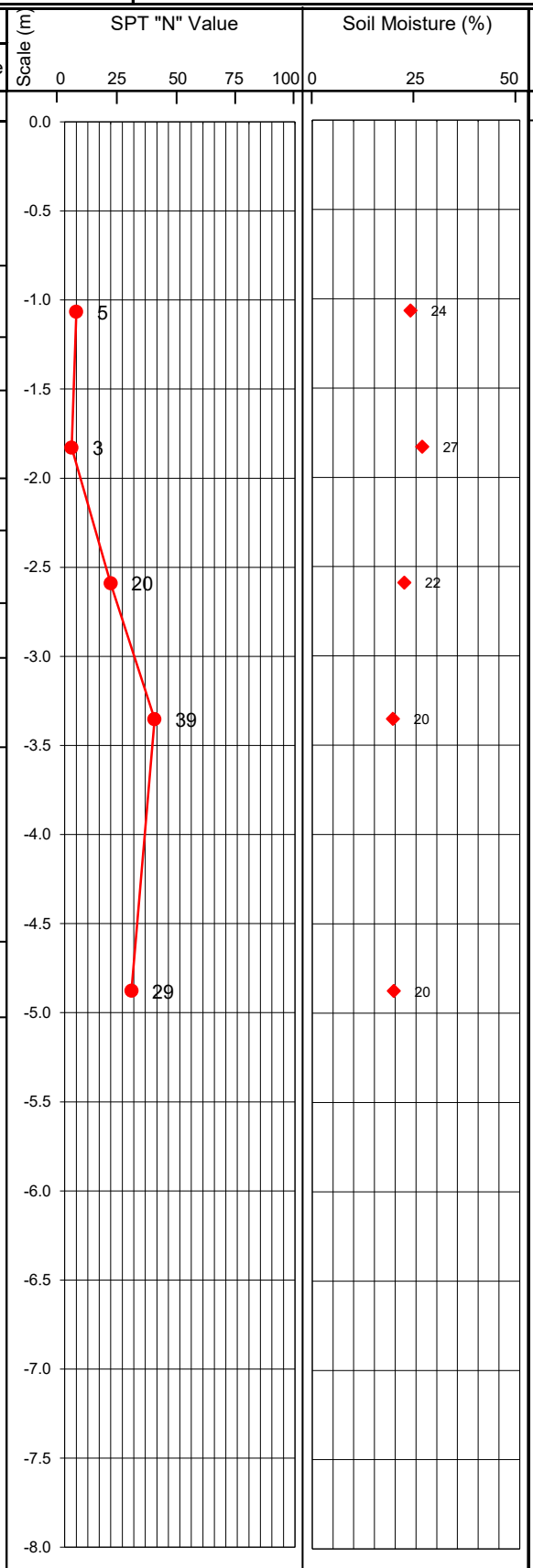
BH 4

Project No.:	17479	Drill Date:	December 15, 2017
Project:	Phase Two Environmental Site Assessment	Drill Method:	[ ] solid stem [x] hollow stem [ ] vibratory
Location:	469 Rice Road, Welland, Ontario	Datum:	TBM: assumed elevation = 100.00 m

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Test Data
Ground Surface		100.0			
FILL: clayey silt, brown, firm, very moist		0.0	1	SS	
		98.5			
SILT (possible native): trace fine sand, brown, very loose, very moist		1.5	2	SS	
		97.4	3	SS	
SILT: homogeneous, trace fine sand, brown, compact to dense, wet 3.2 m to 5.0 m: moist to very moist		2.6	4	SS	
		95.0	5	SS	
BOREHOLE TERMINATED		5.0			



Notes:
1. On completion, borehole open to 4.5 m.
2. Groundwater seepage encountered at 2.3 m.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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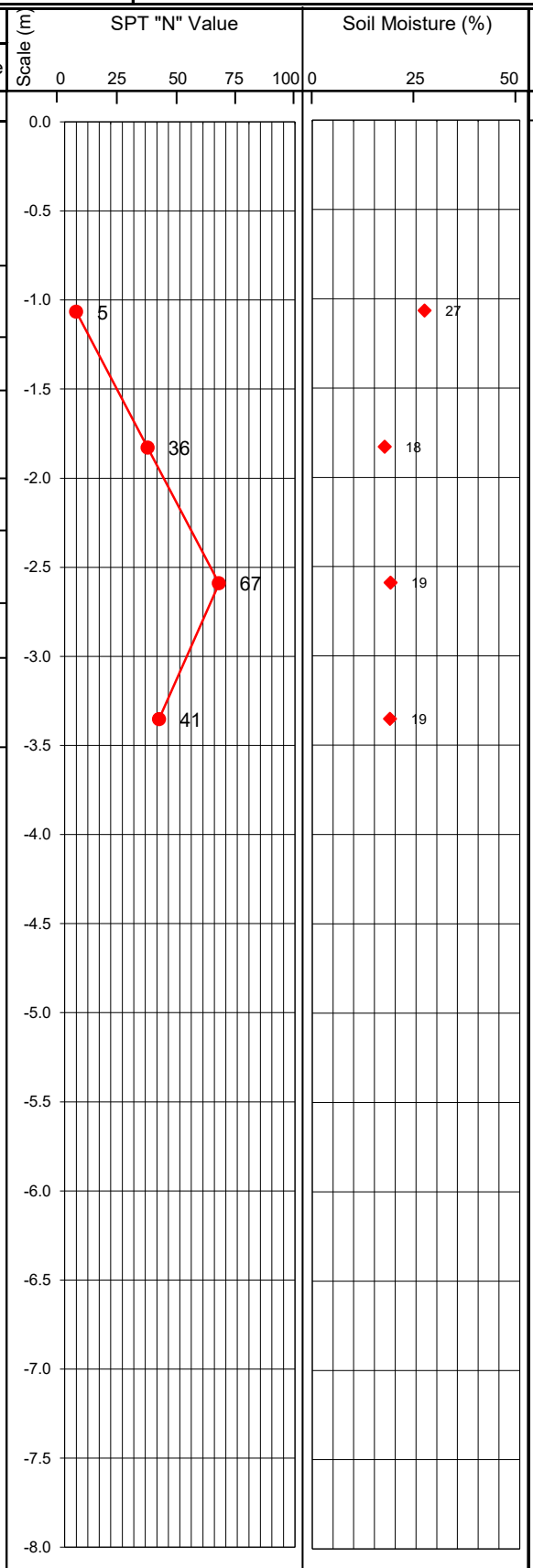
BH 5

Project No.:	17479	Drill Date:	December 15, 2017
Project:	Phase Two Environmental Site Assessment	Drill Method:	[ ] solid stem [x] hollow stem [ ] vibratory
Location:	469 Rice Road, Welland, Ontario	Datum:	TBM: assumed elevation = 100.00 m

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Test Data
Ground Surface		100.0			
FILL: silt, trace gravel, trace sand, brown, loose, very moist		0.0	1	SS	
		98.5			
SILT: homogeneous, trace fine sand, brown, dense to very dense, moist		1.5	2	SS	
			3	SS	
			4	SS	
		96.5			
BOREHOLE TERMINATED		3.5			



Notes:
1. On completion, borehole open to 3.0 m.
2. No groundwater seepage encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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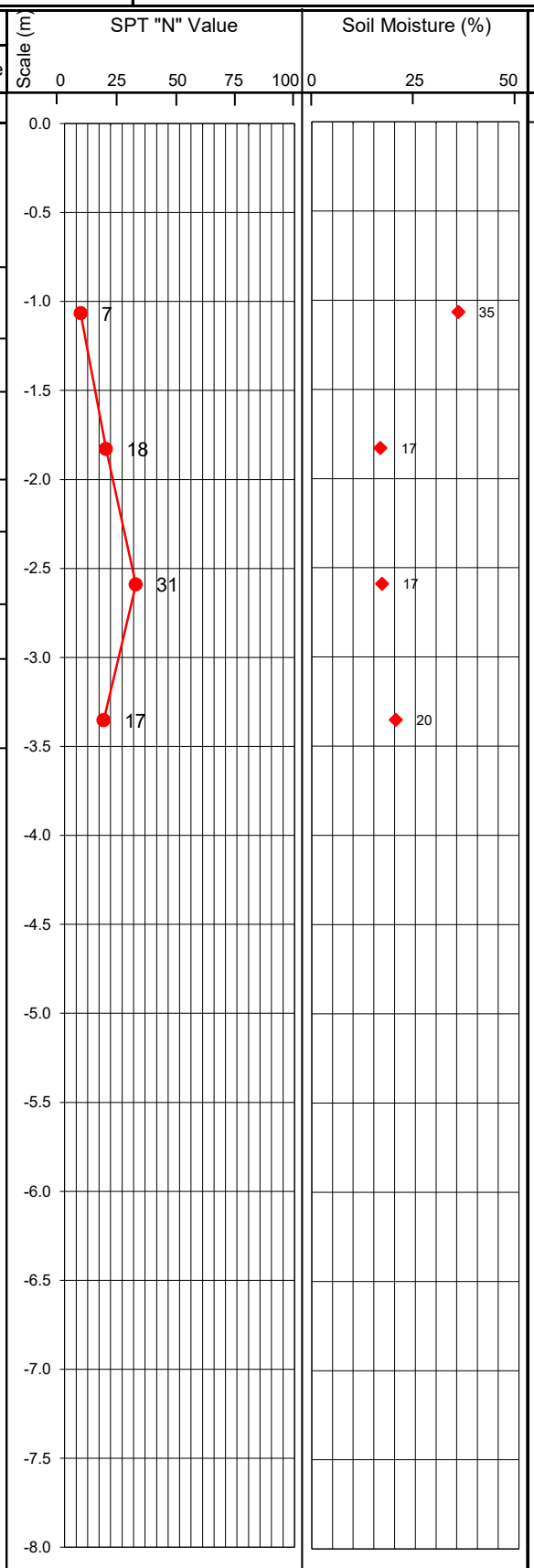
BH 6

Project No.:	17479	Drill Date:	December 15, 2017
Project:	Phase Two Environmental Site Assessment	Drill Method:	[ ] solid stem [x] hollow stem [ ] vibratory
Location:	469 Rice Road, Welland, Ontario	Datum:	TBM: assumed elevation = 100.00 m

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Test Data
Ground Surface		99.7			
FILL: sand and gravel		0.0 99.3			
FILL: clayey silt, trace gravel, trace organics, black and brown, firm, moist		0.45	1	SS	
		98.2			
CLAYEY SILT: trace gravel, trace shale, brown, compact to dense, moist		1.5	2	SS	
			3	SS	
3.0 m to 3.5 m: trace iron staining, brown and grey			4	SS	
		96.2			
BOREHOLE TERMINATED		3.5			



GWL | Monitor Details

Notes:
1. On completion, borehole open to 3.0 m.
2. No groundwater seepage encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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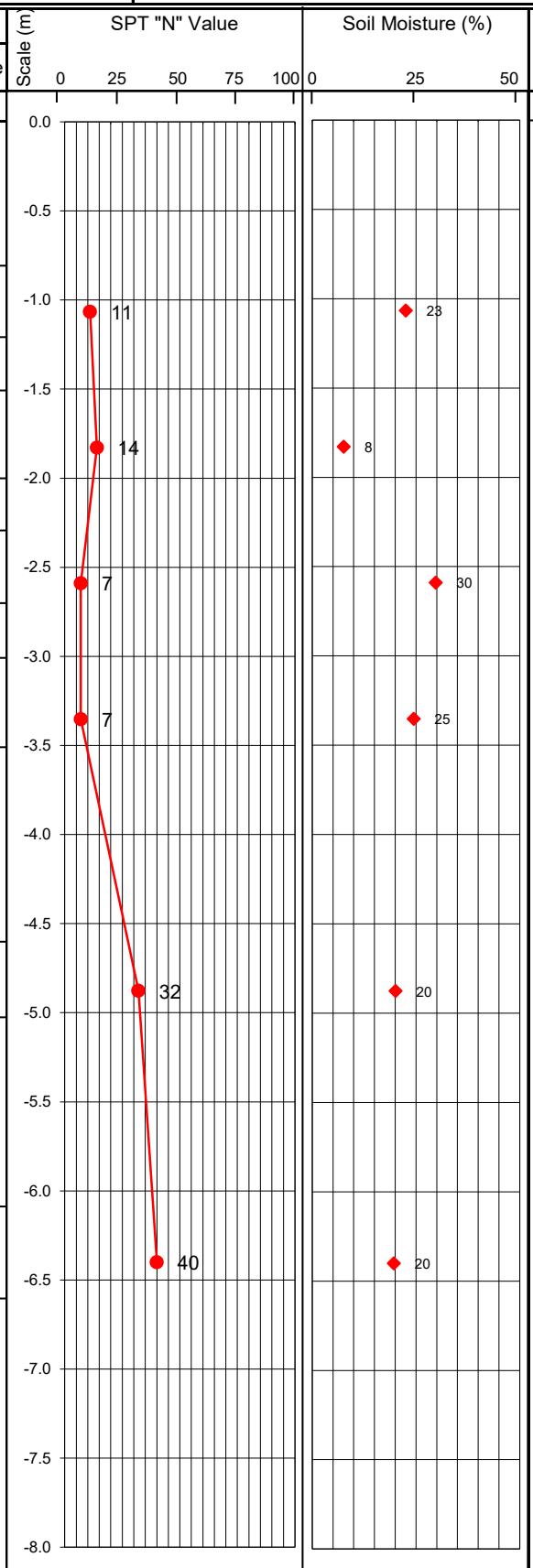
BH 7

Project No.:	17479	Drill Date:	December 15, 2017
Project:	Phase Two Environmental Site Assessment	Drill Method:	[ ] solid stem [x] hollow stem [ ] vibratory
Location:	469 Rice Road, Welland, Ontario	Datum:	TBM: assumed elevation = 100.00 m

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Test Data
Ground Surface		101.2			
±150 mm Topsoil		0.0			
FILL: clayey silt, some gravel, some asphalt, brown, stiff, moist			1	SS	
			2	SS	
			3	SS	
		98.6			
FILL: clayey silt, some organics, black and grey, firm, moist		2.6			
			4	SS	
		97.8			
SILT: homogeneous, trace fine sand, brown, compact to dense, very moist at 3.7 m: wet		3.4			
			5	SS	
			6	SS	
		94.6			
BOREHOLE TERMINATED		6.6			



Notes:
1. On completion, borehole open to 6.0 m.
2. Groundwater seepage encountered at 3.7 m.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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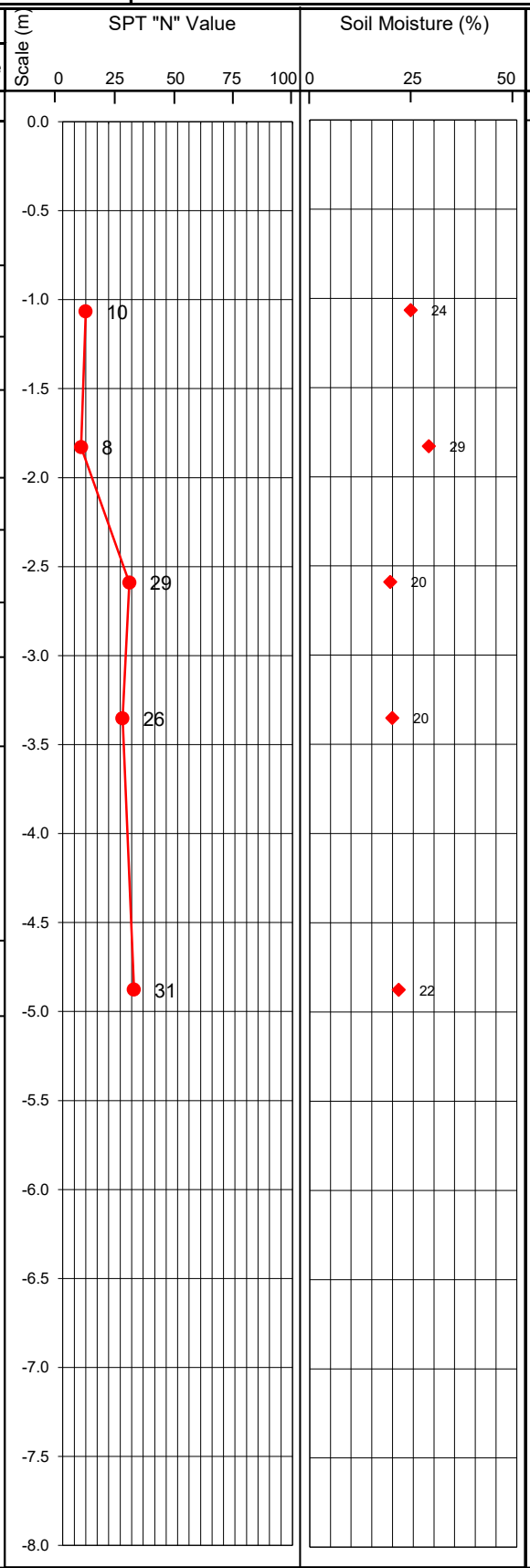
BH 8

Project No.:	17479	Drill Date:	December 15, 2017
Project:	Phase Two Environmental Site Assessment	Drill Method:	[ ] solid stem [x] hollow stem [ ] vibratory
Location:	469 Rice Road, Welland, Ontario	Datum:	TBM: assumed elevation = 100.00 m

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Test Data
Ground Surface		99.2			
FILL: sand and gravel		0.0			
		98.9			
FILL: clayey silt, some gravel, brown, stiff, moist		0.3	1	SS	
		97.7			
CLAYEY SILT (possible native): some organics, black and grey, firm to stiff, moist		1.5	2	SS	
		96.6	3	SS	
SILT: homogeneous, trace fine sand, brown, compact to dense, very moist at 2.9 m: wet		2.6	4	SS	
		94.2	5	SS	
BOREHOLE TERMINATED		5.0			



Notes:
1. On completion, borehole open to 4.5 m.
2. Groundwater seepage encountered at 2.9 m.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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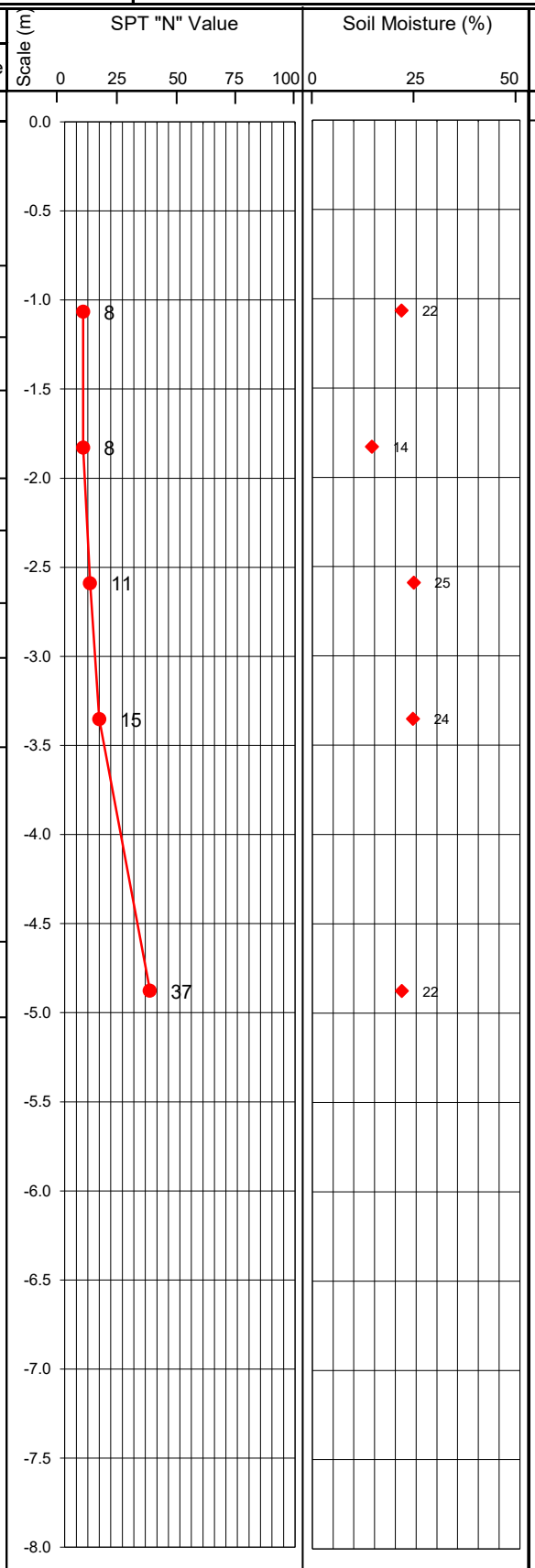
Hamilton, Ontario, Canada, L8W 2E1
Ph: (905) 383-3733 Fax: (905) 383-8433
www.landteklimited.com

LANDTEK LIMITED

BH 9

Project No.:	17479	Drill Date:	December 15, 2017
Project:	Phase Two Environmental Site Assessment	Drill Method:	[ ] solid stem [x] hollow stem [ ] vibratory
Location:	469 Rice Road, Welland, Ontario	Datum:	TBM: assumed elevation = 100.00 m

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Test Data
Ground Surface		99.4			
FILL: silty clay, trace gravel, brown, firm, moist		0.0			
			1	SS	
1.5 m to 2.3 m: some gravel			2	SS	
at 2.1 m: wet		97.1			
SILT: trace fine sand, brown, compact, wet		2.3	3	SS	
3.0 m to 5.0 m: very moist			4	SS	
4.5 m to 5.0 m: dense			5	SS	
		94.4			
BOREHOLE TERMINATED		5.0			



Notes:
1. On completion, borehole open to 4.5 m.
2. Groundwater seepage encountered at 2.1 m.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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APPENDIX H

LABORATORY CERTIFICATES OF ANALYSIS

LANDTEK LIMITED
ATTN: KEVIN ROBERTS
205 NEBO ROAD
UNIT 3
HAMILTON ON L8W2E1

Date Received: 18-DEC-17
Report Date: 27-DEC-17 14:31 (MT)
Version: FINAL

Client Phone: 905-383-3733

Certificate of Analysis

Lab Work Order #: L2036686

Project P.O. #: NOT SUBMITTED
Job Reference: 17479
C of C Numbers: 17-616794
Legal Site Desc:

Mathy Mahadeva
Account Manager

ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit

Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)

(No parameter exceedances)

ANALYTICAL REPORT

Physical Tests - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2036686-1	L2036686-2	L2036686-3	L2036686-4	L2036686-5	L2036686-6	L2036686-7	L2036686-8
				Sample Date	15-DEC-17	15-DEC-17	15-DEC-17	15-DEC-17	15-DEC-17	15-DEC-17	15-DEC-17	15-DEC-17
				Sample ID	BH1 SURFACE	BH1 SS2	BH5 SS1	BH6 SS1	BH7 SURFACE	BH8 SS1	BH8 SS2	BH9 SURFACE
Conductivity	mS/cm	0.7	-			0.270	0.164			0.191		
% Moisture	%	-	-		28.6	18.1	19.9	22.4	27.6	16.5	25.3	41.4
pH	pH units	-	-			7.61	7.55			7.70		

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Cyanides - SOIL

		Guide Limits				
		Lab ID		L2036686-2	L2036686-3	L2036686-6
		Sample Date		15-DEC-17	15-DEC-17	15-DEC-17
		Sample ID		BH1 SS2	BH5 SS1	BH8 SS1
Analyte	**Unit**	**#1**	**#2**			
Cyanide, Weak Acid Diss	ug/g	0.051	-	<0.050	<0.050	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2036686-2 / Sample Date: 15-DEC-17 / Sample ID: BH1 SS2	Lab ID: L2036686-3 / Sample Date: 15-DEC-17 / Sample ID: BH5 SS1	Lab ID: L2036686-6 / Sample Date: 15-DEC-17 / Sample ID: BH8 SS1
SAR	SAR	5	-	0.12	0.36	0.30
Calcium (Ca)	mg/L	-	-	16.3	5.6	7.1
Magnesium (Mg)	mg/L	-	-	4.3	1.3	2.0
Sodium (Na)	mg/L	-	-	2.1	3.7	3.6

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Metals - SOIL

				Lab ID	L2036686-2	L2036686-3	L2036686-6
				Sample Date	15-DEC-17	15-DEC-17	15-DEC-17
				Sample ID	BH1 SS2	BH5 SS1	BH8 SS1
		Guide Limits					
Analyte	Unit	#1	#2				
Antimony (Sb)	ug/g	7.5	-	<1.0	<1.0	<1.0
Arsenic (As)	ug/g	18	-	5.1	3.9	5.2
Barium (Ba)	ug/g	390	-	112	31.9	123
Beryllium (Be)	ug/g	5	-	0.71	<0.50	0.80
Boron (B)	ug/g	120	-	8.7	<5.0	10.8
Boron (B), Hot Water Ext.	ug/g	1.5	-	0.21	<0.10	0.16
Cadmium (Cd)	ug/g	1.2	-	<0.50	<0.50	<0.50
Chromium (Cr)	ug/g	160	-	22.1	11.6	25.7
Cobalt (Co)	ug/g	22	-	11.1	6.4	11.1
Copper (Cu)	ug/g	180	-	23.1	21.6	30.3
Lead (Pb)	ug/g	120	-	12.3	3.9	28.5
Mercury (Hg)	ug/g	1.8	-	0.0297	0.0118	0.0250
Molybdenum (Mo)	ug/g	6.9	-	<1.0	<1.0	<1.0
Nickel (Ni)	ug/g	130	-	23.9	14.4	26.4
Selenium (Se)	ug/g	2.4	-	<1.0	<1.0	<1.0
Silver (Ag)	ug/g	25	-	<0.20	<0.20	<0.20
Thallium (Tl)	ug/g	1	-	<0.50	<0.50	<0.50
Uranium (U)	ug/g	23	-	<1.0	<1.0	<1.0
Vanadium (V)	ug/g	86	-	31.7	19.5	35.3
Zinc (Zn)	ug/g	340	-	55.6	35.2	90.5

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Speciated Metals - SOIL

			Lab ID	L2036686-2	L2036686-3	L2036686-6
			Sample Date	15-DEC-17	15-DEC-17	15-DEC-17
			Sample ID	BH1 SS2	BH5 SS1	BH8 SS1
		Guide Limits				
Analyte	Unit	#1	#2			
Chromium, Hexavalent	ug/g	10	-	<0.20	<0.20	<0.20

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

				Lab ID	L2036686-3	L2036686-4	L2036686-7
				Sample Date	15-DEC-17	15-DEC-17	15-DEC-17
				Sample ID	BH5 SS1	BH6 SS1	BH8 SS2
		Guide Limits					
Analyte	Unit	#1	#2				
Acetone	ug/g	28	-	<0.50	<0.50	<0.50	
Benzene	ug/g	0.17	-	<0.0068	<0.0068	<0.0068	
Bromodichloromethane	ug/g	1.9	-	<0.050	<0.050	<0.050	
Bromoform	ug/g	0.26	-	<0.050	<0.050	<0.050	
Bromomethane	ug/g	0.05	-	<0.050	<0.050	<0.050	
Carbon tetrachloride	ug/g	0.12	-	<0.050	<0.050	<0.050	
Chlorobenzene	ug/g	2.7	-	<0.050	<0.050	<0.050	
Dibromochloromethane	ug/g	2.9	-	<0.050	<0.050	<0.050	
Chloroform	ug/g	0.17	-	<0.050	<0.050	<0.050	
1,2-Dibromoethane	ug/g	0.05	-	<0.050	<0.050	<0.050	
1,2-Dichlorobenzene	ug/g	1.7	-	<0.050	<0.050	<0.050	
1,3-Dichlorobenzene	ug/g	6	-	<0.050	<0.050	<0.050	
1,4-Dichlorobenzene	ug/g	0.097	-	<0.050	<0.050	<0.050	
Dichlorodifluoromethane	ug/g	25	-	<0.050	<0.050	<0.050	
1,1-Dichloroethane	ug/g	0.6	-	<0.050	<0.050	<0.050	
1,2-Dichloroethane	ug/g	0.05	-	<0.050	<0.050	<0.050	
1,1-Dichloroethylene	ug/g	0.05	-	<0.050	<0.050	<0.050	
cis-1,2-Dichloroethylene	ug/g	2.5	-	<0.050	<0.050	<0.050	
trans-1,2-Dichloroethylene	ug/g	0.75	-	<0.050	<0.050	<0.050	
Methylene Chloride	ug/g	0.96	-	<0.050	<0.050	<0.050	
1,2-Dichloropropane	ug/g	0.085	-	<0.050	<0.050	<0.050	
cis-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030	<0.030	
trans-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030	<0.030	
1,3-Dichloropropene (cis & trans)	ug/g	0.081	-	<0.042	<0.042	<0.042	
Ethylbenzene	ug/g	1.6	-	<0.018	<0.018	<0.018	
n-Hexane	ug/g	34	-	<0.050	<0.050	<0.050	
Methyl Ethyl Ketone	ug/g	44	-	<0.50	<0.50	<0.50	
Methyl Isobutyl Ketone	ug/g	4.3	-	<0.50	<0.50	<0.50	
MTBE	ug/g	1.4	-	<0.050	<0.050	<0.050	
Styrene	ug/g	2.2	-	<0.050	<0.050	<0.050	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

		Guide Limits				
Lab ID				L2036686-3	L2036686-4	L2036686-7
Sample Date				15-DEC-17	15-DEC-17	15-DEC-17
Sample ID				BH5 SS1	BH6 SS1	BH8 SS2
Analyte	**Unit**	**#1**	**#2**			
1,1,1,2-Tetrachloroethane	ug/g	0.05	-	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	-	<0.050	<0.050	<0.050
Tetrachloroethylene	ug/g	2.3	-	<0.050	<0.050	<0.050
Toluene	ug/g	6	-	<0.080	<0.080	<0.080
1,1,1-Trichloroethane	ug/g	3.4	-	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	-	<0.050	<0.050	<0.050
Trichloroethylene	ug/g	0.52	-	<0.010	<0.010	<0.010
Trichlorofluoromethane	ug/g	5.8	-	<0.050	<0.050	<0.050
Vinyl chloride	ug/g	0.022	-	<0.020	<0.020	<0.020
o-Xylene	ug/g	-	-	<0.020	<0.020	<0.020
m+p-Xylenes	ug/g	-	-	<0.030	<0.030	<0.030
Xylenes (Total)	ug/g	25	-	<0.050	<0.050	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	93.7	101.3	91.3
Surrogate: 1,4-Difluorobenzene	%	-	-	98.3	106.0	95.6

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Hydrocarbons - SOIL

		Guide Limits				
Lab ID				L2036686-3	L2036686-4	L2036686-7
Sample Date				15-DEC-17	15-DEC-17	15-DEC-17
Sample ID				BH5 SS1	BH6 SS1	BH8 SS2
Analyte	**Unit**	**#1**	**#2**			
F1 (C6-C10)	ug/g	65	-	<5.0	<5.0	<5.0
F1-BTEX	ug/g	65	-	<5.0	<5.0	<5.0
F2 (C10-C16)	ug/g	150	-	<10	<10	<10
F3 (C16-C34)	ug/g	1300	-	<50	<50	<50
F4 (C34-C50)	ug/g	5600	-	<50	<50	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72	<72	<72
Chrom. to baseline at nC50		-	-	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	89.9	93.6	96.4
Surrogate: 3,4-Dichlorotoluene	%	-	-	76.6	77.4	72.5

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Organochlorine Pesticides - SOIL

				Lab ID	L2036686-1	L2036686-5	L2036686-8
				Sample Date	15-DEC-17	15-DEC-17	15-DEC-17
				Sample ID	BH1 SURFACE	BH7 SURFACE	BH9 SURFACE
		Guide Limits					
Analyte	Unit	#1	#2				
Aldrin	ug/g	0.05	-	<0.020	<0.020	<0.020
gamma-hexachlorocyclohexane	ug/g	0.063	-	<0.010	<0.010	<0.010
a-chlordane	ug/g	-	-	<0.020	<0.020	<0.020
Chlordane (Total)	ug/g	0.05	-	<0.028	<0.028	<0.028
g-chlordane	ug/g	-	-	<0.020	<0.020	<0.020
op-DDD	ug/g	-	-	<0.020	<0.020	<0.020
pp-DDD	ug/g	-	-	<0.020	<0.020	<0.020
Total DDD	ug/g	3.3	-	<0.028	<0.028	<0.028
o,p-DDE	ug/g	-	-	<0.020	<0.020	<0.020
pp-DDE	ug/g	-	-	<0.020	<0.020	<0.020
Total DDE	ug/g	0.33	-	<0.028	<0.028	<0.028
op-DDT	ug/g	-	-	<0.020	<0.020	<0.020
pp-DDT	ug/g	-	-	<0.020	<0.020	<0.020
Total DDT	ug/g	1.4	-	<0.028	<0.028	<0.028
Dieldrin	ug/g	0.05	-	<0.020	<0.020	<0.020
Endosulfan I	ug/g	-	-	<0.020	<0.020	<0.020
Endosulfan II	ug/g	-	-	<0.020	<0.020	<0.020
Endosulfan (Total)	ug/g	0.04	-	<0.028	<0.028	<0.028
Endrin	ug/g	0.04	-	<0.020	<0.020	<0.020
Heptachlor	ug/g	0.15	-	<0.020	<0.020	<0.020
Heptachlor Epoxide	ug/g	0.05	-	<0.020	<0.020	<0.020
Hexachlorobenzene	ug/g	0.52	-	<0.010	<0.010	<0.010
Hexachlorobutadiene	ug/g	0.014	-	<0.010	<0.010	<0.010
Hexachloroethane	ug/g	0.07	-	<0.010	<0.010	<0.010
Methoxychlor	ug/g	0.13	-	<0.020	<0.020	<0.020
Surrogate: 2-Fluorobiphenyl	%	-	-	99.7	97.8	95.6
Surrogate: d14-Terphenyl	%	-	-	82.1	80.4	80.3

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PEST-OC-511-WT	Soil	OC Pesticides-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil sample is extracted in a solvent, after extraction a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

17-616794

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R3916769								
WG2687633-4 DUP		**L2035969-10**						
Boron (B), Hot Water Ext.		0.33	0.34		ug/g	3.0	30	20-DEC-17
WG2687633-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			86.7		%		70-130	20-DEC-17
WG2687633-3 LCS								
Boron (B), Hot Water Ext.			111.7		%		70-130	20-DEC-17
WG2687633-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	20-DEC-17
CN-WAD-R511-WT	**Soil**							
Batch R3916633								
WG2687246-3 DUP		**L2037085-2**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	20-DEC-17
WG2687246-2 LCS								
Cyanide, Weak Acid Diss			97.9		%		80-120	20-DEC-17
WG2687246-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	20-DEC-17
WG2687246-4 MS		**L2037085-2**						
Cyanide, Weak Acid Diss			105.7		%		70-130	20-DEC-17
CR-CR6-IC-WT	**Soil**							
Batch R3916483								
WG2687239-3 CRM		**WT-SQC012**						
Chromium, Hexavalent			87.3		%		70-130	20-DEC-17
WG2687239-4 DUP		**L2036686-3**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	20-DEC-17
WG2687239-2 LCS								
Chromium, Hexavalent			92.8		%		80-120	20-DEC-17
WG2687239-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	20-DEC-17
EC-WT	**Soil**							
Batch R3916613								
WG2687637-4 DUP		**WG2687637-3**						
Conductivity		0.273	0.286		mS/cm	4.7	20	20-DEC-17
WG2687896-1 LCS								
Conductivity			99.1		%		90-110	20-DEC-17
WG2687637-1 MB								
Conductivity			<0.0040		mS/cm		0.004	20-DEC-17
F1-HS-511-WT	**Soil**							

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R3915770								
WG2686085-4 DUP		**WG2686085-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	19-DEC-17
WG2686085-2 LCS								
F1 (C6-C10)			98.0		%		80-120	19-DEC-17
WG2686085-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	19-DEC-17
Surrogate: 3,4-Dichlorotoluene			87.7		%		60-140	19-DEC-17
WG2686085-5 MS		**WG2686085-3**						
F1 (C6-C10)			103.4		%		60-140	19-DEC-17
WG2686085-7 MS		**WG2686085-6**						
F1 (C6-C10)			95.0		%		60-140	19-DEC-17
F2-F4-511-WT	**Soil**							
Batch R3916615								
WG2687121-4 DUP		**WG2687121-3**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	20-DEC-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	20-DEC-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	20-DEC-17
WG2687121-2 LCS								
F2 (C10-C16)			98.4		%		80-120	20-DEC-17
F3 (C16-C34)			102.0		%		80-120	20-DEC-17
F4 (C34-C50)			107.4		%		80-120	20-DEC-17
WG2687121-1 MB								
F2 (C10-C16)			<10		ug/g		10	20-DEC-17
F3 (C16-C34)			<50		ug/g		50	20-DEC-17
F4 (C34-C50)			<50		ug/g		50	20-DEC-17
Surrogate: 2-Bromobenzotrifluoride			90.6		%		60-140	20-DEC-17
WG2687121-5 MS		**WG2687121-3**						
F2 (C10-C16)			104.8		%		60-140	20-DEC-17
F3 (C16-C34)			104.9		%		60-140	20-DEC-17
F4 (C34-C50)			106.6		%		60-140	20-DEC-17
HG-200.2-CVAA-WT	**Soil**							
Batch R3916515								
WG2687613-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			103.3		%		70-130	20-DEC-17
WG2687613-6 DUP		**WG2687613-5**						
Mercury (Hg)		0.0074	0.0071		ug/g	3.7	40	20-DEC-17
WG2687613-3 LCS								

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R3916515								
WG2687613-3 LCS								
Mercury (Hg)			109.0		%		80-120	20-DEC-17
WG2687613-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	20-DEC-17
Batch R3916518								
WG2687616-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			96.9		%		70-130	20-DEC-17
WG2687616-6 DUP		**WG2687616-5**						
Mercury (Hg)		0.0902	0.0963		ug/g	6.5	40	20-DEC-17
WG2687616-3 LCS								
Mercury (Hg)			115.5		%		80-120	20-DEC-17
WG2687616-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	20-DEC-17
MET-200.2-CCMS-WT	**Soil**							
Batch R3916740								
WG2687613-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			108.0		%		70-130	20-DEC-17
Arsenic (As)			106.9		%		70-130	20-DEC-17
Barium (Ba)			105.1		%		70-130	20-DEC-17
Beryllium (Be)			102.9		%		70-130	20-DEC-17
Boron (B)			3.4		mg/kg		0-8.2	20-DEC-17
Cadmium (Cd)			111.7		%		70-130	20-DEC-17
Chromium (Cr)			115.0		%		70-130	20-DEC-17
Cobalt (Co)			107.2		%		70-130	20-DEC-17
Copper (Cu)			112.6		%		70-130	20-DEC-17
Lead (Pb)			100.1		%		70-130	20-DEC-17
Molybdenum (Mo)			115.6		%		70-130	20-DEC-17
Nickel (Ni)			108.4		%		70-130	20-DEC-17
Selenium (Se)			0.35		mg/kg		0.11-0.51	20-DEC-17
Silver (Ag)			0.23		mg/kg		0.13-0.33	20-DEC-17
Thallium (Tl)			0.120		mg/kg		0.077-0.18	20-DEC-17
Uranium (U)			101.4		%		70-130	20-DEC-17
Vanadium (V)			111.4		%		70-130	20-DEC-17
Zinc (Zn)			107.7		%		70-130	20-DEC-17
WG2687613-6 DUP		**WG2687613-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	20-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3916740								
WG2687613-6 DUP		**WG2687613-5**						
Arsenic (As)		2.01	1.82		ug/g	10	30	20-DEC-17
Barium (Ba)		14.1	12.8		ug/g	9.4	40	20-DEC-17
Beryllium (Be)		0.17	0.16		ug/g	3.1	30	20-DEC-17
Boron (B)		7.6	6.5		ug/g	15	30	20-DEC-17
Cadmium (Cd)		0.072	0.068		ug/g	5.2	30	20-DEC-17
Chromium (Cr)		7.86	6.77		ug/g	15	30	20-DEC-17
Cobalt (Co)		2.72	2.46		ug/g	9.9	30	20-DEC-17
Copper (Cu)		6.76	6.26		ug/g	7.6	30	20-DEC-17
Lead (Pb)		6.30	6.01		ug/g	4.7	40	20-DEC-17
Molybdenum (Mo)		0.27	0.26		ug/g	3.4	40	20-DEC-17
Nickel (Ni)		5.81	5.36		ug/g	8.2	30	20-DEC-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	20-DEC-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	20-DEC-17
Thallium (Tl)		<0.050	<0.050	RPD-NA	ug/g	N/A	30	20-DEC-17
Uranium (U)		0.405	0.398		ug/g	1.9	30	20-DEC-17
Vanadium (V)		15.4	14.0		ug/g	9.9	30	20-DEC-17
Zinc (Zn)		24.9	22.8		ug/g	9.0	30	20-DEC-17
WG2687613-4 LCS								
Antimony (Sb)			100.4		%		80-120	20-DEC-17
Arsenic (As)			91.5		%		80-120	20-DEC-17
Barium (Ba)			87.0		%		80-120	20-DEC-17
Beryllium (Be)			95.7		%		80-120	20-DEC-17
Boron (B)			94.1		%		80-120	20-DEC-17
Cadmium (Cd)			96.0		%		80-120	20-DEC-17
Chromium (Cr)			96.0		%		80-120	20-DEC-17
Cobalt (Co)			93.3		%		80-120	20-DEC-17
Copper (Cu)			94.1		%		80-120	20-DEC-17
Lead (Pb)			94.6		%		80-120	20-DEC-17
Molybdenum (Mo)			96.7		%		80-120	20-DEC-17
Nickel (Ni)			95.1		%		80-120	20-DEC-17
Selenium (Se)			94.9		%		80-120	20-DEC-17
Silver (Ag)			94.9		%		80-120	20-DEC-17
Thallium (Tl)			92.2		%		80-120	20-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3916740								
WG2687613-4 LCS								
Uranium (U)			92.5		%		80-120	20-DEC-17
Vanadium (V)			97.1		%		80-120	20-DEC-17
Zinc (Zn)			86.0		%		80-120	20-DEC-17
WG2687613-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	20-DEC-17
Arsenic (As)			<0.10		mg/kg		0.1	20-DEC-17
Barium (Ba)			<0.50		mg/kg		0.5	20-DEC-17
Beryllium (Be)			<0.10		mg/kg		0.1	20-DEC-17
Boron (B)			<5.0		mg/kg		5	20-DEC-17
Cadmium (Cd)			<0.020		mg/kg		0.02	20-DEC-17
Chromium (Cr)			<0.50		mg/kg		0.5	20-DEC-17
Cobalt (Co)			<0.10		mg/kg		0.1	20-DEC-17
Copper (Cu)			<0.50		mg/kg		0.5	20-DEC-17
Lead (Pb)			<0.50		mg/kg		0.5	20-DEC-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	20-DEC-17
Nickel (Ni)			<0.50		mg/kg		0.5	20-DEC-17
Selenium (Se)			<0.20		mg/kg		0.2	20-DEC-17
Silver (Ag)			<0.10		mg/kg		0.1	20-DEC-17
Thallium (Tl)			<0.050		mg/kg		0.05	20-DEC-17
Uranium (U)			<0.050		mg/kg		0.05	20-DEC-17
Vanadium (V)			<0.20		mg/kg		0.2	20-DEC-17
Zinc (Zn)			<2.0		mg/kg		2	20-DEC-17
Batch R3916745								
WG2687616-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			97.1		%		70-130	20-DEC-17
Arsenic (As)			98.2		%		70-130	20-DEC-17
Barium (Ba)			95.0		%		70-130	20-DEC-17
Beryllium (Be)			107.7		%		70-130	20-DEC-17
Boron (B)			3.3		mg/kg		0-8.2	20-DEC-17
Cadmium (Cd)			96.8		%		70-130	20-DEC-17
Chromium (Cr)			102.3		%		70-130	20-DEC-17
Cobalt (Co)			97.1		%		70-130	20-DEC-17
Copper (Cu)			99.1		%		70-130	20-DEC-17
Lead (Pb)			92.0		%		70-130	20-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3916745								
WG2687616-2 CRM		**WT-CANMET-TILL1**						
Molybdenum (Mo)			103.3		%		70-130	20-DEC-17
Nickel (Ni)			98.0		%		70-130	20-DEC-17
Selenium (Se)			0.30		mg/kg		0.11-0.51	20-DEC-17
Silver (Ag)			0.21		mg/kg		0.13-0.33	20-DEC-17
Thallium (Tl)			0.116		mg/kg		0.077-0.18	20-DEC-17
Uranium (U)			91.9		%		70-130	20-DEC-17
Vanadium (V)			100.6		%		70-130	20-DEC-17
Zinc (Zn)			97.1		%		70-130	20-DEC-17
WG2687616-6 DUP		**WG2687616-5**						
Antimony (Sb)		0.57	0.56		ug/g	2.1	30	20-DEC-17
Arsenic (As)		7.31	6.79		ug/g	7.4	30	20-DEC-17
Barium (Ba)		55.6	60.4		ug/g	8.3	40	20-DEC-17
Beryllium (Be)		0.40	0.40		ug/g	0.3	30	20-DEC-17
Boron (B)		8.4	9.0		ug/g	6.8	30	20-DEC-17
Cadmium (Cd)		0.269	0.305		ug/g	13	30	20-DEC-17
Chromium (Cr)		16.6	17.4		ug/g	4.7	30	20-DEC-17
Cobalt (Co)		5.32	5.36		ug/g	0.8	30	20-DEC-17
Copper (Cu)		41.8	37.2		ug/g	12	30	20-DEC-17
Lead (Pb)		33.6	33.8		ug/g	0.6	40	20-DEC-17
Molybdenum (Mo)		0.68	0.80		ug/g	16	40	20-DEC-17
Nickel (Ni)		12.1	12.5		ug/g	3.3	30	20-DEC-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	20-DEC-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	20-DEC-17
Thallium (Tl)		0.092	0.090		ug/g	1.9	30	20-DEC-17
Uranium (U)		0.548	0.573		ug/g	4.5	30	20-DEC-17
Vanadium (V)		24.1	25.7		ug/g	6.3	30	20-DEC-17
Zinc (Zn)		108	111		ug/g	3.0	30	20-DEC-17
WG2687616-4 LCS								
Antimony (Sb)			101.3		%		80-120	20-DEC-17
Arsenic (As)			89.9		%		80-120	20-DEC-17
Barium (Ba)			85.0		%		80-120	20-DEC-17
Beryllium (Be)			93.1		%		80-120	20-DEC-17
Boron (B)			92.0		%		80-120	20-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3916745								
WG2687616-4 LCS								
Cadmium (Cd)			94.3		%		80-120	20-DEC-17
Chromium (Cr)			92.8		%		80-120	20-DEC-17
Cobalt (Co)			88.9		%		80-120	20-DEC-17
Copper (Cu)			88.8		%		80-120	20-DEC-17
Lead (Pb)			93.7		%		80-120	20-DEC-17
Molybdenum (Mo)			94.4		%		80-120	20-DEC-17
Nickel (Ni)			89.0		%		80-120	20-DEC-17
Selenium (Se)			92.3		%		80-120	20-DEC-17
Silver (Ag)			90.1		%		80-120	20-DEC-17
Thallium (Tl)			90.1		%		80-120	20-DEC-17
Uranium (U)			89.1		%		80-120	20-DEC-17
Vanadium (V)			92.9		%		80-120	20-DEC-17
Zinc (Zn)			85.1		%		80-120	20-DEC-17
WG2687616-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	20-DEC-17
Arsenic (As)			<0.10		mg/kg		0.1	20-DEC-17
Barium (Ba)			<0.50		mg/kg		0.5	20-DEC-17
Beryllium (Be)			<0.10		mg/kg		0.1	20-DEC-17
Boron (B)			<5.0		mg/kg		5	20-DEC-17
Cadmium (Cd)			<0.020		mg/kg		0.02	20-DEC-17
Chromium (Cr)			<0.50		mg/kg		0.5	20-DEC-17
Cobalt (Co)			<0.10		mg/kg		0.1	20-DEC-17
Copper (Cu)			<0.50		mg/kg		0.5	20-DEC-17
Lead (Pb)			<0.50		mg/kg		0.5	20-DEC-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	20-DEC-17
Nickel (Ni)			<0.50		mg/kg		0.5	20-DEC-17
Selenium (Se)			<0.20		mg/kg		0.2	20-DEC-17
Silver (Ag)			<0.10		mg/kg		0.1	20-DEC-17
Thallium (Tl)			<0.050		mg/kg		0.05	20-DEC-17
Uranium (U)			<0.050		mg/kg		0.05	20-DEC-17
Vanadium (V)			<0.20		mg/kg		0.2	20-DEC-17
Zinc (Zn)			<2.0		mg/kg		2	20-DEC-17
MOISTURE-WT	**Soil**							

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R3916317								
WG2687252-3 DUP		**L2034927-7**						
% Moisture		4.55	4.40		%	3.2	20	20-DEC-17
WG2687252-2 LCS								
% Moisture			99.3		%		90-110	20-DEC-17
WG2687252-1 MB								
% Moisture			<0.10		%		0.1	20-DEC-17
Batch R3916319								
WG2687523-3 DUP		**L2037071-1**						
% Moisture		5.51	6.57		%	18	20	19-DEC-17
WG2687523-2 LCS								
% Moisture			99.6		%		90-110	19-DEC-17
WG2687523-1 MB								
% Moisture			<0.10		%		0.1	19-DEC-17
PEST-OC-511-WT	**Soil**							
Batch R3919875								
WG2687766-4 DUP		**WG2687766-3**						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
Dieldrin		<0.020	0.040	RPD-NA	ug/g	N/A	40	27-DEC-17
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	27-DEC-17
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	27-DEC-17
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	27-DEC-17
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	27-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	**Soil**							
Batch R3919875								
WG2687766-4 DUP		**WG2687766-3**						
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	27-DEC-17
WG2687766-2 LCS								
Aldrin			138.0		%		50-140	27-DEC-17
a-chlordane			99.0		%		50-140	27-DEC-17
g-chlordane			109.6		%		50-140	27-DEC-17
op-DDD			116.1		%		50-140	27-DEC-17
pp-DDD			138.7		%		50-140	27-DEC-17
o,p-DDE			89.6		%		50-140	27-DEC-17
pp-DDE			96.5		%		50-140	27-DEC-17
op-DDT			111.0		%		50-140	27-DEC-17
pp-DDT			140.0		%		50-140	27-DEC-17
Dieldrin			118.0		%		50-140	27-DEC-17
Endosulfan I			114.1		%		50-140	27-DEC-17
Endosulfan II			127.7		%		50-140	27-DEC-17
Endrin			116.2		%		50-140	27-DEC-17
gamma-hexachlorocyclohexane			117.8		%		50-140	27-DEC-17
Heptachlor			115.3		%		50-140	27-DEC-17
Heptachlor Epoxide			121.4		%		50-140	27-DEC-17
Hexachlorobenzene			103.9		%		50-140	27-DEC-17
Hexachlorobutadiene			99.9		%		50-140	27-DEC-17
Hexachloroethane			151.6	LCS-H	%		50-140	27-DEC-17
Methoxychlor			103.1		%		50-140	27-DEC-17
WG2687766-1 MB								
Aldrin			<0.020		ug/g		0.02	27-DEC-17
a-chlordane			<0.020		ug/g		0.02	27-DEC-17
g-chlordane			<0.020		ug/g		0.02	27-DEC-17
op-DDD			<0.020		ug/g		0.02	27-DEC-17
pp-DDD			<0.020		ug/g		0.02	27-DEC-17
o,p-DDE			<0.020		ug/g		0.02	27-DEC-17
pp-DDE			<0.020		ug/g		0.02	27-DEC-17
op-DDT			<0.020		ug/g		0.02	27-DEC-17
pp-DDT			<0.020		ug/g		0.02	27-DEC-17
Dieldrin			<0.020		ug/g		0.02	27-DEC-17
Endosulfan I			<0.020		ug/g		0.02	27-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	**Soil**							
Batch R3919875								
WG2687766-1 MB								
Endosulfan II			<0.020		ug/g		0.02	27-DEC-17
Endrin			<0.020		ug/g		0.02	27-DEC-17
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	27-DEC-17
Heptachlor			<0.020		ug/g		0.02	27-DEC-17
Heptachlor Epoxide			<0.020		ug/g		0.02	27-DEC-17
Hexachlorobenzene			<0.010		ug/g		0.01	27-DEC-17
Hexachlorobutadiene			<0.010		ug/g		0.01	27-DEC-17
Hexachloroethane			<0.010		ug/g		0.01	27-DEC-17
Methoxychlor			<0.020		ug/g		0.02	27-DEC-17
Surrogate: 2-Fluorobiphenyl			104.2		%		50-140	27-DEC-17
Surrogate: d14-Terphenyl			88.7		%		50-140	27-DEC-17
WG2687766-5 MS		**WG2687766-3**						
a-chlordane			86.4		%		50-140	27-DEC-17
g-chlordane			95.3		%		50-140	27-DEC-17
op-DDD			94.5		%		50-140	27-DEC-17
pp-DDD			110.8		%		50-140	27-DEC-17
o,p-DDE			76.9		%		50-140	27-DEC-17
pp-DDE			83.4		%		50-140	27-DEC-17
op-DDT			98.8		%		50-140	27-DEC-17
Dieldrin			114.3		%		50-140	27-DEC-17
Endosulfan I			96.9		%		50-140	27-DEC-17
Endosulfan II			103.9		%		50-140	27-DEC-17
Endrin			137.1		%		50-140	27-DEC-17
gamma-hexachlorocyclohexane			113.0		%		50-140	27-DEC-17
Heptachlor Epoxide			106.7		%		50-140	27-DEC-17
Hexachlorobenzene			102.7		%		50-140	27-DEC-17
Hexachlorobutadiene			95.5		%		50-140	27-DEC-17
Hexachloroethane			137.6		%		50-140	27-DEC-17

COMMENTS: RRQC: Matrix spike recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.

WG2687766-5 MS		**WG2687766-3**						
Aldrin			125.2		%		50-140	27-DEC-17
pp-DDT			85.1		%		50-140	27-DEC-17
Heptachlor			103.7		%		50-140	27-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	**Soil**							
Batch R3919875								
WG2687766-5 MS		**WG2687766-3**						
Methoxychlor			93.2		%		50-140	27-DEC-17
PH-WT	**Soil**							
Batch R3916620								
WG2687248-1 DUP		**L2037085-2**						
pH		8.19	8.01	J	pH units	0.18	0.3	20-DEC-17
WG2687875-1 LCS								
pH			6.99		pH units		6.9-7.1	20-DEC-17
SAR-R511-WT	**Soil**							
Batch R3916768								
WG2687637-4 DUP		**WG2687637-3**						
Calcium (Ca)		9.8	9.7		mg/L	0.5	30	20-DEC-17
Sodium (Na)		45.9	46.1		mg/L	0.3	30	20-DEC-17
Magnesium (Mg)		10.4	10.4		mg/L	0.7	30	20-DEC-17
WG2687637-2 IRM		**WT SAR1**						
Calcium (Ca)			76.0		%		70-130	20-DEC-17
Sodium (Na)			109.0		%		70-130	20-DEC-17
Magnesium (Mg)			84.9		%		70-130	20-DEC-17
WG2687637-1 MB								
Calcium (Ca)			<1.0		mg/L		1	20-DEC-17
Sodium (Na)			<1.0		mg/L		1	20-DEC-17
Magnesium (Mg)			<1.0		mg/L		1	20-DEC-17
VOC-511-HS-WT	**Soil**							
Batch R3915770								
WG2686085-4 DUP		**WG2686085-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3915770								
WG2686085-4 DUP		**WG2686085-3**						
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	19-DEC-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	19-DEC-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	19-DEC-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	19-DEC-17
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	19-DEC-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	19-DEC-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	19-DEC-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-DEC-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	19-DEC-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	19-DEC-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	19-DEC-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-DEC-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-DEC-17
WG2686085-2 LCS								
1,1,1,2-Tetrachloroethane			104.7		%		60-130	19-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3915770								
WG2686085-2 LCS								
1,1,2,2-Tetrachloroethane			99.9		%		60-130	19-DEC-17
1,1,1-Trichloroethane			110.3		%		60-130	19-DEC-17
1,1,2-Trichloroethane			104.6		%		60-130	19-DEC-17
1,1-Dichloroethane			108.0		%		60-130	19-DEC-17
1,1-Dichloroethylene			96.6		%		60-130	19-DEC-17
1,2-Dibromoethane			101.4		%		70-130	19-DEC-17
1,2-Dichlorobenzene			107.4		%		70-130	19-DEC-17
1,2-Dichloroethane			105.4		%		60-130	19-DEC-17
1,2-Dichloropropane			108.8		%		70-130	19-DEC-17
1,3-Dichlorobenzene			107.4		%		70-130	19-DEC-17
1,4-Dichlorobenzene			109.5		%		70-130	19-DEC-17
Acetone			103.1		%		60-140	19-DEC-17
Benzene			109.5		%		70-130	19-DEC-17
Bromodichloromethane			103.4		%		50-140	19-DEC-17
Bromoform			104.6		%		70-130	19-DEC-17
Bromomethane			103.1		%		50-140	19-DEC-17
Carbon tetrachloride			107.0		%		70-130	19-DEC-17
Chlorobenzene			108.3		%		70-130	19-DEC-17
Chloroform			108.5		%		70-130	19-DEC-17
cis-1,2-Dichloroethylene			107.7		%		70-130	19-DEC-17
cis-1,3-Dichloropropene			110.5		%		70-130	19-DEC-17
Dibromochloromethane			105.5		%		60-130	19-DEC-17
Dichlorodifluoromethane			76.6		%		50-140	19-DEC-17
Ethylbenzene			104.3		%		70-130	19-DEC-17
n-Hexane			113.4		%		70-130	19-DEC-17
Methylene Chloride			108.4		%		70-130	19-DEC-17
MTBE			104.4		%		70-130	19-DEC-17
m+p-Xylenes			106.5		%		70-130	19-DEC-17
Methyl Ethyl Ketone			107.7		%		60-140	19-DEC-17
Methyl Isobutyl Ketone			103.1		%		60-140	19-DEC-17
o-Xylene			105.0		%		70-130	19-DEC-17
Styrene			104.6		%		70-130	19-DEC-17
Tetrachloroethylene			106.6		%		60-130	19-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3915770								
WG2686085-2 LCS								
Toluene			103.8		%		70-130	19-DEC-17
trans-1,2-Dichloroethylene			107.9		%		60-130	19-DEC-17
trans-1,3-Dichloropropene			108.9		%		70-130	19-DEC-17
Trichloroethylene			110.6		%		60-130	19-DEC-17
Trichlorofluoromethane			107.6		%		50-140	19-DEC-17
Vinyl chloride			101.9		%		60-140	19-DEC-17
WG2686085-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	19-DEC-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	19-DEC-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	19-DEC-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	19-DEC-17
1,1-Dichloroethane			<0.050		ug/g		0.05	19-DEC-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	19-DEC-17
1,2-Dibromoethane			<0.050		ug/g		0.05	19-DEC-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	19-DEC-17
1,2-Dichloroethane			<0.050		ug/g		0.05	19-DEC-17
1,2-Dichloropropane			<0.050		ug/g		0.05	19-DEC-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	19-DEC-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	19-DEC-17
Acetone			<0.50		ug/g		0.5	19-DEC-17
Benzene			<0.0068		ug/g		0.0068	19-DEC-17
Bromodichloromethane			<0.050		ug/g		0.05	19-DEC-17
Bromoform			<0.050		ug/g		0.05	19-DEC-17
Bromomethane			<0.050		ug/g		0.05	19-DEC-17
Carbon tetrachloride			<0.050		ug/g		0.05	19-DEC-17
Chlorobenzene			<0.050		ug/g		0.05	19-DEC-17
Chloroform			<0.050		ug/g		0.05	19-DEC-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	19-DEC-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	19-DEC-17
Dibromochloromethane			<0.050		ug/g		0.05	19-DEC-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	19-DEC-17
Ethylbenzene			<0.018		ug/g		0.018	19-DEC-17
n-Hexane			<0.050		ug/g		0.05	19-DEC-17
Methylene Chloride			<0.050		ug/g		0.05	19-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3915770								
WG2686085-1 MB								
MTBE			<0.050		ug/g		0.05	19-DEC-17
m+p-Xylenes			<0.030		ug/g		0.03	19-DEC-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	19-DEC-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	19-DEC-17
o-Xylene			<0.020		ug/g		0.02	19-DEC-17
Styrene			<0.050		ug/g		0.05	19-DEC-17
Tetrachloroethylene			<0.050		ug/g		0.05	19-DEC-17
Toluene			<0.080		ug/g		0.08	19-DEC-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	19-DEC-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	19-DEC-17
Trichloroethylene			<0.010		ug/g		0.01	19-DEC-17
Trichlorofluoromethane			<0.050		ug/g		0.05	19-DEC-17
Vinyl chloride			<0.020		ug/g		0.02	19-DEC-17
Surrogate: 1,4-Difluorobenzene			98.2		%		50-140	19-DEC-17
Surrogate: 4-Bromofluorobenzene			93.4		%		50-140	19-DEC-17
WG2686085-5 MS		**WG2686085-3**						
1,1,1,2-Tetrachloroethane			96.7		%		50-140	19-DEC-17
1,1,2,2-Tetrachloroethane			94.8		%		50-140	19-DEC-17
1,1,1-Trichloroethane			100.5		%		50-140	19-DEC-17
1,1,2-Trichloroethane			97.4		%		50-140	19-DEC-17
1,1-Dichloroethane			98.9		%		50-140	19-DEC-17
1,1-Dichloroethylene			88.0		%		50-140	19-DEC-17
1,2-Dibromoethane			94.7		%		50-140	19-DEC-17
1,2-Dichlorobenzene			95.5		%		50-140	19-DEC-17
1,2-Dichloroethane			94.5		%		50-140	19-DEC-17
1,2-Dichloropropane			100.0		%		50-140	19-DEC-17
1,3-Dichlorobenzene			93.7		%		50-140	19-DEC-17
1,4-Dichlorobenzene			96.3		%		50-140	19-DEC-17
Acetone			97.9		%		50-140	19-DEC-17
Benzene			100.5		%		50-140	19-DEC-17
Bromodichloromethane			95.3		%		50-140	19-DEC-17
Bromoform			98.3		%		50-140	19-DEC-17
Bromomethane			93.7		%		50-140	19-DEC-17
Carbon tetrachloride			97.2		%		50-140	19-DEC-17

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3915770								
WG2686085-5 MS		**WG2686085-3**						
Chlorobenzene			99.5		%		50-140	19-DEC-17
Chloroform			99.4		%		50-140	19-DEC-17
cis-1,2-Dichloroethylene			97.7		%		50-140	19-DEC-17
cis-1,3-Dichloropropene			101.8		%		50-140	19-DEC-17
Dibromochloromethane			97.8		%		50-140	19-DEC-17
Dichlorodifluoromethane			72.0		%		50-140	19-DEC-17
Ethylbenzene			98.1		%		50-140	19-DEC-17
n-Hexane			105.7		%		50-140	19-DEC-17
Methylene Chloride			98.2		%		50-140	19-DEC-17
MTBE			97.6		%		50-140	19-DEC-17
m+p-Xylenes			98.7		%		50-140	19-DEC-17
Methyl Ethyl Ketone			103.6		%		50-140	19-DEC-17
Methyl Isobutyl Ketone			98.4		%		50-140	19-DEC-17
o-Xylene			98.1		%		50-140	19-DEC-17
Styrene			97.5		%		50-140	19-DEC-17
Tetrachloroethylene			97.4		%		50-140	19-DEC-17
Toluene			97.5		%		50-140	19-DEC-17
trans-1,2-Dichloroethylene			97.6		%		50-140	19-DEC-17
trans-1,3-Dichloropropene			101.9		%		50-140	19-DEC-17
Trichloroethylene			100.3		%		50-140	19-DEC-17
Trichlorofluoromethane			98.1		%		50-140	19-DEC-17
Vinyl chloride			93.1		%		50-140	19-DEC-17

Quality Control Report

Workorder: L2036686 Report Date: 27-DEC-17

Client: LANDTEK LIMITED
205 NEBO ROAD UNIT 3
HAMILTON ON L8W2E1
Contact: KEVIN ROBERTS

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

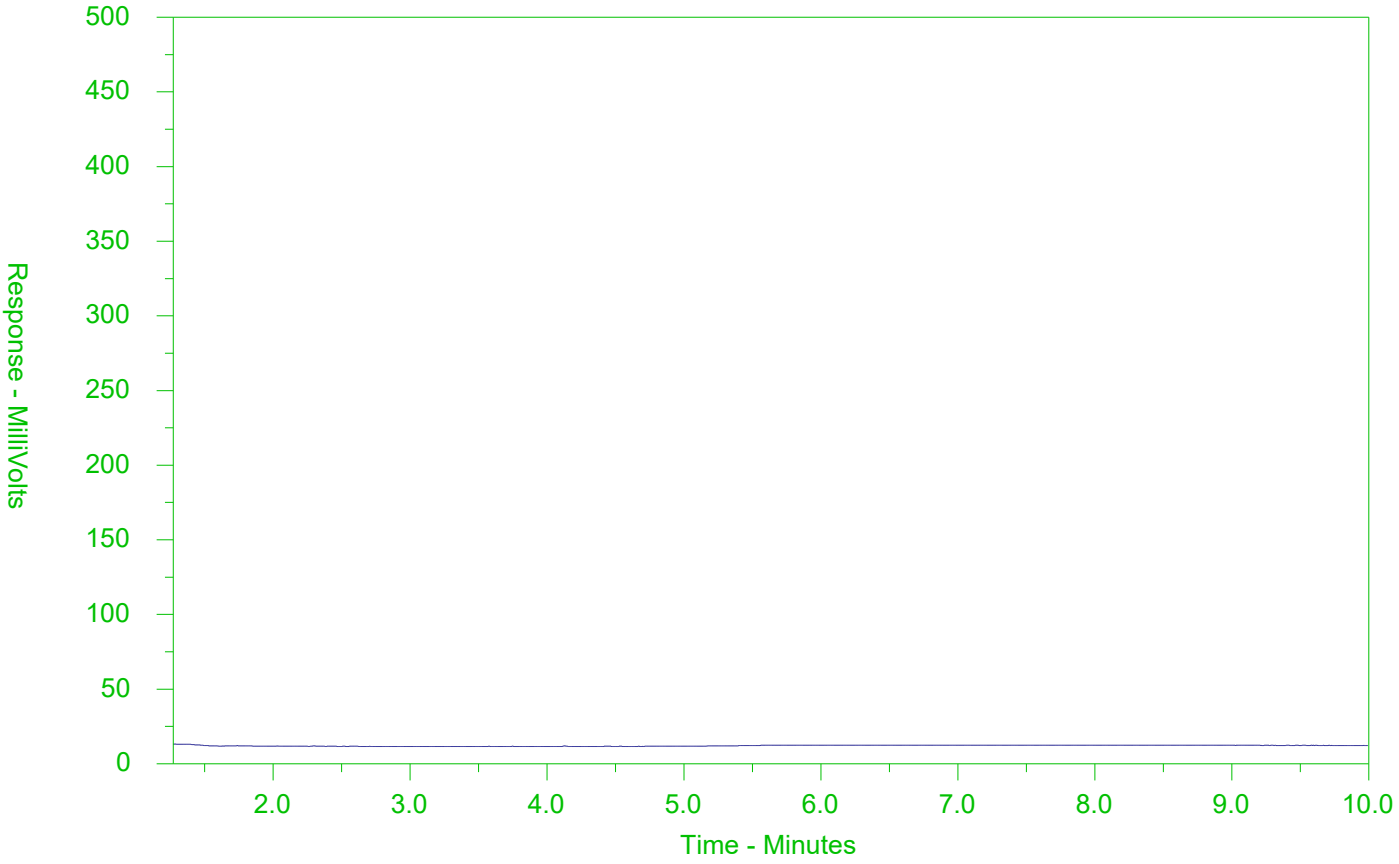
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2036686-3
Client Sample ID: BH5 SS1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

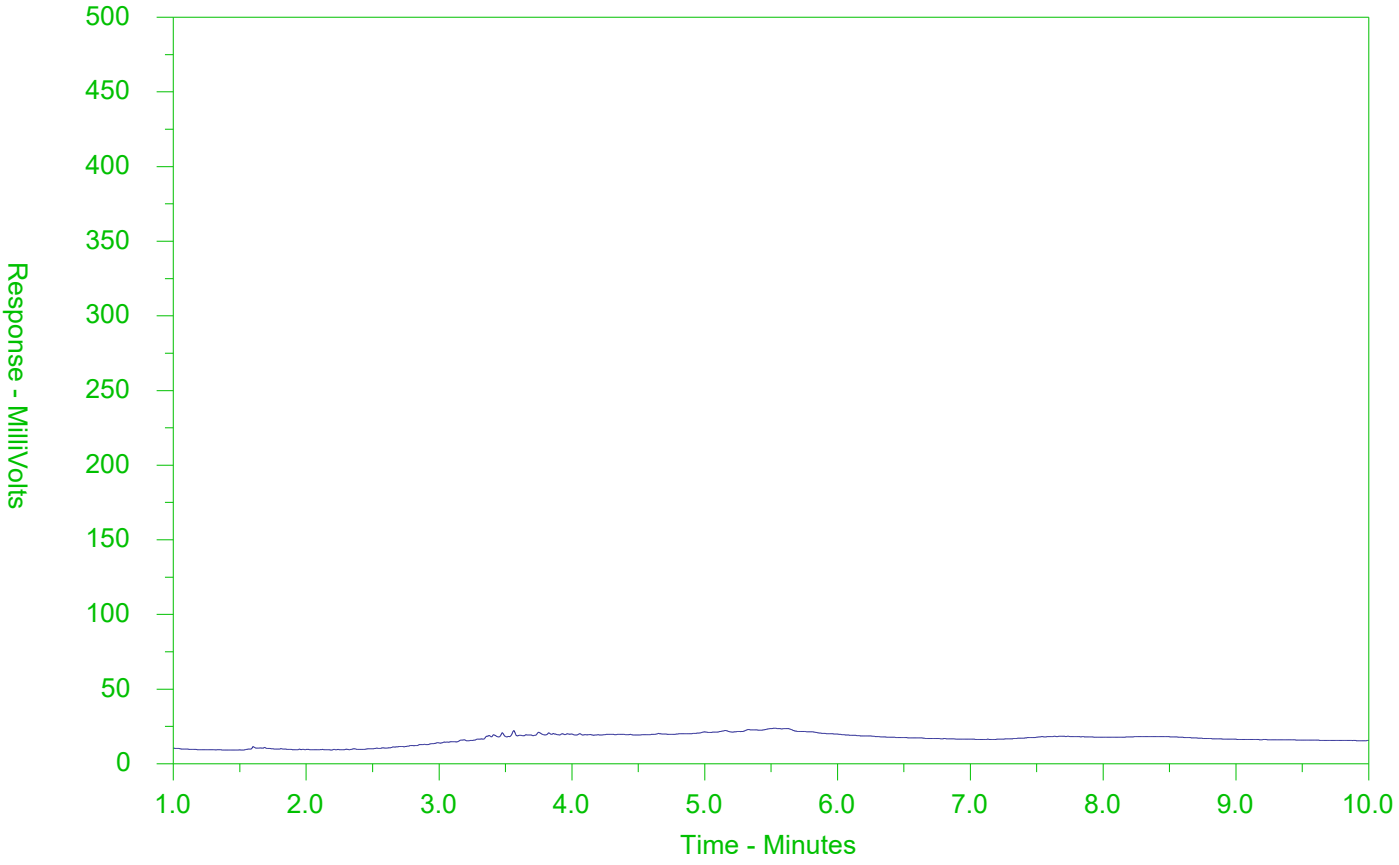
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2036686-4
Client Sample ID: BH6 SS1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

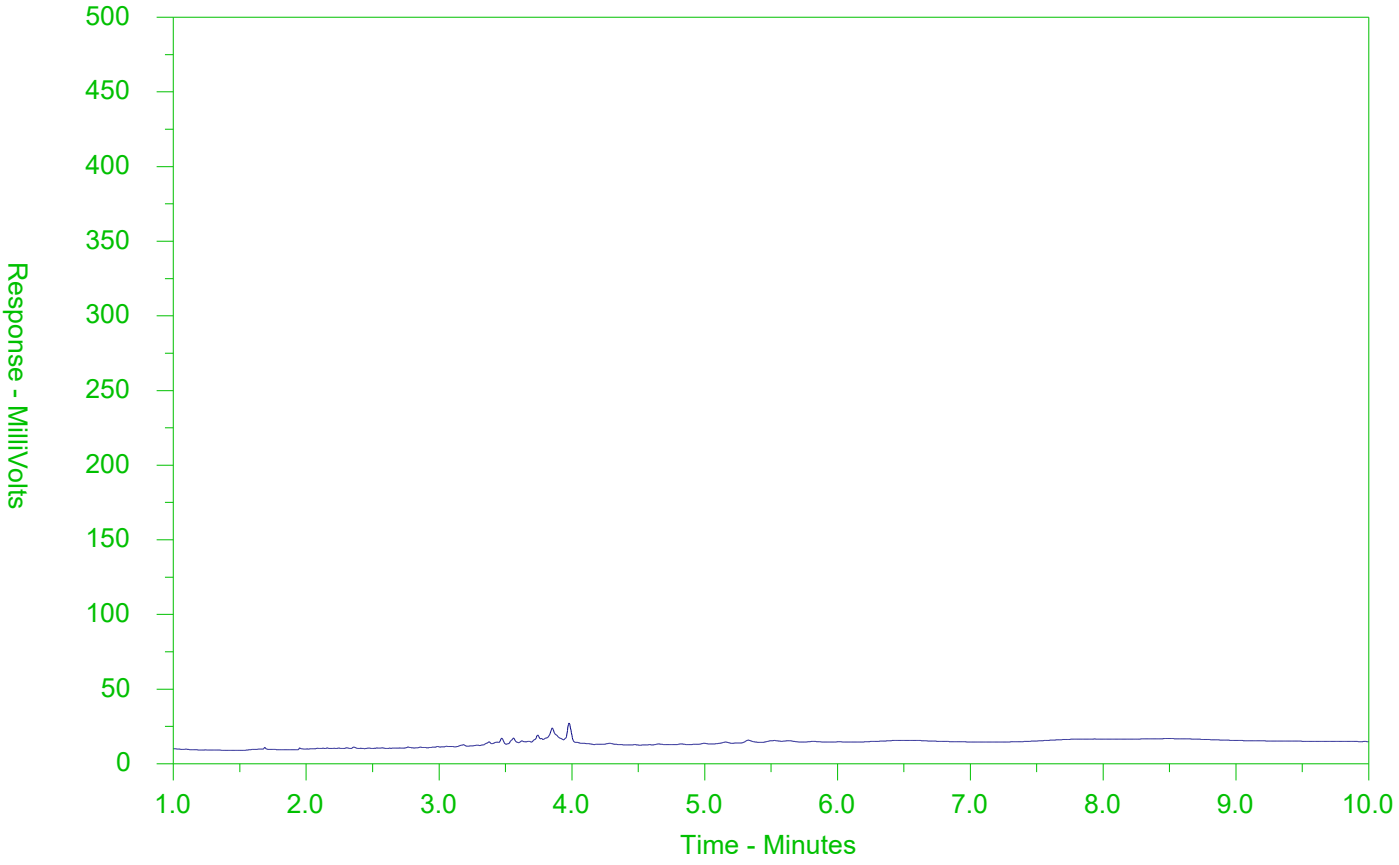
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2036686-7
Client Sample ID: BH8 SS2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2036686-COFC

COC Number: 17 - 616794

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	LANDTEK LIMITED	Select Report Format: ☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	KEVIN ROBERTS	Quality Control (QC) Report with Report ☐ YES ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐ — EMERGENCY: 1 Business day [E-100%] ☐ / Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply) ☐
Phone:	(905) 383-3733	☐ Compare Results to Criteria on Report - provide details below if box checked	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	For tests that can not be performed according to the service level selected, you will be contacted.
Street:	205 NEBO ROAD	Email 1 or Fax: Kevin@landtek.ca	
City/Province:	HAMILTON, ONTARIO	Email 2	
Postal Code:		Email 3	
Invoice To	Same as Report To ☑ YES ☐ NO	Invoice Distribution	
	Copy of Invoice with Report ☑ YES ☐ NO	Select Invoice Distribution: ☑ EMAIL ☑ MAIL ☐ FAX	
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#:
Job #:	~~[redacted]~~ 17479	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2036686 DEC18	ALS Contact: Matty	Sampler:

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals + Inorganics	PHCs / VOCs	O.C. Pesticides	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	BH1 surface	12/15/17	pm	Soil			✓			1
2	BH1 SS2				✓					1
3	BH5 SS1				✓	✓				4
4	BH6 SS1				✓	✓				3
5	BH7 surface					✓				1
6	BH8 SS1				✓					1
7	BH8 SS2				✓					3
8	BH9 surface					✓				1

Drinking Water (DW) Samples (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Table 2 Residential/Parkland/Institutional (RPI) (MAT)
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐	SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Cooling Initiated ☐	Custody seal intact Yes ☐ No ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	7.6

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date: DEC 18/17	Time: 1010	Received by:	Date: 18 Dec 17	Time: 1500

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALS 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.