February 2013

REPORT ON

Limited Phase II Environmental Site Assessment, 9230 Guelph Line, Milton, Ontario

Submitted to:
Shawn Saulnier
Mohawk Inn & Conference Centre
9230 Guelph Line
Milton, Ontario L0P 1BO

REPORT

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Report Number: 12-1152-0241

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Golder Associates

Executive Summary

Golder Associates Ltd. (“Golder”) was retained by Antalis Capital Limited (“Antalis”) on behalf of Mohawk Inn & Conference Centre (“Mohawk”) to conduct a Limited Phase II Environmental Site Assessment (“ESA”) for the property located at 9230 Guelph Line, Milton, Ontario (hereinafter referred to as the "Site").

The Site is located northwest of the intersection between Highway 401 and Guelph Line, in Milton, Ontario, and covers an area of approximately 17 hectares (42 acres).

Golder recently conducted a Phase I ESA at the Site, and identified an issue of potential environmental concern: the presence of a gasoline service station immediately north of the northeast portion of the Site.

The objective of this limited Phase II ESA was to assess the potential impact due to the operation of the off-Site gas station on the subsurface condition in the northeast area of the Site.

The field work for the Limited Phase II ESA was carried out between January 10 and 18, 2013. Two boreholes were drilled to a maximum depth of approximately 5.6 metres below ground surface ("mbgs"). The subsurface conditions generally consisted of native soil underlain by limestone bedrock. The bedrock was encountered at depths ranging from approximately 1.0 mbgs to 1.6 mbgs.

Two monitoring wells were installed in the drilled boreholes and screened in the bedrock. Groundwater levels measured in the monitoring wells ranged from 3.15 mbgs to 3.83 mbgs.

Soil and groundwater samples were collected and analysed for one or more of the parameters including petroleum hydrocarbons fractions F1 through F4 (“PHCs”), benzene, toluene, ethylbenzene and xylenes (“BTEX”), volatile organic compounds (“VOCs”), metals and inorganics.

The analytical results of soil and groundwater samples were assessed by comparing the results to the Ministry of Environment (MOE) O. Reg. 153/04 “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011): Full Depth Generic Site Condition Standards for industrial/commercial/community property use in a potable groundwater and medium to fine textured soil condition (“MOE Table 2 Standards”) or for Generic Site Condition Standards industrial/commercial/community property use for shallow soils in a potable groundwater and medium to fine textured soil condition (“MOE Table 6 Standards”)

Soils

- The pH values measured in the soil samples ranged from 6.95 to 7.34, within the acceptable range of 5.0 – 9.0;
- No concentrations of BTEX, PHC F1-F4 and metals exceeded the MOE Table 2 or Table 6 Standards in the two soil samples analyzed;
- The value for sodium adsorption ratio (“SAR”) exceeded the MOE Table 2 and Table 6 Standards in the soil sample collected from MW13-1. The SAR exceedance is likely due to the use of de-icing salt on the driveway at the Site;

Groundwater

- The pH values analysed in the groundwater samples ranged from 6.96 to 7.20, within the acceptable range of 5.0 – 9.0;
- No concentrations of PHC F1-F4, BTEX, VOCs, metals and inorganics exceeded the MOE Table 2 or Table 6 Standards in groundwater samples from the two monitoring wells installed at the Site;

Table of Contents

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

Golder Associates Ltd. (“Golder”) was retained by Antalis Capital Limited (“Antalis”) on behalf of Mohawk Inn & Conference Centre (“Mohawk”) to conduct a Limited Phase II Environmental Site Assessment (“ESA”) for the property of Mohawk Inn and Conference Centre located at 9230 Guelph Line, Milton, Ontario (hereinafter referred to as the "Site"). The Site location is shown on Figure 1.

This report presents the results of limited Phase II ESA conducted by Golder in January 2013 based on our Proposal No.P2-1152-0241, dated December 11, 2012, and as per Authorization to Proceed and Consulting Services Agreement signed by Mr. Gord Laschinger.

2.0 BACKGROUND

The Site is located northwest of the intersection between Highway 401 and Guelph Line, in Milton, Ontario, and covers an area of approximately 17 hectares (42 acres).

The Site is currently owned by 2317159 Ontario Inc., and occupied by Mohawk Inn & Conference Centre, and consists of a main building (operating as an inn, banquet hall or conference centre), a separate lodgings area (the “Treehouse”), seasonal staff quarters, parking areas and trailed walkways. The Site appears to be relatively flat, with a gentle slope towards the southwest.

Golder recently conducted a Phase I ESA at the Site, and identified an issue of potential environmental concern:

- A Petro Canada gasoline service station (9266 Guelph Line) is located immediately north of the northeast portion of the Site. The Ecolog ERIS Report listed the property as having three or four active, single walled USTs containing gasoline or diesel fuel, all of which were installed in 1988. Two tanks were listed to have a capacity of 22,700 L (approximately 6,000 gallons) and one or two tanks were reported to have a capacity of 36,000 L (approximately 9,510 gallons). Although the tanks were reported to be replaced in 2011, the unknown conditions of the former tanks and the up-gradient location to the Site, the presence of a gasoline service station immediately north of the Site represents an issue of potential environmental concern for the Site, especially the northeast area of the Site.

3.0 OBJECTIVES

The objective of this limited Phase II ESA was to assess the potential impact due to the operation of the off-Site gas station on the subsurface condition in the northeast area of the Site.

4.0 SCOPE OF WORK

The Limited Phase II ESA scope of work included the following general tasks:

- ***Developing a Health & Safety (“H&S”) Plan:*** A Health and Safety Plan for Golder staff and subcontractor use was prepared prior to initiating the fieldwork at the Site. The H&S Plan addressed worker health and safety, and established contingency plans for emergencies that could have occurred during the project.

- ***Borehole Location Clearance:*** Golder contacted public utilities to locate known utilities and obtain service clearances. Golder also retained the services of a private locator to scan over the general area of the proposed borehole locations before conducting the intrusive investigations at the Site.
- ***Borehole Drilling & Groundwater Monitoring Well Installation:*** Two monitoring wells (MW13-1 and MW13-2) were drilled and installed at the Site.
- ***Soil Sampling and Analysis:*** Soil samples were collected from the two boreholes advanced at the Site. The collected soil samples were screened and submitted to *Maxxam Analytics Inc.* ("Maxxam") for chemical analyses of parameters that included petroleum hydrocarbon fractions F1 through F4 ("PHCs"), and benzene, toluene, ethylbenzene and xylenes ("BTEX"), metals listed under Ontario Regulation 153 ("metals") and inorganics.
- ***Monitoring Well Development and Purging:*** The installed monitoring wells were monitored, developed and purged prior to groundwater sampling.
- ***Groundwater Sampling and Analysis:*** Groundwater samples were collected from the two monitoring wells and analyzed for the parameters that included: PHCs, volatile organic compounds ("VOCs"), metals and inorganics.
- ***Survey:*** Golder measured the elevation of the ground surface and the top of the pipe of each monitoring well installed during this Phase II ESA. Golder also recorded GPS coordinates for the monitoring well locations.
- ***Reporting:*** Preparation of this report containing the results of the assessment including the field and laboratory results.
- ***Waste Management:*** Soil cuttings and development water generated during this investigation were placed in 205-litre, metal drums and stored at the Site pending disposal.

4.1 FIELD METHODS

The following sections describe the investigation activities conducted during this work program. The Phase II ESA fieldwork was carried out by Golder between January 10 and 18, 2013.

4.1.1 Site-Specific Health and Safety Plan

Prior to the commencement of field activities, Golder prepared a Site-specific health and safety plan. The plan included specific health and safety requirements to be implemented during the work and established procedures to be followed by Golder staff in the event of an emergency. The document was reviewed and signed on-site by field personnel prior to commencing the field work.

4.1.2 Utility Service Clearances

Golder contacted public underground utilities locators to co-ordinate clearances of potential underground services (*e.g.,* telephone, sewers, water lines, and gas lines). Golder also retained the services of *OnSite Locates Inc.* ("OnSite Locates"), a local, private underground utilities locator, to scan the general area of the proposed boreholes at the Site.

4.1.3 Borehole Drilling and Monitoring Well Installation

Borehole drilling and monitoring well installation were carried out on January 14, 2013. Geo-environmental Drilling Inc. ("Geo-environmental") of Milton, Ontario was retained by Golder for the drilling and installation of groundwater monitoring wells. The boreholes were advanced to a maximum depth of approximately 5.6 metres below ground surface ("mbgs") using a truck-mounted CME 75 drilling rig equipped with conventional split-spoon sampler for overburden drilling and sampling, and using air-tri-coning equipment for bedrock drilling.

On completion of overburden and bedrock drilling, groundwater monitoring wells were installed and screened in bedrock in the two boreholes using polyvinyl chloride ("PVC") well screens and PVC riser pipe. The length of the well screens, based on field observations, was selected so as to straddle the apparent water table. At each location, the annulus of the borehole around the monitoring well screen was backfilled with silica sand to approximately 0.3 m above the top of the screen, and the remainder of the borehole was backfilled with bentonite to a depth of approximately 0.3 mbgs. At ground surface, each monitoring well was completed with a flush mounted protective casing set in concrete. The construction details of the monitoring wells are presented in the Record of Borehole Logs (Appendix A).

The locations of the boreholes and monitoring wells are shown on Figure 2. The key rationale for this Limited Phase II ESA was to locate the boreholes/monitoring wells at the downgradient of the off-Site gas station, and to evaluate soil and groundwater quality in terms of petroleum hydrocarbon parameters, VOCs, metals and inorganics.

4.1.4 Soil Sampling and Analysis

During drilling, soil samples from the overburden were retrieved using a conventional split-spoon sampler. Soil core samples were described and logged in the field with respect to soil type, moisture content, and visual/olfactory evidence of contamination.

Soil subsamples were collected from the soil cores using pre-marked syringes and placed into methanol preserved 40 mL clear-glass vials provided by the laboratory and stored in coolers with ice for possible subsequent chemical analysis of PHC fraction F1. Samples for analysis of PHC fractions F2 to F4, metals and inorganics were collected directly in laboratory supplied containers. A second subsample from each sample depth interval was placed in a labelled polypropylene bag for soil-headspace combustible vapour measurements using a calibrated, portable RKI Eagle combustible gas detector (CGD). The CGD was operated by Golder field staff in the methane elimination mode and calibrated to n-hexane. The combustible gas concentrations were recorded as parts per million by volume ("ppm") of n-hexane equivalent in air, and are presented in Table 1 following the text and recorded on the borehole logs included in **Appendix A**. The soil samples for chemical

analysis were selected to be representative of worst-case conditions based on field observations (e.g., odours, staining, combustible gas detector readings) for subsequent chemical analyses.

The select soil samples were submitted to Maxxam of Mississauga, Ontario under chain-of-custody and were analyzed for parameters including PHCs, BTEX, metals and inorganics (including electrical conductivity ("EC"), sodium adsorption ratio ("SAR") and pH).

For quality assurance and quality control purposes, one duplicate soil samples were collected and analyzed for metals and inorganics. For soil waste characterization, one composite soil cutting sample was collected and analyzed under toxicity characteristic leaching procedures (TCLP).

A summary of the soil samples submitted for analysis is presented in Table A below.

Table A: Soil Sample Analysis Schedule

Sample Location	Sample ID	Depth (mbgs)	Analytical Parameters
MW13-1	MW13-1 SA1	0.06 ~ 0.61	Metals and inorganics
	MW13-1 SA3	1.52 ~ 1.62	PHCs, BTEX
MW13-2	MW13-2 SA1, DUP 1	0.0 ~ 0.61	Metals and inorganics
	MW13-2 SA2	0.76 ~ 0.98	PHCs, BTEX
(composite soil sample)	TCLP 1	-	TCLP (inorganics, metals, VOCs, PCBs and ignitability)

4.1.5 Monitoring Well Development and Purging

Groundwater-level monitoring and well purging were conducted in the two new monitoring wells (MW13-1 and MW13-2) on January 18, 2013. Prior to the development of each monitoring well, the groundwater level was measured using a water level indicator on January 18, 2013. Measurements for combustible gas and organic vapour concentrations were also made in the headspace above the water table in each monitoring well using a RKI Eagle 2 GCD.

The monitoring wells were developed by purging three well volumes of groundwater from each well using a dedicated Waterra® inertial pumping system. During the development, qualitative observations were made of water colour, clarity, the presence or absence of any hydrocarbon sheen and any odours present. In addition, general field parameters including temperature, pH and electrical conductivity ("EC") were measured in the purged groundwater.

The water that was removed from the groundwater monitoring wells during their development was placed into 205-L steel drums for subsequent disposal.

A record of groundwater monitoring and well purging is presented in Table B below.

Table B: Record of Groundwater Monitoring

Monitoring Well	Water Level (mbtop)	Headspace Reading (ppm)		(°C)	pH	EC (mS/cm)
		Combustible Gas	organic vapour			
MW13-1	3.05	25	0	8.6	7.20	1.66
MW13-2	3.69	30	0	9.1	6.96	1.55

Note: mbtop = metres below top of pipe

4.1.6 Groundwater Sampling and Analysis

Groundwater sampling was also carried out in the two monitoring wells (MW13-1 and MW13-2) on January 18, 2013.

Samples were placed in pre-cleaned, labelled laboratory-supplied bottles, and were stored in coolers with ice for submission for chemical analysis. The subsample for the analysis of metals was filtered in the field at the time of sample collection using an in-line 0.45 µm acetate filter. For QA/QC purposes, one duplicate groundwater sample was collected from monitoring well MW13-2. In addition, one trip blank sample and one trip spike sample were processed and analyzed for VOCs. The water samples collected were submitted to Maxxam for chemical analysis of the parameters listed in Table C below.

Table C: Groundwater Sample Analysis Schedule

Monitoring Well	Sample ID	Well Screen Depth (mbgs)	Analytical Parameters
MW13-1	MW13-1	1.98 ~ 5.03	PHCs, VOCs, Metals and inorganics
MW13-2	MW13-2	2.59 ~ 5.64	PHCs, VOCs, Metals and inorganics
	Dup-GW		PHCs, Metals
	Trip spike	-	VOCs
	Trip blank	-	VOCs

4.1.7 Surveying

Golder conducted the elevation survey for the newly installed monitoring wells MW13-1 and MW13-2 relative to a local benchmark. The temporary local benchmark was set as 100.00 m at the high point of the southeast corner of a concrete block, which acted as a base for an air pump in the parking lot of the gas station (off-Site). The elevation data were used to establish the relative groundwater elevation in each of the monitoring wells measured. In addition, coordinates were recorded using a global position system (GPS) device.

The results of the survey are presented in Table D below.

Table D: Record of Elevations for Monitoring Wells

Well ID	UTM Coordinates	Ground Surface Elevation (m)	Top of Pipe Elevation (m)	Water Level (mbtop)	Water Level (mbgs)	Groundwater Elevation (m)
MW13-1	N581516, E4816082	98.65	98.55	3.05	3.15	95.50
MW13-2	N581549, E4816078	97.92	97.78	3.69	3.83	94.09

Notes: Water levels measured on January 18, 2013.

5.0 RESULTS

5.1 SUBSURFACE CONDITIONS

The subsurface conditions encountered during the borehole drilling generally consisted of shallow fill and native soil underlain by limestone bedrock. Asphalt/concrete and fill material was encountered at MW13-1. The fill material consisted of silt with some gravel, with a thickness of approximately 0.5 m.

The native soil was encountered at ground surface at MW13-2, and at a depth of approximately 0.6 mbgs at MW13-1, and generally consisted of till deposits of sandy silt and/or clayey silt with trace gravel. No odour or staining was observed in the soil samples retrieved. The bedrock consisted of limestone, which was encountered at depths ranging from approximately 1.0 mbgs at MW13-2 to 1.6 mbgs at MW13-1.

The groundwater levels in the monitoring wells ranged from 3.15 mbgs (MW13-1) to 3.83 mbgs (MW13-2), which corresponded to elevations of 95.50 m to 94.09 m. The groundwater elevations are shown on Figure 2. The regional groundwater flow is generally to the southern direction, to the Lake Ontario.

No sheen or odour was observed in the groundwater during the well development or sampling. The field groundwater parameters indicated that pH values ranged from 6.96 to 7.20, and electrical conductivity ranged from 1.55 to 1.66 mS/cm.

5.2 LABORATORY ANALYSIS RESULTS

5.2.1 Assessment Criteria

Based on the Site conditions, the results of the laboratory analysis of the soil and groundwater samples were evaluated by comparison with the generic soil and groundwater standards listed in the Ontario Ministry of the Environment (MOE) document entitled “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011” (“MOE Standards”). Site condition factors that determine the appropriate tables of the MOE Standards under Ontario Regulation (“O. Reg.”) 153/04 include the medium to fine-grained texture of the overburden soil, depth to bedrock of less than 2 m, and the use of groundwater for potable purposes in the vicinity of the Site. The two tables that might be considered applicable for the Site include:

- The MOE Table 2 Standards – Full Depth Generic Site Condition Standards in a potable Ground Water Condition and medium/fine-grained textured soil for industrial/commercial/community property; or
- The MOE Table 6 Standards – Generic Site Condition Standards for shallow soil in a potable Ground Water Condition and medium/fine-grained textured soil for industrial/commercial/community property use.

It should be noted that the standard values are the same for MOE Table 2 and Table 6 Standards.

The results of the leachate analysis for the composite soil sample collected for waste classification were compared to the Leachate Quality Criteria, as provided in Schedule 4 of Ontario Regulation 558/00 (Amending Regulation 347 of R.R.O. 1990).

5.2.2 Soil Results

A summary of the results of laboratory analysis for soils are presented in Tables 1 and 2 and Laboratory Certificates of Analysis are presented in Appendix B.

Petroleum Hydrocarbons Compounds (PHCs) and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)

The laboratory results for PHCs/BTEX in soil are presented in Table 1. The concentrations of all parameters were below the respective method detection limits and below the applicable MOE standards (Table 2 and Table 6) in the three soil samples analysed (including one duplicate).

Metals

The laboratory results for metals in soil are presented in Table 2. The concentrations of all parameters were either below the respective method detection limits or below the applicable MOE standards (Table 2 and Table 6) in the three soil samples analysed (including one duplicate).

Inorganics

The laboratory results for inorganics (pH, EC and SAR) in soils are presented in Table 2. The pH values measured in the soil samples ranged from 6.95 to 7.34, within the acceptable range of 5.0 – 9.0. The values of EC in the soil samples analysed were below the applicable MOE standards. The value of SAR exceeded the applicable MOE standard in the soil sample collected from MW13-1, and the value of SAR in the soil sample collected from MW13-2 met the applicable MOE standard.

5.2.3 Groundwater Results

A summary of the results of laboratory analysis for groundwater are presented in Tables 3, 4 and 5, and Laboratory Certificates of Analysis are presented in Appendix C.

Petroleum Hydrocarbons Compounds (PHCs)

The laboratory results for PHCs in groundwater are presented in Table 3. The concentrations of all parameters were below the respective method detection limits and below MOE Table 2 and Table 6 Standards in the three groundwater samples analysed (including one duplicate).

Volatile Organic Compounds (VOCs)

The laboratory results for VOCs in groundwater are presented in Table 4. Two groundwater samples (MW13-1 and MW13-2) were analyzed for VOCs. In addition, one trip blank and one trip spike sample were analyzed for VOCs. The concentrations of all parameters were below the respective method detection limits and below MOE Table 2 and Table 6 Standards for VOCs in the analysed groundwater samples and trip blank sample.

The reported percent recovery for VOCs in trip spike sample was within the acceptable range.

Metals and Inorganics (chloride)

The laboratory results for metals and inorganics in groundwater are presented in Table 5. The concentrations of all parameters were either below the respective method detection limits or below MOE Table 2 and Table 6 standards in the three (3) groundwater samples analysed.

Results for Water from Supply Wells

Three supply wells were identified at the Site, which provide the water source for the daily use at the Site. Two water samples (DW Room # 109 from Well A and B, and DW Room#201 from Well C) treated with water softener were collected in December 2012 by the property owner and submitted to SGS Canada Inc. for analysis of coliform and E. Coli. No coliform or E. Coli were detected in the analysis of the water samples.

It was also confirmed that no petroleum-like odour was noted in the groundwater pumped from the supply wells.

5.2.4 Waste Classification

The analytical results for the Ontario Regulation 347 Leachate Quality testing of a composite soil sample of the drill cuttings are summarized in Table 6.

The concentrations of the parameters analyzed were below the Schedule 4 Leachate Quality Criteria. Therefore, this waste material would be classified non-hazardous waste for disposal purposes.

5.3 Quality Assurance / Quality Control (QA/QC)

The analytical results for QA/QC samples consisting of duplicate samples, a trip blank and trip spike are presented in Tables 2, 3 and 5 and in the laboratory certificates of analysis (Appendices B and C).

To determine the precision of the primary and duplicate sample results, the relative percent difference (RPD) was calculated according to the following equation:

$$RPD\ (\%) = 100\ x\ \frac{|x2 - x1|}{\left[\frac{x1 + x2}{2}\right]}$$

Where, $x1$ and $x2$ are the primary and duplicate sample concentrations. RPDs can only be assessed when concentrations of a parameter are greater than five times the analytical reportable detection limit (RDL) in both the duplicate and original samples.

The primary and duplicate soil samples collected from MW13-2 were analyzed for metals and inorganics. The analytical results show that the concentrations for the parameters analyzed in the primary and duplicate samples were generally similar. For some parameters, including boron, chromium, cobalt, nickel, pH and EC, the calculated RPDs were greater than the acceptable range. The RPD values may have been caused by the inhomogeneity of soil samples collected from the shallow and thin overburden deposit. However, the concentrations of boron, chromium, cobalt, and nickel, and the values of pH and EC in both the primary and duplicate soil samples did not exceed the MOE Table 2 or Table 6 Standards.

The primary and duplicate groundwater samples collected from monitoring well MW13-2 were analysed for PHCs and metals. The analytical results show that the concentrations for the parameters analyzed in the primary and duplicate samples were generally similar, except for zinc, which had a calculated RPD that was outside the acceptable range. It should be noted that the concentrations of zinc in the primary and duplicate groundwater samples did not exceed MOE Table 2 or Table 6 Standards.

No VOC concentrations were reported above the laboratory reportable detection limit in the trip blank sample analysed. The trip spike recoveries were generally within the referenced acceptable range (60 – 130%), except for low recovery for hexane. It should be noted that hexane may be adsorbed on the liner/septum of the vials, and hexane was not detected in the two groundwater samples.

The analytical results were further supported by an internal QA/QC program using blanks, spikes, surrogates and duplicate samples carried out by the laboratory (Maxxam). The laboratory certificates indicated there were no unacceptable QA/QC results.

Based on the overall QA/QC performed, the results of laboratory analysis of the soil and groundwater samples are considered acceptable.

6.0 SUMMARY OF INVESTIGATIONS

The field work for the Limited Phase II ESA was carried out between January 10 and 18, 2013. Two boreholes were drilled to a maximum depth of approximately 5.6 metres below ground surface ("mbgs"). The subsurface conditions generally consisted of native soil underlain by limestone bedrock. The bedrock was encountered at depths ranging from approximately 1.0 mbgs to 1.6 mbgs.

Two monitoring wells were installed in the drilled boreholes and screened in the bedrock. Groundwater levels measured in the monitoring wells ranged from 3.15 mbgs (MW13-1) to 3.83 mbgs (MW13-2).

Soil and groundwater samples were collected and analysed for one or more of the parameters including petroleum hydrocarbons fractions F1 through F4 (“PHCs”), benzene, toluene, ethylbenzene and xylenes (“BTEX”), VOCs, metals and inorganics.

The analytical results of soil and groundwater samples were assessed by comparing the results to the Ministry of Environment (MOE) O. Reg. 153/04 "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011): Full Depth Generic Site Condition Standards for industrial/commercial/community property use in a potable groundwater and medium to fine textured soil condition ("MOE Table 2 Standards") or for Generic Site Condition Standards industrial/commercial/community property use for shallow soils in a potable groundwater and medium to fine textured soil condition ("MOE Table 6 Standards")

Soils

- The pH values measured in the soil samples ranged from 6.95 to 7.34, within the acceptable range of 5.0 – 9.0.
- No concentrations of BTEX, PHC F1-F4 and metals exceeded the MOE Table 2 or Table 6 Standards in the two soil samples analyzed;.
- The value for SAR exceeded the MOE Table 2 and Table 6 Standards in the soil sample collected from MW13-1. The SAR exceedance is likely due to the use of de-icing salt on the driveway at the Site.

Groundwater

- The pH values analysed in the groundwater samples ranged from 6.96 to 7.20, within the acceptable range of 5.0 – 9.0.
- No concentrations of PHC F1-F4, BTEX, VOCs, metals and inorganics exceeded the MOE Table 2 or Table 6 Standards in groundwater samples from the two monitoring wells installed at the Site.

7.0 STUDY LIMITATIONS

This report was prepared for the exclusive use of Mohawk Inn & Conference Centre ("Mohawk") and Antalis Capital Limited ("Antalis") and must be considered in its entirety. Any use of this document, the findings, conclusions or recommendations provided in this report by any person or entity other than Mohawk or Antalis is at the sole risk of such user. Any reliance upon this report by any party other than Mohawk or Antalis requires the prior written approval of Golder. Golder must be contacted should any questions arise as to the scope of this report or the context in which the limited Phase II ESA was performed.

Golder will also not be responsible for the real or perceived decrease in a property value, its saleability or ability to gain financing through the reporting of information in this report. With respect to regulatory compliance issues, please note that regulatory statutes and the interpretation of regulatory statute are subject to change over time.

The report was developed using data and information collected during the limited Phase II ESA conducted by Golder, and is based solely on the Site conditions encountered at the time of the field investigation and subsequent sample analyses.

The findings in this report are based on interpretation of data obtained and are limited to the locations sampled. Please note that such locations were influenced by accessibility factors that included those for use of equipment.

Physical and chemical characteristics of the soil or groundwater can vary between and beyond the tested locations and will change with time.

In assessing the property, Golder has relied in good faith on information provided by others and by Mohawk and Antalis. We accept no responsibility for any deficiency, misstatements, or inaccuracies contained in this report as a result of omissions, misinterpretations or fraudulent acts of others.

Regardless of how thorough an investigation may be, findings derived from Golder's work are limited and Golder cannot know or state for an absolute fact that areas of the Site, or neighbouring properties, or portion thereof, are unaffected by contaminants. Mohawk and Antalis still bear risk that such contaminants may be present on, or may migrate to or off the property after the investigation is complete. Golder will not be responsible for any requirements for follow-up action and costs.

8.0 CLOSURE

We trust that the information presented in this report meets your current requirement. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

GOLDER ASSOCIATES LTD.

Bujing Guan, M.A. Sc., P. Geo.
Hydrogeologist/Geologist

David Smyth, P. Geo., QPESA
Associate, Senior Hydrogeologist

BG/DS/cg

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TABLES

Table 1
Soil Analytical Results - Petroleum Hydrocarbon Compounds (PHCs)
9230 Guelph Line, Milton, ON

		Sampling Location	**MW13-1**	**MW13-2**
		Sample ID	**MW13-1 SA3**	**MW13-2 SA2**
		Sampling Date	1/14/2013	1/14/2013
		Sample Depth (mbgs)	1.52 ~ 1.62	0.76 ~ 0.98
		Headspace Combustible Gas Concentration (ppm)	0	-
Parameter	**Units**	***MOE Table 2 or Table 6 Standards***		
Benzene	*µg/g*	*0.4*	<0.020	<0.020
Toluene	*µg/g*	*9*	<0.020	<0.020
Ethylbenzene	*µg/g*	*1.6*	<0.020	<0.020
Xylenes	*µg/g*	*30*	<0.040	<0.040
F1 (C6 to C10)	*µg/g*	*65*	<10	<10
F1 (C6 to C10) minus BTEX	*µg/g*	*65*	<10	<10
F2 (C10 to C16)	*µg/g*	*250*	<10	<10
F3 (C16 to C34)	*µg/g*	*2500*	<10	<10
F4 (C34 to C50)	*µg/g*	*6600*	<10	<10

Notes:

1. < = not detected above reported detection limit
2. mbgs = metres below ground surface
3. ppm = parts per million
4. *µg/g* = microgram per gram
5. MOE Table 2 Standards = Ontario Ministry of Environment (MOE), Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act", MOE Table 2 Standards: Full Depth Generic Site Condition Standards for Industrial / Commercial / Community property use in a potable groundwater condition and in fine to medium textured soil (April 2011)
6. MOE Table 6 Standards = Ontario Ministry of Environment (MOE), Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act", MOE Table 6 Standards: Full Depth Generic Site Condition Standards for shallow soils for Industrial / Commercial / Community property use in a non-potable groundwater condition and in fine to medium textured soil (April 2011)
7. Table to be read in conjunction with accompanying report

-	Not analyzed

Prepared by: BG
Checked by: CWC

Table 2
Soil Analytical Results - Metals and Inorganics
9230 Guelph Line, Milton, ON

			Sampling Location	MW13-1	MW13-2	
			Sample ID	MW13-1 SA1	MW13-2 SA1	DUP1
			Sampling Date	1/14/2013	1/14/2013	1/14/2013
			Sample Depth (mbgs)	0.06 ~ 0.61	0.0 ~ 0.61	0 ~ 0.61
Parameter	**Units**	***MOE Table 2 or Table 6 Standards***				
Metals						
Hot Water Ext. Boron (B)	*µg/g*	*2*		0.16	0.31	0.60
Acid Extractable Antimony (Sb)	*µg/g*	*50*		0.28	0.20	<0.20
Acid Extractable Arsenic (As)	*µg/g*	*18*		8.2	6.1	4.9
Acid Extractable Barium (Ba)	*µg/g*	*670*		210	46	37
Acid Extractable Beryllium (Be)	*µg/g*	*10*		0.40	0.41	0.33
Acid Extractable Boron (B)	*µg/g*	*120*		51	<5.0	<5.0
Acid Extractable Cadmium (Cd)	*µg/g*	*1.9*		0.51	0.27	0.26
Acid Extractable Chromium (Cr)	*µg/g*	*160*		12	12	8.2
Acid Extractable Cobalt (Co)	*µg/g*	*100*		5.8	5.9	4.1
Acid Extractable Copper (Cu)	*µg/g*	*300*		42	22	20
Acid Extractable Lead (Pb)	*µg/g*	*120*		77	14	14
Acid Extractable Molybdenum (Mo)	*µg/g*	*40*		2.3	0.66	0.55
Acid Extractable Nickel (Ni)	*µg/g*	*340*		14	13	9.4
Acid Extractable Selenium (Se)	*µg/g*	*5.5*		<0.50	<0.50	<0.50
Acid Extractable Silver (Ag)	*µg/g*	*50*		<0.20	<0.20	<0.20
Acid Extractable Thallium (Tl)	*µg/g*	*3.3*		0.12	0.11	0.076
Acid Extractable Uranium (U)	*µg/g*	*33*		0.40	0.37	0.31
Acid Extractable Vanadium (V)	*µg/g*	*86*		19	21	15
Acid Extractable Zinc (Zn)	*µg/g*	*340*		200	97	83
Acid Extractable Mercury (Hg)	*µg/g*	*20*		0.051	0.061	<0.050
Chromium (VI)	*µg/g*	*10*		<0.2	<0.2	<0.2
Free Cyanide	*µg/g*	*0.051*		0.02	<0.01	<0.01
Inorganics						
Electrical Conductivity	*mS/cm*	*1.4*		0.96	0.11	0.19
Sodium Adsorption Ratio	*NA*	*12*		**19**	0.63	0.82
pH, 2:1 CaCl2 Extraction	*pH*	*5 ~ 9*		7.34	7.09	6.95

Notes:

1. < = not detected above reported detection limit
2. mbgs = metres below ground surface
3. *µg/g* = microgram per gram
4. MOE Table 2 Standards = Ontario Ministry of Environment (MOE), Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act", MOE Table 2 Standards: Full Depth Generic Site Condition Standards for Industrial / Commercial / Community property use in a potable groundwater condition and in fine to medium textured soil (April 2011)
5. MOE Table 6 Standards = Ontario Ministry of Environment (MOE), Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act", MOE Table 6 Standards: Full Depth Generic Site Condition Standards for shallow soils for Industrial / Commercial / Community property use in a non-potable groundwater condition and in fine to medium textured soil (April 2011)
6. Table to be read in conjunction with accompanying report

19 Value exceeding applicable standards

Prepared by BG
Checked by CWC

Table 3
Groundwater Analytical Results - Petroleum Hydrocarbon Compounds (PHCs)
9230 Guelph Line, Milton, ON

		Monitoring Well	**MW13-1**	**MW13-2**	
		Sample ID	**MW13-1**	**MW13-2**	**Dup-GW**
		Sampling Date	January 18, 2013	January 18, 2013	January 18, 2013
		Screen Depth (mbgs)	1.98 ~ 5.03	2.59 ~ 5.64	
		Headspace Combustible Gas Concentration (ppm)	0	25	30
		Headspace Organic Vapour Reading (ppm)	0	0	0
Parameter	**Units**	***MOE Table 2 or Table 6 Standards***			
F1 (C6 to C10) - BTEX	*µg/L*	*420*	<25	<25	<25
F2 (C10 to C16)	*µg/L*	*150*	<100	<100	<100
F3 (C16 to C34)	*µg/L*	*500*	<100	<100	<100
F4 (C34 to C50)	*µg/L*	*500*	<100	<100	<100

Notes:

1. < = not detected above reported detection limit
2. mbgs = metre below ground surface
3. ppm = parts per million
4. *µg/L* = microgram per litre
5. The results for trip spike sample are reported as recovery percentage.
6. MOE Table 2 Standards = Ontario Ministry of Environment (MOE), Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act", MOE Table 2 Standards: Full Depth Generic Site Condition Standards for all types of property use in a potable groundwater condition and in fine to medium textured soil (April 2011)
7. MOE Table 6 Standards = Ontario Ministry of Environment (MOE), Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act", MOE Table 6 Standards: Full Depth Generic Site Condition Standards for shallow soils for all types of property use in a non-potable groundwater condition and in fine to medium textured soil (April 2011)
8. Table to be read in conjunction with accompanying report

Prepared by BG
Checked by CWC

Table 4
Groundwater Analytical Results - Volatile Organic Compounds (VOCs)
9230 Guelph Line, Milton, ON

		Monitoring Well	-	-	**MW13-1**	**MW13-2**
		Sample ID	Trip spike	Trip blank	**MW13-1**	**MW13-2**
		Sampling Date	January 18, 2013	January 18, 2013	January 18, 2013	January 18, 2013
		Screen Depth (mbgs)	-	-	1.98 ~ 5.03	2.59 ~ 5.64
		Headspace Combustible Gas Concentration (ppm)	-	-	25	30
		Headspace Organic Vapour Reading (ppm)	-	-	0	0
Parameter	**Units**	***MOE Table 2 or Table 6 Standards***				
Acetone (2-Propanone)	*µg/L*	*2700*	110	<10	<10	<10
Benzene	*µg/L*	*5*	95	<0.20	<0.20	<0.20
Bromodichloromethane	*µg/L*	*16*	95	<0.50	<0.50	<0.50
Bromoform	*µg/L*	*25*	90	<1.0	<1.0	<1.0
Bromomethane	*µg/L*	*0.89*	95	<0.50	<0.50	<0.50
Carbon Tetrachloride	*µg/L*	*5*	95	<0.20	<0.20	<0.20
Chlorobenzene	*µg/L*	*30*	95	<0.20	<0.20	<0.20
Chloroform	*µg/L*	*22*	95	<0.20	<0.20	<0.20
Dibromochloromethane	*µg/L*	*25*	90	<0.50	<0.50	<0.50
1,2-Dichlorobenzene	*µg/L*	*3*	90	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	*µg/L*	*59*	85	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	*µg/L*	*1*	85	<0.50	<0.50	<0.50
Dichlorodifluoromethane (FREON 12)	*µg/L*	*590*	85	<1.0	<1.0	<1.0
1,1-Dichloroethane	*µg/L*	*5*	100	<0.20	<0.20	<0.20
1,2-Dichloroethane	*µg/L*	*5*	100	<0.50	<0.50	<0.50
1,1-Dichloroethylene	*µg/L*	*14*	100	<0.20	<0.20	<0.20
cis-1,2-Dichloroethylene	*µg/L*	*17*	95	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	*µg/L*	*17*	95	<0.50	<0.50	<0.50
1,2-Dichloropropane	*µg/L*	*5*	95	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	*µg/L*	*0.5*	80	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	*µg/L*	*0.5*	80	<0.40	<0.40	<0.40
Ethylbenzene	*µg/L*	*2.4*	85	<0.20	<0.20	<0.20
Ethylene Dibromide	*µg/L*	*0.2*	95	<0.20	<0.20	<0.20
Hexane	*µg/L*	*520*	55	<1.0	<1.0	<1.0
Methylene Chloride(Dichloromethane)	*µg/L*	*50*	95	<2.0	<2.0	<2.0
Methyl Isobutyl Ketone	*µg/L*	*640*	95	<5.0	<5.0	<5.0
Methyl Ethyl Ketone (2-Butanone)	*µg/L*	*1800*	110	<10	<10	<10
Methyl t-butyl ether (MTBE)	*µg/L*	*15*	100	<0.50	<0.50	<0.50
Styrene	*µg/L*	*5.4*	80	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	*µg/L*	*1.1*	90	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	*µg/L*	*1*	95	<0.50	<0.50	<0.50
Tetrachloroethylene	*µg/L*	*17*	85	<0.20	<0.20	<0.20
Toluene	*µg/L*	*24*	90	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	*µg/L*	*200*	95	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	*µg/L*	*5*	100	<0.50	<0.50	<0.50
Trichloroethylene	*µg/L*	*5*	95	<0.20	<0.20	<0.20
Vinyl Chloride	*µg/L*	*1.7*	95	<0.20	<0.20	<0.20
Xylene (Total)	*µg/L*	*300*	-	<0.20	<0.20	<0.20
Trichlorofluoromethane (FREON 11)	*µg/L*	150	95	<0.50	<0.50	<0.50

Note:

1. < = not detected above reported detection limit
2. mbgs = metre below ground surface
3. ppm = parts per million
4. *µg/L* = microgram per litre
5. The results for trip spike sample are reported in percent recovery.
6. MOE Table 2 Standards = Ontario Ministry of Environment (MOE), Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act", MOE Table 2 Standards: Full Depth Generic Site Condition Standards for all types of property use in a potable groundwater condition and in fine to medium textured soil (April 2011)
7. MOE Table 6 Standards = Ontario Ministry of Environment (MOE), Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act", MOE Table 6 Standards: Full Depth Generic Site Condition Standards for shallow soils for all types of property use in a non-potable groundwater condition and in fine to medium textured soil (April 2011)
8. Table to be read in conjunction with accompanying report

-	Not available

Prepared by BG
Checked by CWC

Groundwater Analytical Results - Metals and Inorganics
9230 Guelph Line, Milton, ON

		Monitoring Well	MW13-1	MW13-2	
		Sample ID	MW13-1	MW13-2	Dup-GW
		Screen Depth (mbgs)	January 18, 2013	January 18, 2013	January 18, 2013
		Sampling Date	1.98 ~ 5.03	2.59 ~ 5.64	
Parameter	**Units**	***MOE Table 2 or Table 6 Standards***			
Metals					
Chromium (VI)	*µg/L*	*25*	<5.0	<5.0	-
Mercury (Hg)	*µg/L*	*1*	<0.1	<0.1	-
Dissolved Antimony (Sb)	*µg/L*	*6*	<0.50	<0.50	<0.50
Dissolved Arsenic (As)	*µg/L*	*25*	<1.0	<1.0	<1.0
Dissolved Barium (Ba)	*µg/L*	*1000*	50	48	47
Dissolved Beryllium (Be)	*µg/L*	*4*	<0.50	<0.50	<0.50
Dissolved Boron (B)	*µg/L*	*5000*	22	22	20
Dissolved Cadmium (Cd)	*µg/L*	*2.7*	<0.10	<0.10	<0.10
Dissolved Chromium (Cr)	*µg/L*	*50*	<5.0	<5.0	<5.0
Dissolved Cobalt (Co)	*µg/L*	*3.8*	<0.50	1.5	<0.50
Dissolved Copper (Cu)	*µg/L*	*87*	1.3	1.2	1.1
Dissolved Lead (Pb)	*µg/L*	*10*	2.0	<0.50	<0.50
Dissolved Molybdenum (Mo)	*µg/L*	*70*	<0.50	<0.50	<0.50
Dissolved Nickel (Ni)	*µg/L*	*100*	<1.0	<1.0	<1.0
Dissolved Selenium (Se)	*µg/L*	*10*	<2.0	<2.0	<2.0
Dissolved Silver (Ag)	*µg/L*	*1.5*	<0.10	<0.10	<0.10
Dissolved Sodium (Na)	*µg/L*	*490000*	210000	190000	190000
Dissolved Thallium (Tl)	*µg/L*	*2*	<0.050	<0.050	<0.050
Dissolved Uranium (U)	*µg/L*	*20*	0.29	0.15	0.15
Dissolved Vanadium (V)	*µg/L*	*6.2*	0.64	0.69	0.84
Dissolved Zinc (Zn)	*µg/L*	*1100*	5.6	13	8.9
Free Cyanide	*µg/L*	*66*	<2	<2	-
Inorganics					
Chloride	*µg/L*	*790000*	260000	220000	-

Notes:

1. < = not detected above reported detection limit
2. mbgs = metre below ground surface
3. *µg/L* = microgram per litre
4. MOE Table 2 Standards = Ontario Ministry of Environment (MOE), Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act", MOE Table 2 Standards: Full Depth Generic Site Condition Standards for all types of property use in a potable groundwater condition and in fine to medium textured soil (April 2011)
5. MOE Table 6 Standards = Ontario Ministry of Environment (MOE), Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act", MOE Table 6 Standards: Full Depth Generic Site Condition Standards for shallow soils for all types of property use in a non-potable groundwater condition and in fine to medium textured soil (April 2011)
6. Table to be read in conjunction with accompanying report

-	Not tested

Prepared by BG
Checked by CWC

Table 6
Toxicity Characteristic Leaching Procedure (TCLP) Results
9230 Guelph Line, Milton, ON

		Sampling Location	Composite
		Sample ID	TCLP 1
		Sampling Date	1/14/2013
Parameter	**Units**	**Schedule 4**	
INORGANICS			
Leachable Fluoride (F-)	*mg/L*	*150*	0.2
Leachable Free Cyanide	*mg/L*	*20*	<0.002
Leachable Nitrate + Nitrite	*mg/L*	*1000*	<1
METALS			
Leachable Mercury (Hg)	*mg/L*	*0.1*	<0.001
Leachable Arsenic (As)	*mg/L*	*2.5*	<0.2
Leachable Barium (Ba)	*mg/L*	*100*	0.4
Leachable Boron (B)	*mg/L*	*500*	<0.1
Leachable Cadmium (Cd)	*mg/L*	*0.5*	<0.05
Leachable Chromium (Cr)	*mg/L*	*5*	<0.1
Leachable Lead (Pb)	*mg/L*	*5*	<0.1
Leachable Selenium (Se)	*mg/L*	*1*	<0.1
Leachable Silver (Ag)	*mg/L*	*5*	<0.01
Leachable Uranium (U)	*mg/L*	*10*	<0.01
VOLATILES			
Leachable Benzene	*mg/L*	*0.5*	<0.020
Leachable Carbon Tetrachloride	*mg/L*	*0.5*	<0.020
Leachable Chlorobenzene	*mg/L*	*8*	<0.020
Leachable Chloroform	*mg/L*	*10*	<0.020
Leachable 1,2-Dichlorobenzene	*mg/L*	*20*	<0.050
Leachable 1,4-Dichlorobenzene	*mg/L*	*0.5*	<0.050
Leachable 1,2-Dichloroethane	*mg/L*	*0.5*	<0.050
Leachable 1,1 Dichloroethene	*mg/L*	*1.4*	<0.020
Leachable Dichloromethane	*mg/L*	*5*	<0.20
Leachable Methyl Ethyl Ketone	*mg/L*	*200*	<1.0
Leachable Tetrachloroethene	*mg/L*	*3*	<0.020
Leachable Trichloroethene	*mg/L*	*5*	<0.020
Leachable Vinyl Chloride	*mg/L*	*0.2*	<0.020
POLYCHLORINATED BIPHENYLS (PCBs)			
Leachable Total PCBs	*mg/L*	*0.3*	<0.003
IGNITABILITY			
Ignitability	*NA*	*NV*	NF/NI

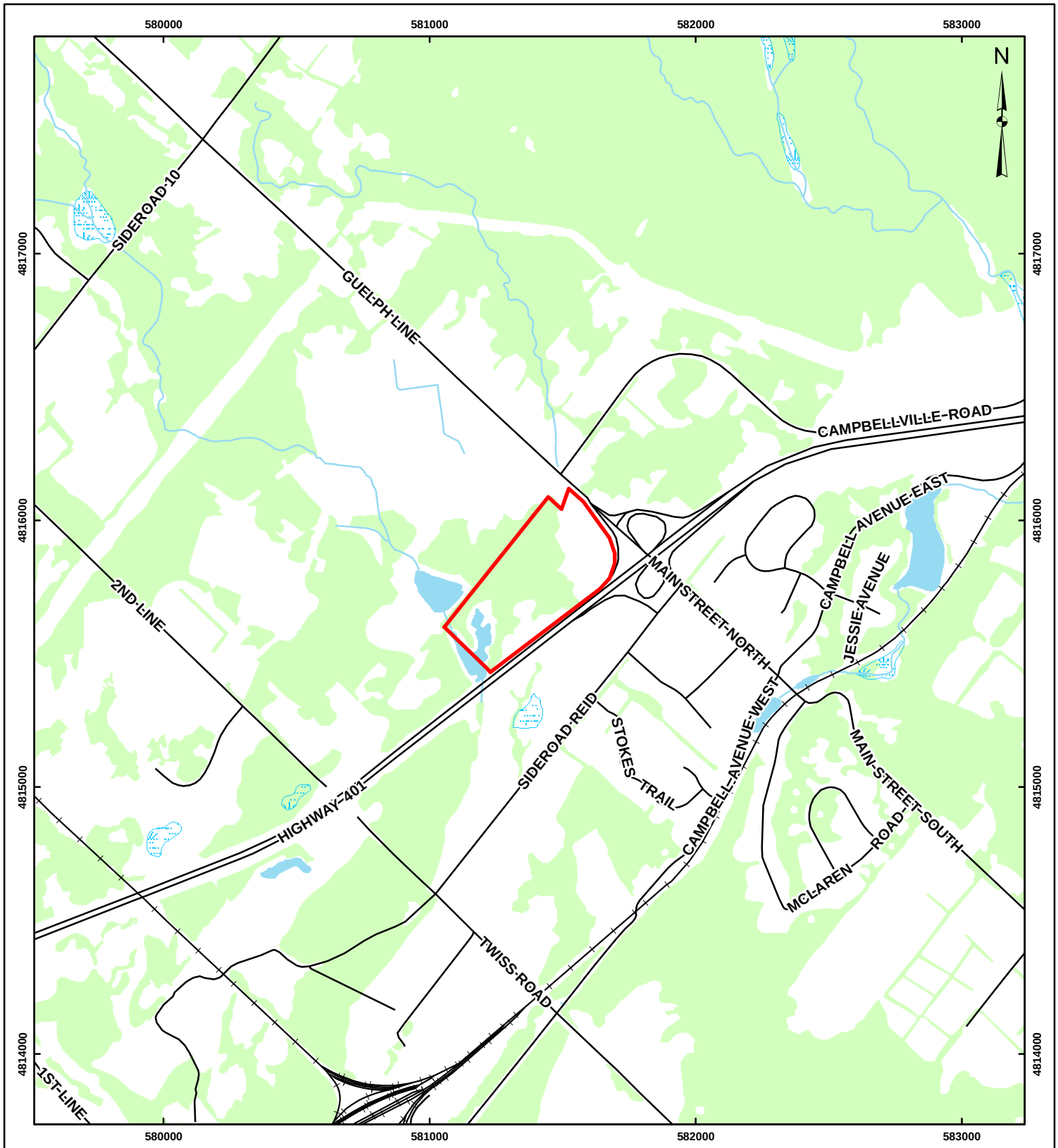
Notes:

1. Schedule 4 = Ministry of Environment (MOE) Regulation 558/00, Schedule 4 Leachate Quality Criteria
2. < = Not detected above method detection limit
3. *NA* = Not Available
4. *NV* = No standard value available
5. mg/L = milligram per litre
6. NF/NI = not flammable/not ignitable
7. Table to be read in conjunction with accompanying report.

Prepared by BG

Checked by CWC

FIGURES



LEGEND

- Roads
- Railways
- Watercourse
- Water Area, Permanent
- Wetland, Permanent
- Site Location
- Wooded Areas

300 150 0 300 600 900

SCALE 1:20,000 METRES

REFERENCE

Base Data - MNR LIO, obtained 2009
Produced by Golder Associates Ltd under licence from
Ontario Ministry of Natural Resources, © Queens Printer 2012
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 17

PROJECT
LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT
MOHAWK INN AND CONFERENCE CENTRE
9230 GUELPH LINE
MILTON, ONTARIO

TITLE

SITE LOCATION

Golder Associates
Mississauga, Ontario

PROJECT NO. 12-1152-0241 (2000)			SCALE AS SHOWN	REV. 0.0
DESIGN	ME	24 Jan. 2013	FIGURE: 1	
GIS	ME	24 Jan. 2013		
CHECK	BG	24 Jan. 2013		
REVIEW	BG	24 Jan. 2013		

G:\Projects\2012\12-1152-0241_MohawkInn_MiltonOntario\GIS\MXDs\Reporting\Phase2000\Fig1_SiteLocation.mxd

LEGEND

- Monitoring Well
- Supply Well
- 95.50 Groundwater Level (m) - Measured on Jan. 18, 2013
- Site Location
- Local Benchmark

(TBM: 100.00m high point on the south east corner of the concrete block for air pump, south of the gas station building)

NOTES:

The locations are approximate.

REFERENCE

Base Data - MNR LIO, obtained 2009
Produced by Golder Associates Ltd under licence from
Ontario Ministry of Natural Resources, © Queens Printer 2012
Imagery - ESRI World Imagery WMS, AEX, 0.5m, 2007/09/
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 17

30 15 0 30 60 90
SCALE 1:2,000 METRES

PROJECT
LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT
MOHAWK INN AND CONFERENCE CENTRE
9230 GUELPH LINE
MILTON, ONTARIO

TITLE
SOIL AND GROUNDWATER SAMPLING LOCATION

Golder Associates
Mississauga, Ontario

PROJECT NO. 12-1152-0241 (2000)		SCALE AS SHOWN	REV. 0.0
DESIGN	ME	24 Jan. 2013	
GIS	ME	24 Jan. 2013	
CHECK	BG	24 Jan. 2013	
REVIEW	BG	24 Jan. 2013	

FIGURE: 2

G:\Projects\2012\12-1152-0241_MohawkInn_MiltonOntario\GIS\MXDs\Reporting\Phase2000\Fig2_SoilandGroundwaterSamplingLocation.mxd

APPENDIX A

Record of Borehole Logs

PROJECT: 12-1152-0241

RECORD OF BOREHOLE: MW13-1

SHEET 1 OF 1

LOCATION: N 4816082.00; E 581516.00

BORING DATE: January 14, 2013

DATUM: Local

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

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ (ND = Not Detected; 100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ (ND = Not Detected; 100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl; 10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE								
0	200 mm O.D., 108 mm Hollow stem Augers; 57 mm O.D. Split Spoon and Tri-Cone	ASPHALT		0.00 / 0.06						Concrete
		Silt, some gravel, trace sand; brown with grey (FILL); moist, compact - No odour - No staining			1	SS	18 ⊕ ND		Metals	Sand
1		CLAYEY SILT, trace gravel; brown (TILL); moist, very stiff - No odour - No staining		0.61	2	SS	10 ⊕ ND			Bentonite
2		Limestone (BEDROCK)		1.62	3	SS	50/0.15 ⊕ ND		PHC BTEX	Sand
3										Jan. 18, 2013
4										Screen
5		END OF BOREHOLE		5.03						
6										
7										
8										
9										
10										

DEPTH SCALE

1 : 50

LOGGED: JC

CHECKED: BG

Golder Associates

GTA-BHS 001 1211520241.GPJ GAL-MIS.GDT 1/23/13

PROJECT: 12-1152-0241

RECORD OF BOREHOLE: MW13-2

SHEET 1 OF 1

LOCATION: N 4816078.00; E 581549.00

BORING DATE: January 14, 2013

DATUM: Local

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

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ (ND = Not Detected; 100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ (ND = Not Detected; 100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl; 10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE								
0	200 mm O.D., 108 mm Hollow stem Augers; 57 mm O.D. Split Spoon and Tri-Cone	Sandy SILT, trace gravel, trace organics; brown; moist, very loose - No odour - No staining		0.00	1	SS	18	⊕		Metals	Concrete Sand
		CLAYEY SILT, trace gravel; brown (TILL); moist, hard - No odour - No staining		0.61	2	SS	50/0.35	⊕ ND		PHC BTEX	
1		Limestone (BEDROCK)		0.98							Bentonite
2											Sand
3											
4											Jan. 18, 2013 Screen
5											
		END OF BOREHOLE		5.64							
6											
7											
8											
9											
10											

GTA-BHS 001 1211520241.GPJ GAL-MIS.GDT 1/23/13

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: JC

CHECKED: BG

APPENDIX B

Certificate of Analysis – Soil

Your Project #: 12-1152-0241
Site#: 12-1152-0241
Your C.O.C. #: 38643001, 386430-01-01

Attention: Bujing Guan
Golder Associates Ltd
Mississauga - Standing Offer
2390 Argentia Rd
Mississauga, ON
L5N 5Z7

Report Date: 2013/01/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B306488
Received: 2013/01/15, 08:00

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	3	2013/01/18	2013/01/18	CAM SOP-00408	R153 Ana. Prot. 2011
Free (WAD) Cyanide	1	N/A	2013/01/17	CAM SOP-00457	Ontario MOE CN-E3015
Free (WAD) Cyanide	2	N/A	2013/01/18	CAM SOP-00457	Ontario MOE CN-E3015
Conductivity	3	N/A	2013/01/21	CAM SOP-00414	APHA 2510
Hexavalent Chromium in Soil by IC (1)	3	2013/01/18	2013/01/18	CAM SOP-00436	EPA SW846-3060/7199
Petroleum Hydro. CCME F1 & BTEX in Soil	2	2013/01/15	2013/01/16	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	2013/01/16	2013/01/17	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	3	2013/01/18	2013/01/18	CAM SOP-00447	EPA 6020
Moisture	2	N/A	2013/01/16	CAM SOP-00445	R.Carter,1993
Moisture	1	N/A	2013/01/17	CAM SOP-00445	R.Carter,1993
Moisture	2	N/A	2013/01/18	CAM SOP-00445	R.Carter,1993
pH CaCl2 EXTRACT	1	2013/01/18	2013/01/18	CAM SOP-00413	SM 4500H+ B
pH CaCl2 EXTRACT	2	2013/01/21	2013/01/21	CAM SOP-00413	SM 4500H+ B
Sodium Adsorption Ratio (SAR)	3	2013/01/15	2013/01/21	CAM SOP-00102	EPA 6010

Remarks:

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

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

Your Project #: 12-1152-0241
Site#: 12-1152-0241
Your C.O.C. #: 38643001, 386430-01-01

Attention: Bujing Guan
Golder Associates Ltd
Mississauga - Standing Offer
2390 Argentia Rd
Mississauga, ON
L5N 5Z7

Report Date: 2013/01/21

CERTIFICATE OF ANALYSIS

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

(1) Soils are reported on a dry weight basis unless otherwise specified.

Encryption Key

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

Mathura Thirukkumaran, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

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

Total cover pages: 2

Maxxam Job #: B306488
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

O'REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		QF9466		QF9468	QF9470		
Sampling Date		2013/01/14		2013/01/14	2013/01/14		
COC Number		386430-01-01		386430-01-01	386430-01-01		
	Units	**MW13-1 SA1**	**QC Batch**	**MW13-2 SA1**	**DUP1**	**RDL**	**QC Batch**
Calculated Parameters							
Sodium Adsorption Ratio	N/A	19	3094201	0.63	0.82		3094201
Inorganics							
Chromium (VI)	ug/g	<0.2	3098297	<0.2	<0.2	0.2	3098297
Conductivity	mS/cm	0.96	3100129	0.11	0.19	0.002	3100129
Free Cyanide	ug/g	0.02	3095440	<0.01	<0.01	0.01	3097464
Moisture	%	11	3097268	17	21	1.0	3098910
Available (CaCl2) pH	pH	7.34	3098311	7.09	6.95		3100004
Metals							
Hot Water Ext. Boron (B)	ug/g	0.16	3098702	0.31	0.60	0.050	3098702
Acid Extractable Antimony (Sb)	ug/g	0.28	3098398	0.20	<0.20	0.20	3098903
Acid Extractable Arsenic (As)	ug/g	8.2	3098398	6.1	4.9	1.0	3098903
Acid Extractable Barium (Ba)	ug/g	210	3098398	46	37	0.50	3098903
Acid Extractable Beryllium (Be)	ug/g	0.40	3098398	0.41	0.33	0.20	3098903
Acid Extractable Boron (B)	ug/g	51	3098398	<5.0	<5.0	5.0	3098903
Acid Extractable Cadmium (Cd)	ug/g	0.51	3098398	0.27	0.26	0.10	3098903
Acid Extractable Chromium (Cr)	ug/g	12	3098398	12	8.2	1.0	3098903
Acid Extractable Cobalt (Co)	ug/g	5.8	3098398	5.9	4.1	0.10	3098903
Acid Extractable Copper (Cu)	ug/g	42	3098398	22	20	0.50	3098903
Acid Extractable Lead (Pb)	ug/g	77	3098398	14	14	1.0	3098903
Acid Extractable Molybdenum (Mo)	ug/g	2.3	3098398	0.66	0.55	0.50	3098903
Acid Extractable Nickel (Ni)	ug/g	14	3098398	13	9.4	0.50	3098903
Acid Extractable Selenium (Se)	ug/g	<0.50	3098398	<0.50	<0.50	0.50	3098903
Acid Extractable Silver (Ag)	ug/g	<0.20	3098398	<0.20	<0.20	0.20	3098903
Acid Extractable Thallium (Tl)	ug/g	0.12	3098398	0.11	0.076	0.050	3098903
Acid Extractable Uranium (U)	ug/g	0.40	3098398	0.37	0.31	0.050	3098903
Acid Extractable Vanadium (V)	ug/g	19	3098398	21	15	5.0	3098903
Acid Extractable Zinc (Zn)	ug/g	200	3098398	97	83	5.0	3098903
Acid Extractable Mercury (Hg)	ug/g	0.051	3098398	0.061	<0.050	0.050	3098903

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B306488
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		QF9467	QF9467	QF9469	QF9469		
Sampling Date		2013/01/14	2013/01/14	2013/01/14	2013/01/14		
COC Number		386430-01-01	386430-01-01	386430-01-01	386430-01-01		
	Units	**MW13-1 SA3**	**MW13-1 SA3 Lab-Dup**	**MW13-2 SA2**	**MW13-2 SA2 Lab-Dup**	**RDL**	**QC Batch**
Inorganics							
Moisture	%	9.0		16	17	1.0	3096276
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.020	<0.020	<0.020		0.020	3096158
Toluene	ug/g	<0.020	<0.020	<0.020		0.020	3096158
Ethylbenzene	ug/g	<0.020	<0.020	<0.020		0.020	3096158
o-Xylene	ug/g	<0.020	<0.020	<0.020		0.020	3096158
p+m-Xylene	ug/g	<0.040	<0.040	<0.040		0.040	3096158
Total Xylenes	ug/g	<0.040	<0.040	<0.040		0.040	3096158
F1 (C6-C10)	ug/g	<10	<10	<10		10	3096158
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10		10	3096158
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10		<10		10	3096319
F3 (C16-C34 Hydrocarbons)	ug/g	<10		<10		10	3096319
F4 (C34-C50 Hydrocarbons)	ug/g	<10		<10		10	3096319
Reached Baseline at C50	ug/g	Yes		Yes			3096319
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	105	104	104			3096158
4-Bromofluorobenzene	%	101	101	102			3096158
D10-Ethylbenzene	%	73	75	79			3096158
D4-1,2-Dichloroethane	%	96	96	96			3096158
o-Terphenyl	%	87		85			3096319

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam Job #: B306488
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

Test Summary

Maxxam ID QF9466 **Collected** 2013/01/14
Sample ID MW13-1 SA1 **Shipped**
Matrix Soil **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3098702	2013/01/18	2013/01/18	Azita Fazaeli
Free (WAD) Cyanide	TECH	3095440	N/A	2013/01/17	Louise Harding
Conductivity	COND	3100129	N/A	2013/01/21	Neil Dassanayake
Hexavalent Chromium in Soil by IC	IC/SPEC	3098297	2013/01/18	2013/01/18	Yogesh Patel
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3098398	2013/01/18	2013/01/18	Kevin Comerford
Moisture	BAL	3097268	N/A	2013/01/17	Valentina Kaftani
pH CaCl2 EXTRACT		3098311	2013/01/18	2013/01/18	Xuanhong Qiu
Sodium Adsorption Ratio (SAR)	CALC/MET	3094201	2013/01/21	2013/01/21	Automated Statchk

Maxxam ID QF9467 **Collected** 2013/01/14
Sample ID MW13-1 SA3 **Shipped**
Matrix Soil **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3096158	2013/01/15	2013/01/16	Domnica Andronescu
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3096319	2013/01/16	2013/01/17	Zhiyue (Frank) Zhu
Moisture	BAL	3096276	N/A	2013/01/16	Valentina Kaftani

Maxxam ID QF9467 Dup **Collected** 2013/01/14
Sample ID MW13-1 SA3 **Shipped**
Matrix Soil **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3096158	2013/01/15	2013/01/16	Domnica Andronescu

Maxxam ID QF9468 **Collected** 2013/01/14
Sample ID MW13-2 SA1 **Shipped**
Matrix Soil **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3098702	2013/01/18	2013/01/18	Azita Fazaeli
Free (WAD) Cyanide	TECH	3097464	N/A	2013/01/18	Louise Harding
Conductivity	COND	3100129	N/A	2013/01/21	Neil Dassanayake
Hexavalent Chromium in Soil by IC	IC/SPEC	3098297	2013/01/18	2013/01/18	Yogesh Patel
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3098903	2013/01/18	2013/01/18	Kevin Comerford
Moisture	BAL	3098910	N/A	2013/01/18	Vasan Thiagarajah
pH CaCl2 EXTRACT		3100004	2013/01/21	2013/01/21	Xuanhong Qiu
Sodium Adsorption Ratio (SAR)	CALC/MET	3094201	2013/01/21	2013/01/21	Automated Statchk

Maxxam ID QF9469 **Collected** 2013/01/14
Sample ID MW13-2 SA2 **Shipped**
Matrix Soil **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3096158	2013/01/15	2013/01/16	Domnica Andronescu
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3096319	2013/01/16	2013/01/17	Zhiyue (Frank) Zhu
Moisture	BAL	3096276	N/A	2013/01/16	Valentina Kaftani

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Maxxam Job #: B306488
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

Test Summary

Maxxam ID QF9469 Dup
Sample ID MW13-2 SA2
Matrix Soil

Collected 2013/01/14
Shipped
Received 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Moisture	BAL	3096276	N/A	2013/01/16	Valentina Kaftani

Maxxam ID QF9470
Sample ID DUP1
Matrix Soil

Collected 2013/01/14
Shipped
Received 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3098702	2013/01/18	2013/01/18	Azita Fazaeli
Free (WAD) Cyanide	TECH	3097464	N/A	2013/01/18	Louise Harding
Conductivity	COND	3100129	N/A	2013/01/21	Neil Dassanayake
Hexavalent Chromium in Soil by IC	IC/SPEC	3098297	2013/01/18	2013/01/18	Yogesh Patel
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3098903	2013/01/18	2013/01/18	Kevin Comerford
Moisture	BAL	3098910	N/A	2013/01/18	Vasan Thiagarajah
pH CaCl2 EXTRACT		3100004	2013/01/21	2013/01/21	Xuanhong Qiu
Sodium Adsorption Ratio (SAR)	CALC/MET	3094201	2013/01/21	2013/01/21	Automated Statchk

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Maxxam Job #: B306488
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

Package 1	0.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

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

Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: MB306488

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3095440	LHA	Matrix Spike	Free Cyanide	2013/01/17		95	%	75 - 125
		Spiked Blank	Free Cyanide	2013/01/17		98	%	80 - 120
		Method Blank	Free Cyanide	2013/01/17	<0.01		ug/g	
		RPD	Free Cyanide	2013/01/17	NC		%	35
3096158	DAN	Matrix Spike						
		[QF9467-02]	1,4-Difluorobenzene	2013/01/16		104	%	60 - 140
			4-Bromofluorobenzene	2013/01/16		104	%	60 - 140
			D10-Ethylbenzene	2013/01/16		79	%	60 - 140
			D4-1,2-Dichloroethane	2013/01/16		97	%	60 - 140
			Benzene	2013/01/16		89	%	60 - 140
			Toluene	2013/01/16		82	%	60 - 140
			Ethylbenzene	2013/01/16		87	%	60 - 140
			o-Xylene	2013/01/16		86	%	60 - 140
			p+m-Xylene	2013/01/16		78	%	60 - 140
			F1 (C6-C10)	2013/01/16		64	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2013/01/16		106	%	60 - 140
			4-Bromofluorobenzene	2013/01/16		104	%	60 - 140
			D10-Ethylbenzene	2013/01/16		81	%	60 - 140
			D4-1,2-Dichloroethane	2013/01/16		97	%	60 - 140
			Benzene	2013/01/16		93	%	60 - 130
			Toluene	2013/01/16		86	%	60 - 130
			Ethylbenzene	2013/01/16		90	%	60 - 130
			o-Xylene	2013/01/16		91	%	60 - 130
			p+m-Xylene	2013/01/16		82	%	60 - 130
			F1 (C6-C10)	2013/01/16		85	%	80 - 120
		Method Blank	1,4-Difluorobenzene	2013/01/16		103	%	60 - 140
			4-Bromofluorobenzene	2013/01/16		101	%	60 - 140
			D10-Ethylbenzene	2013/01/16		80	%	60 - 140
			D4-1,2-Dichloroethane	2013/01/16		95	%	60 - 140
			Benzene	2013/01/16	<0.020		ug/g	
			Toluene	2013/01/16	<0.020		ug/g	
			Ethylbenzene	2013/01/16	<0.020		ug/g	
			o-Xylene	2013/01/16	<0.020		ug/g	
			p+m-Xylene	2013/01/16	<0.040		ug/g	
			Total Xylenes	2013/01/16	<0.040		ug/g	
			F1 (C6-C10)	2013/01/16	<10		ug/g	
			F1 (C6-C10) - BTEX	2013/01/16	<10		ug/g	
		RPD [QF9467-02]	Benzene	2013/01/16	NC		%	50
			Toluene	2013/01/16	NC		%	50
			Ethylbenzene	2013/01/16	NC		%	50
			o-Xylene	2013/01/16	NC		%	50
			p+m-Xylene	2013/01/16	NC		%	50
			Total Xylenes	2013/01/16	NC		%	50
			F1 (C6-C10)	2013/01/16	NC		%	50
			F1 (C6-C10) - BTEX	2013/01/16	NC		%	50
3096276	THT	RPD [QF9469-01]	Moisture	2013/01/16	3.0		%	20
3096319	ZZ	Matrix Spike	o-Terphenyl	2013/01/17		87	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2013/01/17		99	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2013/01/17		94	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2013/01/17		100	%	50 - 130
		Spiked Blank	o-Terphenyl	2013/01/17		92	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2013/01/17		93	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2013/01/17		92	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2013/01/17		94	%	80 - 120
		Method Blank	o-Terphenyl	2013/01/17		94	%	50 - 130

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Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB306488

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3096319	ZZ	Method Blank	F2 (C10-C16 Hydrocarbons)	2013/01/17	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2013/01/17	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2013/01/17	<10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2013/01/17	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2013/01/17	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2013/01/17	NC		%	30
3097268	VTH	RPD	Moisture	2013/01/17	3.5		%	20
3097464	LHA	Matrix Spike	Free Cyanide	2013/01/18		103	%	75 - 125
		Spiked Blank	Free Cyanide	2013/01/18		98	%	80 - 120
		Method Blank	Free Cyanide	2013/01/18	<0.01		ug/g	
		RPD	Free Cyanide	2013/01/18	NC		%	35
3098297	YPA	Matrix Spike	Chromium (VI)	2013/01/18		95	%	75 - 125
		QC Standard	Chromium (VI)	2013/01/18		99	%	75 - 125
		Spiked Blank	Chromium (VI)	2013/01/18		95	%	80 - 120
		Method Blank	Chromium (VI)	2013/01/18	<0.2		ug/g	
		RPD	Chromium (VI)	2013/01/18	NC		%	35
3098398	KCO	Matrix Spike	Acid Extractable Antimony (Sb)	2013/01/18		97	%	75 - 125
			Acid Extractable Arsenic (As)	2013/01/18		100	%	75 - 125
			Acid Extractable Barium (Ba)	2013/01/18		101	%	75 - 125
			Acid Extractable Beryllium (Be)	2013/01/18		104	%	75 - 125
			Acid Extractable Boron (B)	2013/01/18		98	%	75 - 125
			Acid Extractable Cadmium (Cd)	2013/01/18		101	%	75 - 125
			Acid Extractable Chromium (Cr)	2013/01/18		96	%	75 - 125
			Acid Extractable Cobalt (Co)	2013/01/18		96	%	75 - 125
			Acid Extractable Copper (Cu)	2013/01/18		95	%	75 - 125
			Acid Extractable Lead (Pb)	2013/01/18		95	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2013/01/18		100	%	75 - 125
			Acid Extractable Nickel (Ni)	2013/01/18		98	%	75 - 125
			Acid Extractable Selenium (Se)	2013/01/18		101	%	75 - 125
			Acid Extractable Silver (Ag)	2013/01/18		101	%	75 - 125
			Acid Extractable Thallium (Tl)	2013/01/18		86	%	75 - 125
			Acid Extractable Uranium (U)	2013/01/18		101	%	75 - 125
			Acid Extractable Vanadium (V)	2013/01/18		100	%	75 - 125
			Acid Extractable Zinc (Zn)	2013/01/18		98	%	75 - 125
			Acid Extractable Mercury (Hg)	2013/01/18		94	%	75 - 125
		Spiked Blank	Acid Extractable Antimony (Sb)	2013/01/18		97	%	80 - 120
			Acid Extractable Arsenic (As)	2013/01/18		102	%	80 - 120
			Acid Extractable Barium (Ba)	2013/01/18		105	%	80 - 120
			Acid Extractable Beryllium (Be)	2013/01/18		101	%	80 - 120
			Acid Extractable Boron (B)	2013/01/18		96	%	80 - 120
			Acid Extractable Cadmium (Cd)	2013/01/18		101	%	80 - 120
			Acid Extractable Chromium (Cr)	2013/01/18		98	%	80 - 120
			Acid Extractable Cobalt (Co)	2013/01/18		102	%	80 - 120
			Acid Extractable Copper (Cu)	2013/01/18		101	%	80 - 120
			Acid Extractable Lead (Pb)	2013/01/18		99	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2013/01/18		99	%	80 - 120
			Acid Extractable Nickel (Ni)	2013/01/18		103	%	80 - 120
			Acid Extractable Selenium (Se)	2013/01/18		101	%	80 - 120
			Acid Extractable Silver (Ag)	2013/01/18		101	%	80 - 120
			Acid Extractable Thallium (Tl)	2013/01/18		95	%	80 - 120
			Acid Extractable Uranium (U)	2013/01/18		103	%	80 - 120
			Acid Extractable Vanadium (V)	2013/01/18		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2013/01/18		101	%	80 - 120
			Acid Extractable Mercury (Hg)	2013/01/18		102	%	80 - 120
		Method Blank	Acid Extractable Antimony (Sb)	2013/01/18	<0.20		ug/g	

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Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB306488

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3098398	KCO	Method Blank	Acid Extractable Arsenic (As)	2013/01/18	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2013/01/18	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2013/01/18	<0.20		ug/g	
			Acid Extractable Boron (B)	2013/01/18	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2013/01/18	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2013/01/18	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2013/01/18	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2013/01/18	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2013/01/18	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2013/01/18	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2013/01/18	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2013/01/18	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2013/01/18	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2013/01/18	<0.050		ug/g	
			Acid Extractable Uranium (U)	2013/01/18	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2013/01/18	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2013/01/18	<5.0		ug/g	
			Acid Extractable Mercury (Hg)	2013/01/18	<0.050		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2013/01/18	NC		%	30
			Acid Extractable Arsenic (As)	2013/01/18	NC		%	30
			Acid Extractable Barium (Ba)	2013/01/18	6.1		%	30
			Acid Extractable Beryllium (Be)	2013/01/18	NC		%	30
			Acid Extractable Boron (B)	2013/01/18	NC		%	30
			Acid Extractable Cadmium (Cd)	2013/01/18	NC		%	30
			Acid Extractable Chromium (Cr)	2013/01/18	5.5		%	30
			Acid Extractable Cobalt (Co)	2013/01/18	5.3		%	30
			Acid Extractable Copper (Cu)	2013/01/18	1.5		%	30
			Acid Extractable Lead (Pb)	2013/01/18	5.4		%	30
			Acid Extractable Molybdenum (Mo)	2013/01/18	NC		%	30
			Acid Extractable Nickel (Ni)	2013/01/18	2.5		%	30
			Acid Extractable Selenium (Se)	2013/01/18	NC		%	30
			Acid Extractable Silver (Ag)	2013/01/18	NC		%	30
			Acid Extractable Thallium (Tl)	2013/01/18	NC		%	30
			Acid Extractable Uranium (U)	2013/01/18	NC		%	30
			Acid Extractable Vanadium (V)	2013/01/18	NC		%	30
			Acid Extractable Zinc (Zn)	2013/01/18	NC		%	30
3098702	AFZ	Spiked Blank	Hot Water Ext. Boron (B)	2013/01/18		92	%	75 - 125
		Method Blank	Hot Water Ext. Boron (B)	2013/01/18	<0.050		ug/g	
3098903	KCO	Matrix Spike	Acid Extractable Antimony (Sb)	2013/01/18		95	%	75 - 125
			Acid Extractable Arsenic (As)	2013/01/18		99	%	75 - 125
			Acid Extractable Barium (Ba)	2013/01/18		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2013/01/18		101	%	75 - 125
			Acid Extractable Boron (B)	2013/01/18		88	%	75 - 125
			Acid Extractable Cadmium (Cd)	2013/01/18		98	%	75 - 125
			Acid Extractable Chromium (Cr)	2013/01/18		95	%	75 - 125
			Acid Extractable Cobalt (Co)	2013/01/18		93	%	75 - 125
			Acid Extractable Copper (Cu)	2013/01/18		95	%	75 - 125
			Acid Extractable Lead (Pb)	2013/01/18		92	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2013/01/18		97	%	75 - 125
			Acid Extractable Nickel (Ni)	2013/01/18		94	%	75 - 125
			Acid Extractable Selenium (Se)	2013/01/18		95	%	75 - 125
			Acid Extractable Silver (Ag)	2013/01/18		97	%	75 - 125
			Acid Extractable Thallium (Tl)	2013/01/18		88	%	75 - 125
			Acid Extractable Uranium (U)	2013/01/18		98	%	75 - 125
			Acid Extractable Vanadium (V)	2013/01/18		99	%	75 - 125

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Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB306488

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3098903	KCO	Matrix Spike	Acid Extractable Zinc (Zn)	2013/01/18		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2013/01/18		106	%	75 - 125
		Spiked Blank	Acid Extractable Antimony (Sb)	2013/01/18		95	%	80 - 120
			Acid Extractable Arsenic (As)	2013/01/18		101	%	80 - 120
			Acid Extractable Barium (Ba)	2013/01/18		103	%	80 - 120
			Acid Extractable Beryllium (Be)	2013/01/18		101	%	80 - 120
			Acid Extractable Boron (B)	2013/01/18		96	%	80 - 120
			Acid Extractable Cadmium (Cd)	2013/01/18		98	%	80 - 120
			Acid Extractable Chromium (Cr)	2013/01/18		94	%	80 - 120
			Acid Extractable Cobalt (Co)	2013/01/18		97	%	80 - 120
			Acid Extractable Copper (Cu)	2013/01/18		98	%	80 - 120
			Acid Extractable Lead (Pb)	2013/01/18		96	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2013/01/18		96	%	80 - 120
			Acid Extractable Nickel (Ni)	2013/01/18		97	%	80 - 120
			Acid Extractable Selenium (Se)	2013/01/18		98	%	80 - 120
			Acid Extractable Silver (Ag)	2013/01/18		96	%	80 - 120
			Acid Extractable Thallium (Tl)	2013/01/18		89	%	80 - 120
			Acid Extractable Uranium (U)	2013/01/18		97	%	80 - 120
			Acid Extractable Vanadium (V)	2013/01/18		95	%	80 - 120
			Acid Extractable Zinc (Zn)	2013/01/18		100	%	80 - 120
			Acid Extractable Mercury (Hg)	2013/01/18		89	%	80 - 120
		Method Blank	Acid Extractable Antimony (Sb)	2013/01/18	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2013/01/18	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2013/01/18	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2013/01/18	<0.20		ug/g	
			Acid Extractable Boron (B)	2013/01/18	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2013/01/18	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2013/01/18	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2013/01/18	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2013/01/18	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2013/01/18	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2013/01/18	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2013/01/18	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2013/01/18	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2013/01/18	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2013/01/18	<0.050		ug/g	
			Acid Extractable Uranium (U)	2013/01/18	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2013/01/18	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2013/01/18	<5.0		ug/g	
			Acid Extractable Mercury (Hg)	2013/01/18	<0.050		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2013/01/18	NC		%	30
			Acid Extractable Arsenic (As)	2013/01/18	NC		%	30
			Acid Extractable Barium (Ba)	2013/01/18	2.3		%	30
			Acid Extractable Beryllium (Be)	2013/01/18	NC		%	30
			Acid Extractable Boron (B)	2013/01/18	NC		%	30
			Acid Extractable Cadmium (Cd)	2013/01/18	2.7		%	30
			Acid Extractable Chromium (Cr)	2013/01/18	0.5		%	30
			Acid Extractable Cobalt (Co)	2013/01/18	2.3		%	30
			Acid Extractable Copper (Cu)	2013/01/18	0.6		%	30
			Acid Extractable Lead (Pb)	2013/01/18	1		%	30
			Acid Extractable Molybdenum (Mo)	2013/01/18	NC		%	30
			Acid Extractable Nickel (Ni)	2013/01/18	2.0		%	30
			Acid Extractable Selenium (Se)	2013/01/18	NC		%	30
			Acid Extractable Silver (Ag)	2013/01/18	NC		%	30
			Acid Extractable Thallium (Tl)	2013/01/18	NC		%	30

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Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB306488

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3098903	KCO	RPD	Acid Extractable Uranium (U)	2013/01/18	3.4		%	30
			Acid Extractable Vanadium (V)	2013/01/18	NC		%	30
			Acid Extractable Zinc (Zn)	2013/01/18	0.05		%	30
			Acid Extractable Mercury (Hg)	2013/01/18	NC		%	30
3098910	N_P	RPD	Moisture	2013/01/18	0.7		%	20
3100129	NYS	QC Standard	Conductivity	2013/01/21		100	%	90 - 110
		Spiked Blank	Conductivity	2013/01/21		101	%	90 - 110
		Method Blank	Conductivity	2013/01/21	<0.002		mS/cm	
		RPD	Conductivity	2013/01/21	0.9		%	10

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B306488

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

Cristina Carriere, Scientific Services

Jeevaraj Jeevaratrnam, Senior Analyst

Suzana Popovic, Supervisor, Hydrocarbons

==========

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

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

Maxxam IMMEDIATE TEST

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxam.ca

CHAIN OF CUS[TODY]

15-Jan-13 08:00
Mathura Thirukkuma
B306488
FW ENV-086

Page 1 of 1

INVOICE INFORMATION:

Company Name:	#1326 Golder Associates Ltd
Contact Name:	Central Acct:1112, 1113, 1118
Address:	2390 Argentia Rd Mississauga ON L5N 5Z7
Phone:	(905)567-4444 Fax: (905)567-6561
Email:	maxxam@golder.com, amber_moreira@golder.com

REPORT INFORMATION (if differs from invoice):

Company Name:	
Contact Name:	Bujing Guan
Address:	
Phone:	(905)567-6100 x1308 Fax:
Email:	bujing_guan@golder.com

PROJECT INFORMATION:

Quotation #:	B24075
P.O. #:	
Project #:	12-1152-0241 (2000)
Project Name:	
Site #:	
Sampled By:	JKC

[Lab Us]e Only:

BOTTLE ORDER #: 386430

C#386430-01-01

PROJECT MANAGER: Mathura Thirukkumaran

Regulation 153 (2011)

- [ ] Table 1 [ ] Res/Park [ ] Medium/Fine
- [ ] Table 2 [x] Ind/Comm [ ] Coarse
- [x] Table 3 [ ] Agri/Other
- [ ] Table ___ [ ] For RSC

Other Regulations

- [ ] CCME [ ] Sanitary Sewer Bylaw
- [ ] Reg. 558 [ ] Storm Sewer Bylaw
- [ ] MISA Municipality ___
- [ ] PWQO
- [ ] Other ___

SPECIAL INSTRUCTIONS

Include Criteria on Certificate of Analysis (Y/N)? ___

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	Metals + Inorganics	PHCs F1-F4	BTEX								# of Bottles	Comments
1		MW13-1 SA1	14 Jan 2013	AM	Soil	N	N	✓										2	
2		MW13-1 SA3	↓	↓	↓	N	N		✓	✓								5	
3		MW13-2 SA1	↓	PM	↓	N	N	✓										2	
4		MW13-2 SA2	↓	↓	↓	N	N		✓	✓								5	
5		Dup 1	↓	–	↓	N	N	✓										2	
6																			
7																			
8																			
9																			
10																			

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: [x]
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission) [ ]
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___ *(call lab for #)*

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted	Laboratory Use Only		
J.J. [signature]	15 Jan 2013	7:25	JIMMY LAM	2013/01/15	08:00		Time Sensitive	Temperature (°C) on Receipt: 0/0/2°C	Custody Seal Present / Intact: No ✓

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

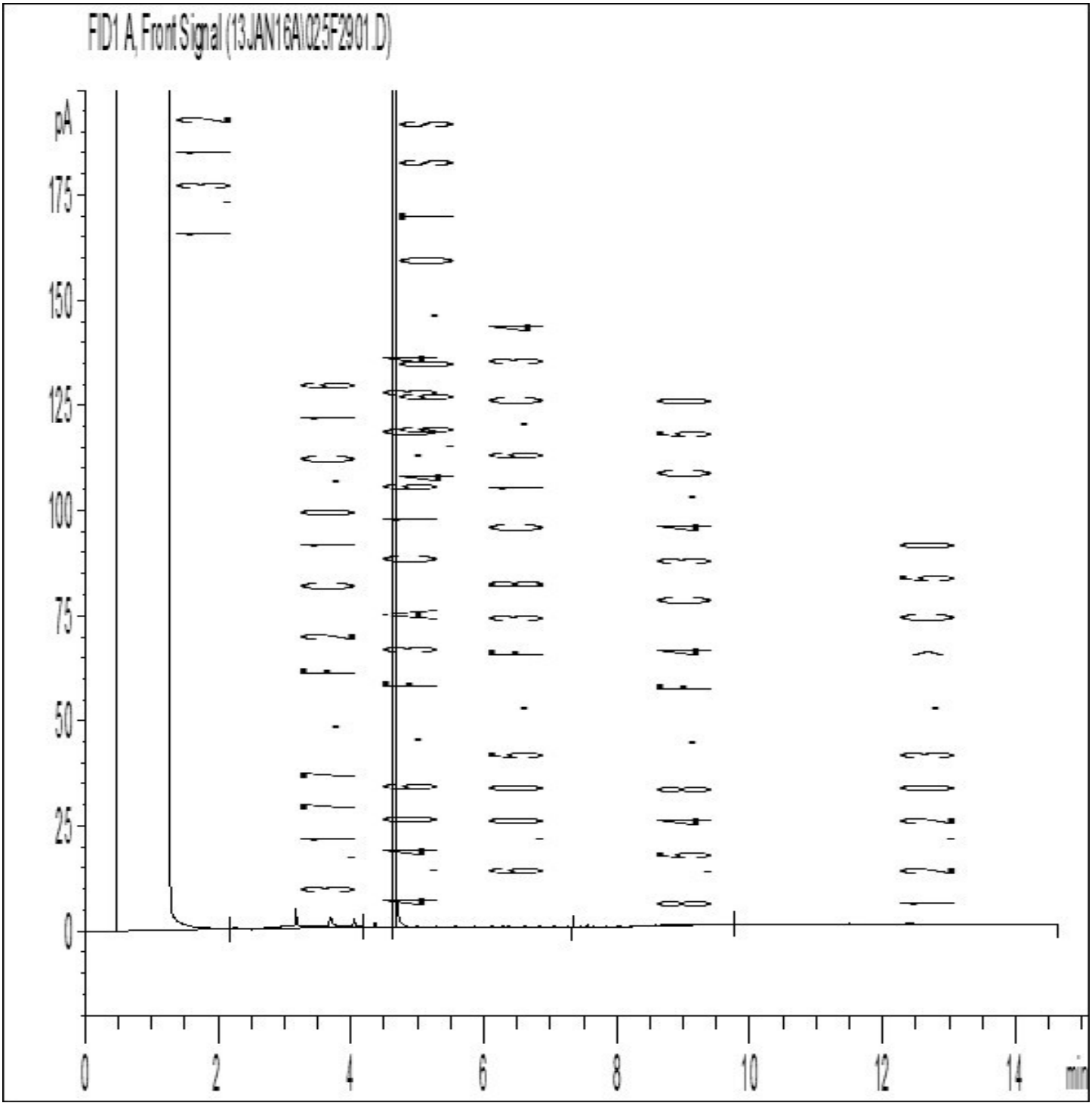
Success Through Science®

Golder Associates Ltd
Client Project #: 12-1152-0241

Report Date: 2013/01/21
Maxxam Job #: B306488
Maxxam Sample: QF9467

Client ID: MW13-1 SA3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

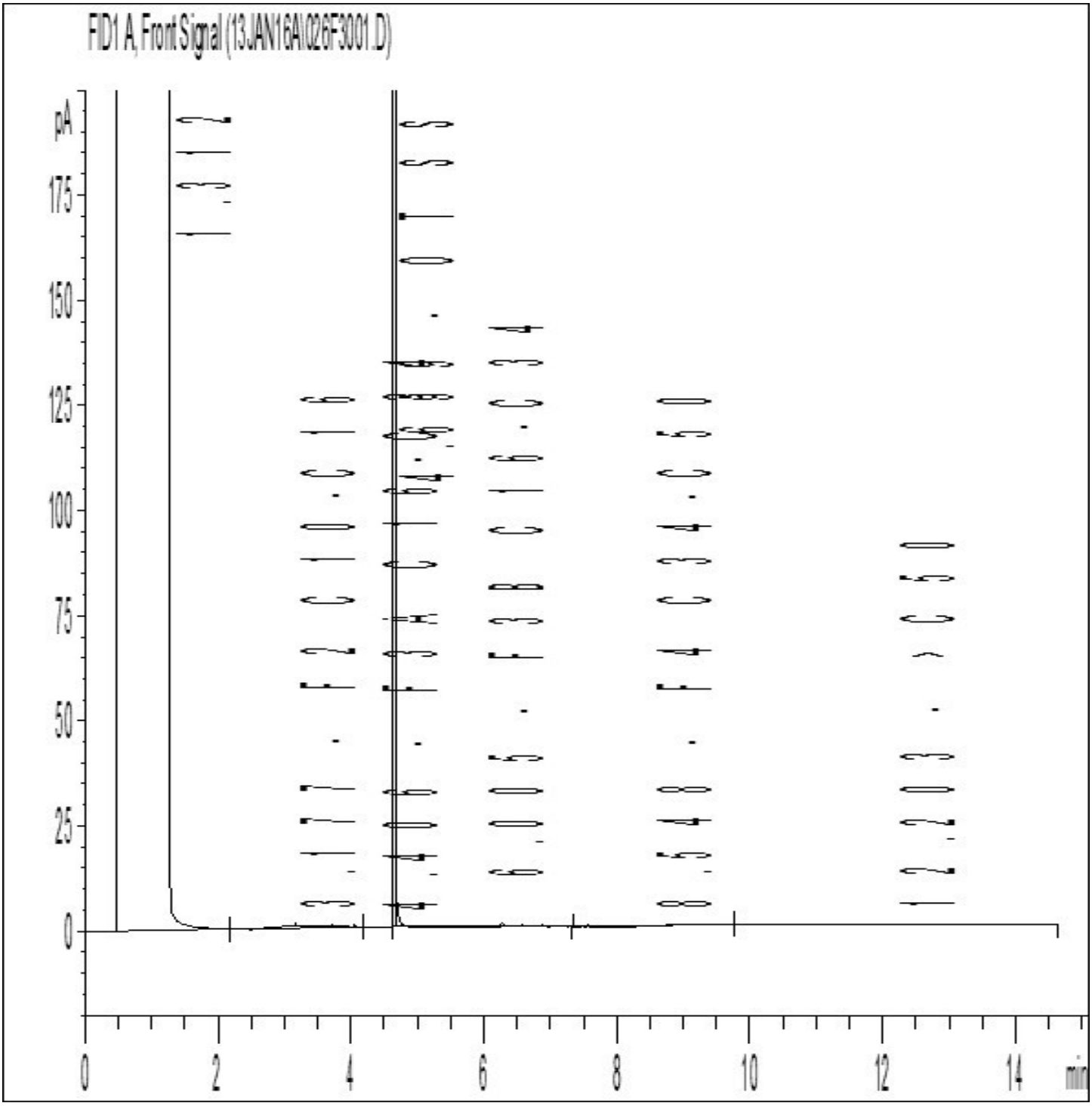
Success Through Science®

Golder Associates Ltd
Client Project #: 12-1152-0241

Report Date: 2013/01/21
Maxxam Job #: B306488
Maxxam Sample: QF9469

Client ID: MW13-2 SA2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 12-1152-0241
Site#: 12-1152-0241
Your C.O.C. #: 83836

Attention: Bujing Guan
Golder Associates Ltd
Mississauga - Standing Offer
2390 Argentia Rd
Mississauga, ON
L5N 5Z7

Report Date: 2013/01/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B306531
Received: 2013/01/15, 08:00

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Cyanide (WAD) in Leachates	1	N/A	2013/01/17	CAM SOP-00457	Ontario MOE CN-3015
Fluoride by ISE in Leachates	1	2013/01/17	2013/01/17	CAM SOP-00448	SM 4500FC
Mercury (TCLP Leachable) (mg/L)	1	N/A	2013/01/18	CAM SOP-00453	EPA 7470
Total Metals in TCLP Leachate by ICPMS	1	2013/01/17	2013/01/17	CAM SOP-00447	EPA 6020
Ignitability of a Sample	1	2013/01/21	2013/01/21	CAM SOP-00432	EPA 1030
Nitrate(NO3) + Nitrite(NO2) in Leachate	1	N/A	2013/01/17	CAM SOP-00440	SM 4500 NO3I/NO2B
Polychlorinated Biphenyl in Leachate	1	2013/01/17	2013/01/17	CAM SOP-00309	SW846 8082
TCLP Zero Headspace Extraction	1	2013/01/16	2013/01/16	CAM SOP-00430	EPA 1311 modified
VOCs in ZHE Leachates	1	2013/01/17	2013/01/18	CAM SOP 00226	EPA 8260 modified

Remarks:

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

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

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

Your Project #: 12-1152-0241
Site#: 12-1152-0241
Your C.O.C. #: 83836

Attention: Bujing Guan
Golder Associates Ltd
Mississauga - Standing Offer
2390 Argentia Rd
Mississauga, ON
L5N 5Z7

Report Date: 2013/01/21

CERTIFICATE OF ANALYSIS

Encryption Key

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

Mathura Thirukkumaran, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==========

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Total cover pages: 2

Maxxam Job #: B306531
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

O.REG 558 TCLP VOLATILE ORGANICS (SOIL)

Maxxam ID		QF9678		
Sampling Date		2013/01/14		
COC Number		83836		
	Units	**TCLP 1**	**RDL**	**QC Batch**
Charge/Prep Analysis				
Amount Extracted (Wet Weight) (g)	N/A	25	N/A	3095788
Volatile Organics				
Leachable Benzene	mg/L	<0.020	0.020	3096752
Leachable Carbon Tetrachloride	mg/L	<0.020	0.020	3096752
Leachable Chlorobenzene	mg/L	<0.020	0.020	3096752
Leachable Chloroform	mg/L	<0.020	0.020	3096752
Leachable 1,2-Dichlorobenzene	mg/L	<0.050	0.050	3096752
Leachable 1,4-Dichlorobenzene	mg/L	<0.050	0.050	3096752
Leachable 1,2-Dichloroethane	mg/L	<0.050	0.050	3096752
Leachable 1,1-Dichloroethylene	mg/L	<0.020	0.020	3096752
Leachable Methylene Chloride(Dichloromethane)	mg/L	<0.20	0.20	3096752
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	<1.0	1.0	3096752
Leachable Tetrachloroethylene	mg/L	<0.020	0.020	3096752
Leachable Trichloroethylene	mg/L	<0.020	0.020	3096752
Leachable Vinyl Chloride	mg/L	<0.020	0.020	3096752
Surrogate Recovery (%)				
Leachable 4-Bromofluorobenzene	%	91		3096752
Leachable D4-1,2-Dichloroethane	%	105		3096752
Leachable D8-Toluene	%	94		3096752

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B306531
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

O.REG 558 TCLP INORGANICS PACKAGE (SOIL)

Maxxam ID		QF9678		
Sampling Date		2013/01/14		
COC Number		83836		
	Units	**TCLP 1**	**RDL**	**QC Batch**
Inorganics				
Leachable Fluoride (F-)	mg/L	0.2	0.1	3096998
Leachable Free Cyanide	mg/L	<0.002	0.002	3097001
Leachable Nitrite (N)	mg/L	<0.1	0.1	3096999
Leachable Nitrate (N)	mg/L	<1	1	3096999
Leachable Nitrate + Nitrite	mg/L	<1	1	3096999
Metals				
Leachable Mercury (Hg)	mg/L	<0.001	0.001	3097729
Leachable Arsenic (As)	mg/L	<0.2	0.2	3097218
Leachable Barium (Ba)	mg/L	0.4	0.2	3097218
Leachable Boron (B)	mg/L	<0.1	0.1	3097218
Leachable Cadmium (Cd)	mg/L	<0.05	0.05	3097218
Leachable Chromium (Cr)	mg/L	<0.1	0.1	3097218
Leachable Lead (Pb)	mg/L	<0.1	0.1	3097218
Leachable Selenium (Se)	mg/L	<0.1	0.1	3097218
Leachable Silver (Ag)	mg/L	<0.01	0.01	3097218
Leachable Uranium (U)	mg/L	<0.01	0.01	3097218

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B306531
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

O.REG 558 TCLP PCBS (SOIL)

Maxxam ID		QF9678		
Sampling Date		2013/01/14		
COC Number		83836		
	Units	**TCLP 1**	**RDL**	**QC Batch**
PCBs				
Leachable Total PCB	ug/L	<3	3	3097189
Surrogate Recovery (%)				
Leachable Decachlorobiphenyl	%	102		3097189

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B306531
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

MISCELLANEOUS (SOIL)

Maxxam ID		QF9678	QF9678	
Sampling Date		2013/01/14	2013/01/14	
COC Number		83836	83836	
	Units	**TCLP 1**	**TCLP 1 Lab-Dup**	**QC Batch**
Inorganics				
Ignitability	N/A	NF/NI	NF/NI	3100298

QC Batch = Quality Control Batch

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Maxxam Job #: B306531
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

Test Summary

Maxxam ID QF9678
Sample ID TCLP 1
Matrix Soil

Collected 2013/01/14
Shipped
Received 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Cyanide (WAD) in Leachates	TECH/CN	3097001	N/A	2013/01/17	Louise Harding
Fluoride by ISE in Leachates	ISE	3096998	2013/01/17	2013/01/17	Surinder Rai
Mercury (TCLP Leachable) (mg/L)	CVAA	3097729	N/A	2013/01/18	Lawrence Cheung
Total Metals in TCLP Leachate by ICPMS	ICP1/MS	3097218	2013/01/17	2013/01/17	Hua Ren
Ignitability of a Sample	BAL	3100298	2013/01/21	2013/01/21	Min Yang
Nitrate(NO3) + Nitrite(NO2) in Leachate	LACH	3096999	N/A	2013/01/17	Chris Li
Polychlorinated Biphenyl in Leachate	GC/ECD	3097189	2013/01/17	2013/01/17	Li Peng
TCLP Zero Headspace Extraction		3095788	2013/01/16	2013/01/16	Fozia Tabasum
VOCs in ZHE Leachates	GC/MS	3096752	2013/01/17	2013/01/18	Adriana Zurita

Maxxam ID QF9678 Dup
Sample ID TCLP 1
Matrix Soil

Collected 2013/01/14
Shipped
Received 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Ignitability of a Sample	BAL	3100298	2013/01/21	2013/01/21	Min Yang

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Maxxam Job #: B306531
Report Date: 2013/01/21

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

Package 1	0.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample QF9678-01: NF/NI = Non-Flammable and Non-Ignitable

Results relate only to the items tested.

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Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: MB306531

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3096752	AZ	Matrix Spike	Leachable 4-Bromofluorobenzene	2013/01/17		100	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2013/01/17		92	%	70 - 130
			Leachable D8-Toluene	2013/01/17		104	%	70 - 130
			Leachable Benzene	2013/01/17		88	%	70 - 130
			Leachable Carbon Tetrachloride	2013/01/17		90	%	70 - 130
			Leachable Chlorobenzene	2013/01/17		89	%	70 - 130
			Leachable Chloroform	2013/01/17		92	%	70 - 130
			Leachable 1,2-Dichlorobenzene	2013/01/17		91	%	70 - 130
			Leachable 1,4-Dichlorobenzene	2013/01/17		95	%	70 - 130
			Leachable 1,2-Dichloroethane	2013/01/17		91	%	70 - 130
			Leachable 1,1-Dichloroethylene	2013/01/17		86	%	70 - 130
			Leachable Methylene Chloride(Dichlorometha	2013/01/17		80	%	70 - 130
			Leachable Methyl Ethyl Ketone (2-Butanone)	2013/01/17		80	%	60 - 140
			Leachable Tetrachloroethylene	2013/01/17		96	%	70 - 130
			Leachable Trichloroethylene	2013/01/17		91	%	70 - 130
			Leachable Vinyl Chloride	2013/01/17		90	%	70 - 130
		Spiked Blank	Leachable 4-Bromofluorobenzene	2013/01/17		101	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2013/01/17		98	%	70 - 130
			Leachable D8-Toluene	2013/01/17		100	%	70 - 130
			Leachable Benzene	2013/01/17		98	%	70 - 130
			Leachable Carbon Tetrachloride	2013/01/17		99	%	70 - 130
			Leachable Chlorobenzene	2013/01/17		98	%	70 - 130
			Leachable Chloroform	2013/01/17		104	%	70 - 130
			Leachable 1,2-Dichlorobenzene	2013/01/17		101	%	70 - 130
			Leachable 1,4-Dichlorobenzene	2013/01/17		104	%	70 - 130
			Leachable 1,2-Dichloroethane	2013/01/17		105	%	70 - 130
			Leachable 1,1-Dichloroethylene	2013/01/17		92	%	70 - 130
			Leachable Methylene Chloride(Dichlorometha	2013/01/17		92	%	70 - 130
			Leachable Methyl Ethyl Ketone (2-Butanone)	2013/01/17		95	%	60 - 140
			Leachable Tetrachloroethylene	2013/01/17		103	%	70 - 130
			Leachable Trichloroethylene	2013/01/17		100	%	70 - 130
			Leachable Vinyl Chloride	2013/01/17		97	%	70 - 130
		Method Blank	Leachable 4-Bromofluorobenzene	2013/01/17		91	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2013/01/17		104	%	70 - 130
			Leachable D8-Toluene	2013/01/17		91	%	70 - 130
			Leachable Benzene	2013/01/17	<0.020		mg/L	
			Leachable Carbon Tetrachloride	2013/01/17	<0.020		mg/L	
			Leachable Chlorobenzene	2013/01/17	<0.020		mg/L	
			Leachable Chloroform	2013/01/17	<0.020		mg/L	
			Leachable 1,2-Dichlorobenzene	2013/01/17	<0.050		mg/L	
			Leachable 1,4-Dichlorobenzene	2013/01/17	<0.050		mg/L	
			Leachable 1,2-Dichloroethane	2013/01/17	<0.050		mg/L	
			Leachable 1,1-Dichloroethylene	2013/01/17	<0.020		mg/L	
			Leachable Methylene Chloride(Dichlorometha	2013/01/17	<0.20		mg/L	
			Leachable Methyl Ethyl Ketone (2-Butanone)	2013/01/17	<1.0		mg/L	
			Leachable Tetrachloroethylene	2013/01/17	<0.020		mg/L	
			Leachable Trichloroethylene	2013/01/17	<0.020		mg/L	
			Leachable Vinyl Chloride	2013/01/17	<0.020		mg/L	
		RPD	Leachable Benzene	2013/01/17	NC		%	30
			Leachable Carbon Tetrachloride	2013/01/17	NC		%	30
			Leachable Chlorobenzene	2013/01/17	NC		%	30
			Leachable Chloroform	2013/01/17	NC		%	30
			Leachable 1,2-Dichlorobenzene	2013/01/17	NC		%	30
			Leachable 1,4-Dichlorobenzene	2013/01/17	NC		%	30
			Leachable 1,2-Dichloroethane	2013/01/17	NC		%	30

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Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB306531

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3096752	AZ	RPD	Leachable 1,1-Dichloroethylene	2013/01/17	NC		%	30
			Leachable Methylene Chloride(Dichlorometha	2013/01/17	NC		%	30
			Leachable Methyl Ethyl Ketone (2-Butanone)	2013/01/17	NC		%	30
			Leachable Tetrachloroethylene	2013/01/17	NC		%	30
			Leachable Trichloroethylene	2013/01/17	NC		%	30
			Leachable Vinyl Chloride	2013/01/17	NC		%	30
3096998	SAU	Matrix Spike	Leachable Fluoride (F-)	2013/01/17		101	%	80 - 120
		Leachate Blank	Leachable Fluoride (F-)	2013/01/17	<0.1		mg/L	
		Spiked Blank	Leachable Fluoride (F-)	2013/01/17		100	%	80 - 120
		Method Blank	Leachable Fluoride (F-)	2013/01/17	<0.1		mg/L	
		RPD	Leachable Fluoride (F-)	2013/01/17	NC		%	25
3096999	C_H	Matrix Spike	Leachable Nitrite (N)	2013/01/17		106	%	80 - 120
			Leachable Nitrate (N)	2013/01/17		98	%	80 - 120
			Leachable Nitrate + Nitrite	2013/01/17		100	%	80 - 120
		Leachate Blank	Leachable Nitrite (N)	2013/01/17	<0.1		mg/L	
			Leachable Nitrate (N)	2013/01/17	<1		mg/L	
			Leachable Nitrate + Nitrite	2013/01/17	<1		mg/L	
		Spiked Blank	Leachable Nitrite (N)	2013/01/17		104	%	85 - 115
			Leachable Nitrate (N)	2013/01/17		98	%	85 - 115
			Leachable Nitrate + Nitrite	2013/01/17		99	%	85 - 115
		Method Blank	Leachable Nitrite (N)	2013/01/17	<0.1		mg/L	
			Leachable Nitrate (N)	2013/01/17	<1		mg/L	
			Leachable Nitrate + Nitrite	2013/01/17	<1		mg/L	
		RPD	Leachable Nitrite (N)	2013/01/17	NC		%	25
			Leachable Nitrate (N)	2013/01/17	NC		%	25
			Leachable Nitrate + Nitrite	2013/01/17	NC		%	25
3097001	LHA	Matrix Spike	Leachable Free Cyanide	2013/01/17		108	%	80 - 120
		Leachate Blank	Leachable Free Cyanide	2013/01/17	<0.002		mg/L	
		Spiked Blank	Leachable Free Cyanide	2013/01/17		103	%	80 - 120
		Method Blank	Leachable Free Cyanide	2013/01/17	<0.002		mg/L	
		RPD	Leachable Free Cyanide	2013/01/17	NC		%	20
3097189	LPG	Matrix Spike	Leachable Decachlorobiphenyl	2013/01/17		107	%	60 - 130
			Leachable Total PCB	2013/01/17		93	%	60 - 130
		Spiked Blank	Leachable Decachlorobiphenyl	2013/01/17		96	%	60 - 130
			Leachable Total PCB	2013/01/17		83	%	60 - 130
		Method Blank	Leachable Decachlorobiphenyl	2013/01/17		105	%	60 - 130
			Leachable Total PCB	2013/01/17	<3		ug/L	
		RPD	Leachable Total PCB	2013/01/17	NC		%	40
3097218	HRE	Matrix Spike	Leachable Arsenic (As)	2013/01/17		104	%	75 - 125
			Leachable Barium (Ba)	2013/01/17		NC	%	75 - 125
			Leachable Boron (B)	2013/01/17		108	%	75 - 125
			Leachable Cadmium (Cd)	2013/01/17		99	%	75 - 125
			Leachable Chromium (Cr)	2013/01/17		97	%	75 - 125
			Leachable Lead (Pb)	2013/01/17		94	%	75 - 125
			Leachable Selenium (Se)	2013/01/17		103	%	75 - 125
			Leachable Silver (Ag)	2013/01/17		92	%	75 - 125
			Leachable Uranium (U)	2013/01/17		93	%	75 - 125
		Leachate Blank	Leachable Arsenic (As)	2013/01/17	<0.2		mg/L	
			Leachable Barium (Ba)	2013/01/17	<0.2		mg/L	
			Leachable Boron (B)	2013/01/17	<0.1		mg/L	
			Leachable Cadmium (Cd)	2013/01/17	<0.05		mg/L	
			Leachable Chromium (Cr)	2013/01/17	<0.1		mg/L	
			Leachable Lead (Pb)	2013/01/17	<0.1		mg/L	
			Leachable Selenium (Se)	2013/01/17	<0.1		mg/L	
			Leachable Silver (Ag)	2013/01/17	<0.01		mg/L	

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Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB306531

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3097218	HRE	Leachate Blank	Leachable Uranium (U)	2013/01/17	<0.01		mg/L	
		Spiked Blank	Leachable Arsenic (As)	2013/01/17		98	%	75 - 125
			Leachable Barium (Ba)	2013/01/17		102	%	75 - 125
			Leachable Boron (B)	2013/01/17		92	%	75 - 125
			Leachable Cadmium (Cd)	2013/01/17		98	%	75 - 125
			Leachable Chromium (Cr)	2013/01/17		95	%	75 - 125
			Leachable Lead (Pb)	2013/01/17		95	%	75 - 125
			Leachable Selenium (Se)	2013/01/17		96	%	75 - 125
			Leachable Silver (Ag)	2013/01/17		94	%	75 - 125
			Leachable Uranium (U)	2013/01/17		92	%	75 - 125
		Method Blank	Leachable Arsenic (As)	2013/01/17	<0.2		mg/L	
			Leachable Barium (Ba)	2013/01/17	<0.2		mg/L	
			Leachable Boron (B)	2013/01/17	<0.1		mg/L	
			Leachable Cadmium (Cd)	2013/01/17	<0.05		mg/L	
			Leachable Chromium (Cr)	2013/01/17	<0.1		mg/L	
			Leachable Lead (Pb)	2013/01/17	<0.1		mg/L	
			Leachable Selenium (Se)	2013/01/17	<0.1		mg/L	
			Leachable Silver (Ag)	2013/01/17	<0.01		mg/L	
			Leachable Uranium (U)	2013/01/17	<0.01		mg/L	
		RPD	Leachable Arsenic (As)	2013/01/17	NC		%	35
			Leachable Barium (Ba)	2013/01/17	3.0		%	35
			Leachable Boron (B)	2013/01/17	NC		%	35
			Leachable Cadmium (Cd)	2013/01/17	NC		%	35
			Leachable Chromium (Cr)	2013/01/17	NC		%	35
			Leachable Lead (Pb)	2013/01/17	NC		%	35
			Leachable Selenium (Se)	2013/01/17	NC		%	35
			Leachable Silver (Ag)	2013/01/17	NC		%	35
			Leachable Uranium (U)	2013/01/17	NC		%	35
3097729	LCH	Matrix Spike	Leachable Mercury (Hg)	2013/01/18		106	%	80 - 120
		Leachate Blank	Leachable Mercury (Hg)	2013/01/18	<0.001		mg/L	
		Spiked Blank	Leachable Mercury (Hg)	2013/01/18		104	%	80 - 120
		Method Blank	Leachable Mercury (Hg)	2013/01/18	<0.001		mg/L	
		RPD	Leachable Mercury (Hg)	2013/01/18	NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B306531

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

Charles Ancker, B.Sc., M.Sc., C.Chem, Senior Analyst

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

==========

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

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15-Jan-13 08:00
Mathura Thirukkuma
B306531
FW ENV-086

Maxxam IMMEDIATE TEST 6740 Campobello Road, Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Fre[illegible]

CHAIN OF CUSTODY RECORD

83836

Page 1 of 1

INVOICE INFORMATION		REPORT INFORMATION		PROJECT INFORMATION		MAXXAM JOB NUMBER
Company Name:	Golder Associates	Company Name:		Quotation #:	B24075	
Contact Name:	Bujing Guan	Contact Name:		P.O. #:		CHAIN OF CUSTODY #
Address:	6925 Century Ave, Suite 100 Mississauga, ON	Address:		Project #:	12-1152-0241 (2000)	00
				Site Location:		
Phone:	905 567-4444 Fax: 905 567-6561	Phone:	Fax:	Site #:		
Email:	b-guan@golder.com	Email:		Sampled By:	JKC	

Note: For MOE Regulated Drinking Water samples, please use the Drinking Water CofC.

Regulation 153 (2011): Table 1 / Table 2 / Table 3 / Table ___ ; Res/Park / Ind/Comm / Agri/Other ; Med/Fine / Coarse ; For RSC: Yes / No

Other Regulations: CCME / [X] Reg. 558 / MISA / PWQO / Other (specify): ; Sanitary Sewer Bylaw / Storm Sewer Bylaw ; Municipality:

Include Criteria on Certificate of Analysis (Y/N)?

SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM.

ANALYSIS REQUESTED (Please be specific)

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	MOE Regulated Drinking Water? (Y / N)	Metals Field Filtered? (Y / N)	Metals + Inorganics	VOCs	PCB's	Ignitability	# of Cont.	COMMENTS / TAT COMMENTS
1	TCLP 1	14 Jan 2013	Pm	SOIL	N	N	✓	✓	✓	✓	8	
2												
3												
4												
5												
6												
7												
8												
9												
10												

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT: [X]
(5-7 working days for most tests)

Rush TAT:
Samples must be received by 3pm to guarantee your TAT

Rush Confirmation #: PN ____
[ ] 1 day [ ] 2 days [ ] 3 days

Date Req'd:

TATs for certain tests are > 5 days. Please contact your Project Manager for details.

*RELINQUISHED BY (Signature/Print)	Date (YYYY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date (YYYY/MM/DD)	Time:	#JARS USED AND NOT SUBMITTED
[signature] / J. Cashube	15 Jan 2013	7:25	[signature] Timmy. Lin	2013/01/15	08:00	

Laboratory Use Only

Custody Seal	Yes	No	Temperature (°C) on Receipt
Present		✓	0/0/2 °C
Intact			

***MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.**

APPENDIX C

Certificate of Analysis - Groundwater

Your Project #: 12-1152-0241
Site#: 12-1152-0241
Your C.O.C. #: 38688801, 386888-01-01

Attention: Bujing Guan
Golder Associates Ltd
Mississauga - Standing Offer
2390 Argentia Rd
Mississauga, ON
L5N 5Z7

Report Date: 2013/01/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B309089
Received: 2013/01/18, 12:26

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
1,3-Dichloropropene Sum	3	N/A	2013/01/24	CAM SOP-00226	EPA 8260
Chloride by Automated Colourimetry	2	N/A	2013/01/21	CAM SOP-00463	EPA 325.2
Chromium (VI) in Water	2	N/A	2013/01/21	CAM SOP-00436	EPA 7199
Free (WAD) Cyanide	2	N/A	2013/01/23	CAM SOP-00457	Ontario MOE CN-E3015
Petroleum Hydro. CCME F1 & BTEX in Water	3	N/A	2013/01/22	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	2013/01/22	2013/01/23	CAM SOP-00316	CCME Hydrocarbons
Mercury	2	2013/01/21	2013/01/22	CAM SOP-00453	SW-846 7470A
Dissolved Metals by ICPMS	3	N/A	2013/01/22	CAM SOP-00447	EPA 6020
Volatile Organic Compounds in Water	4	N/A	2013/01/24	CAM SOP 00226	EPA 8260 modified

Remarks:

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

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

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

Your Project #: 12-1152-0241
Site#: 12-1152-0241
Your C.O.C. #: 38688801, 386888-01-01

Attention: Bujing Guan
Golder Associates Ltd
Mississauga - Standing Offer
2390 Argentia Rd
Mississauga, ON
L5N 5Z7

Report Date: 2013/01/24

CERTIFICATE OF ANALYSIS

-2-

Encryption Key

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

Mathura Thirukkumaran, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==========

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

Total cover pages: 2

Maxxam Job #: B309089
Report Date: 2013/01/24

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

O'REG 153 DISSOLVED ICPMS METALS (WATER)

Maxxam ID		QH1459		
Sampling Date		2013/01/18		
COC Number		386888-01-01		
	Units	**Dup-GW**	**RDL**	**QC Batch**
Metals				
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	3100276
Dissolved Arsenic (As)	ug/L	<1.0	1.0	3100276
Dissolved Barium (Ba)	ug/L	47	2.0	3100276
Dissolved Beryllium (Be)	ug/L	<0.50	0.50	3100276
Dissolved Boron (B)	ug/L	20	10	3100276
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	3100276
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	3100276
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	3100276
Dissolved Copper (Cu)	ug/L	1.1	1.0	3100276
Dissolved Lead (Pb)	ug/L	<0.50	0.50	3100276
Dissolved Molybdenum (Mo)	ug/L	<0.50	0.50	3100276
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	3100276
Dissolved Selenium (Se)	ug/L	<2.0	2.0	3100276
Dissolved Silver (Ag)	ug/L	<0.10	0.10	3100276
Dissolved Sodium (Na)	ug/L	190000	100	3100276
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	3100276
Dissolved Uranium (U)	ug/L	0.15	0.10	3100276
Dissolved Vanadium (V)	ug/L	0.84	0.50	3100276
Dissolved Zinc (Zn)	ug/L	8.9	5.0	3100276

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B309089
Report Date: 2013/01/24

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

O'REG 153 METALS & INORGANICS PKG (WTR)

Maxxam ID		QH1457	QH1457		QH1458		
Sampling Date		2013/01/18	2013/01/18		2013/01/18		
COC Number		386888-01-01	386888-01-01		386888-01-01		
	Units	**MW13-1**	**MW13-1 Lab-Dup**	**RDL**	**MW13-2**	**RDL**	**QC Batch**
Inorganics							
Free Cyanide	ug/L	<2		2	<2	2	3101805
Dissolved Chloride (Cl)	mg/L	260		3	220	2	3099732
Metals							
Chromium (VI)	ug/L	<5.0	<5.0	5.0	<5.0	5.0	3100143
Mercury (Hg)	ug/L	<0.1		0.1	<0.1	0.1	3100787
Dissolved Antimony (Sb)	ug/L	<0.50		0.50	<0.50	0.50	3100276
Dissolved Arsenic (As)	ug/L	<1.0		1.0	<1.0	1.0	3100276
Dissolved Barium (Ba)	ug/L	50		2.0	48	2.0	3100276
Dissolved Beryllium (Be)	ug/L	<0.50		0.50	<0.50	0.50	3100276
Dissolved Boron (B)	ug/L	22		10	22	10	3100276
Dissolved Cadmium (Cd)	ug/L	<0.10		0.10	<0.10	0.10	3100276
Dissolved Chromium (Cr)	ug/L	<5.0		5.0	<5.0	5.0	3100276
Dissolved Cobalt (Co)	ug/L	<0.50		0.50	1.5	0.50	3100276
Dissolved Copper (Cu)	ug/L	1.3		1.0	1.2	1.0	3100276
Dissolved Lead (Pb)	ug/L	2.0		0.50	<0.50	0.50	3100276
Dissolved Molybdenum (Mo)	ug/L	<0.50		0.50	<0.50	0.50	3100276
Dissolved Nickel (Ni)	ug/L	<1.0		1.0	<1.0	1.0	3100276
Dissolved Selenium (Se)	ug/L	<2.0		2.0	<2.0	2.0	3100276
Dissolved Silver (Ag)	ug/L	<0.10		0.10	<0.10	0.10	3100276
Dissolved Sodium (Na)	ug/L	210000		100	190000	100	3100276
Dissolved Thallium (Tl)	ug/L	<0.050		0.050	<0.050	0.050	3100276
Dissolved Uranium (U)	ug/L	0.29		0.10	0.15	0.10	3100276
Dissolved Vanadium (V)	ug/L	0.64		0.50	0.69	0.50	3100276
Dissolved Zinc (Zn)	ug/L	5.6		5.0	13	5.0	3100276

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B309089
Report Date: 2013/01/24

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

O'REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		QH1457	QH1457	QH1458	QH1459		
Sampling Date		2013/01/18	2013/01/18	2013/01/18	2013/01/18		
COC Number		386888-01-01	386888-01-01	386888-01-01	386888-01-01		
	Units	**MW13-1**	**MW13-1 Lab-Dup**	**MW13-2**	**Dup-GW**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/L				<0.20	0.20	3100457
Toluene	ug/L				<0.20	0.20	3100457
Ethylbenzene	ug/L				<0.20	0.20	3100457
o-Xylene	ug/L				<0.20	0.20	3100457
p+m-Xylene	ug/L				<0.40	0.40	3100457
Total Xylenes	ug/L				<0.40	0.40	3100457
F1 (C6-C10)	ug/L	<25	<25	<25	<25	25	3100457
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	25	3100457
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100		<100	<100	100	3101780
F3 (C16-C34 Hydrocarbons)	ug/L	<100		<100	<100	100	3101780
F4 (C34-C50 Hydrocarbons)	ug/L	<100		<100	<100	100	3101780
Reached Baseline at C50	ug/L	Yes		Yes	Yes		3101780
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	100	101	102	101		3100457
4-Bromofluorobenzene	%	99	100	99	98		3100457
D10-Ethylbenzene	%	118	119	120	121		3100457
D4-1,2-Dichloroethane	%	101	102	100	101		3100457
o-Terphenyl	%	109		108	108		3101780

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B309089
Report Date: 2013/01/24

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

O'REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		QH1457	QH1458	QH1460	QH1461		
Sampling Date		2013/01/18	2013/01/18	2013/01/18	2013/01/18		
COC Number		386888-01-01	386888-01-01	386888-01-01	386888-01-01		
	Units	**MW13-1**	**MW13-2**	**Trip spike**	**Trip blank**	**RDL**	**QC Batch**
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	<0.50		<0.50	0.50	3098391
Volatile Organics							
Acetone (2-Propanone)	ug/L	<10	<10	110	<10	10	3101695
Benzene	ug/L	<0.20	<0.20	95	<0.20	0.20	3101695
Bromodichloromethane	ug/L	<0.50	<0.50	95	<0.50	0.50	3101695
Bromoform	ug/L	<1.0	<1.0	90	<1.0	1.0	3101695
Bromomethane	ug/L	<0.50	<0.50	95	<0.50	0.50	3101695
Carbon Tetrachloride	ug/L	<0.20	<0.20	95	<0.20	0.20	3101695
Chlorobenzene	ug/L	<0.20	<0.20	95	<0.20	0.20	3101695
Chloroform	ug/L	<0.20	<0.20	95	<0.20	0.20	3101695
Dibromochloromethane	ug/L	<0.50	<0.50	90	<0.50	0.50	3101695
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	90	<0.50	0.50	3101695
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	85	<0.50	0.50	3101695
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	85	<0.50	0.50	3101695
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	<1.0	85	<1.0	1.0	3101695
1,1-Dichloroethane	ug/L	<0.20	<0.20	100	<0.20	0.20	3101695
1,2-Dichloroethane	ug/L	<0.50	<0.50	100	<0.50	0.50	3101695
1,1-Dichloroethylene	ug/L	<0.20	<0.20	100	<0.20	0.20	3101695
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	95	<0.50	0.50	3101695
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	95	<0.50	0.50	3101695
1,2-Dichloropropane	ug/L	<0.20	<0.20	95	<0.20	0.20	3101695
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	80	<0.30	0.30	3101695
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	80	<0.40	0.40	3101695
Ethylbenzene	ug/L	<0.20	<0.20	85	<0.20	0.20	3101695
Ethylene Dibromide	ug/L	<0.20	<0.20	95	<0.20	0.20	3101695
Hexane	ug/L	<1.0	<1.0	55	<1.0	1.0	3101695
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	95	<2.0	2.0	3101695
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	95	<5.0	5.0	3101695
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	<10	110	<10	10	3101695
Methyl t-butyl ether (MTBE)	ug/L	<0.50	<0.50	100	<0.50	0.50	3101695
Styrene	ug/L	<0.50	<0.50	80	<0.50	0.50	3101695
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	90	<0.50	0.50	3101695

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B309089
Report Date: 2013/01/24

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

O'REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		QH1457	QH1458	QH1460	QH1461		
Sampling Date		2013/01/18	2013/01/18	2013/01/18	2013/01/18		
COC Number		386888-01-01	386888-01-01	386888-01-01	386888-01-01		
	Units	**MW13-1**	**MW13-2**	**Trip spike**	**Trip blank**	**RDL**	**QC Batch**
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	95	<0.50	0.50	3101695
Tetrachloroethylene	ug/L	<0.20	<0.20	85	<0.20	0.20	3101695
Toluene	ug/L	<0.20	<0.20	90	<0.20	0.20	3101695
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	95	<0.20	0.20	3101695
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	100	<0.50	0.50	3101695
Trichloroethylene	ug/L	<0.20	<0.20	95	<0.20	0.20	3101695
Vinyl Chloride	ug/L	<0.20	<0.20	95	<0.20	0.20	3101695
p+m-Xylene	ug/L	<0.20	<0.20	85	<0.20	0.20	3101695
o-Xylene	ug/L	<0.20	<0.20	85	<0.20	0.20	3101695
Xylene (Total)	ug/L	<0.20	<0.20		<0.20	0.20	3101695
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	<0.50	95	<0.50	0.50	3101695
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	96	95	98	96		3101695
D4-1,2-Dichloroethane	%	100	101	104	104		3101695
D8-Toluene	%	98	98	98	98		3101695

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B309089
Report Date: 2013/01/24

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

Test Summary

Maxxam ID QH1457 **Collected** 2013/01/18
Sample ID MW13-1 **Shipped**
Matrix Water **Received** 2013/01/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	3098391	N/A	2013/01/24	Automated Statchk
Chloride by Automated Colourimetry	AC	3099732	N/A	2013/01/21	Alina Dobreanu
Chromium (VI) in Water	IC	3100143	N/A	2013/01/21	Yogesh Patel
Free (WAD) Cyanide	TECH/CN	3101805	N/A	2013/01/23	Louise Harding
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	3100457	N/A	2013/01/22	Simon Xi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3101780	2013/01/22	2013/01/23	Biljana Lazovic
Mercury	CVAA	3100787	2013/01/21	2013/01/22	Magdalena Carlos
Dissolved Metals by ICPMS	ICP/MS	3100276	N/A	2013/01/22	Prempal Bhatti
Volatile Organic Compounds in Water	GC/MS	3101695	N/A	2013/01/24	John Wu

Maxxam ID QH1457 Dup **Collected** 2013/01/18
Sample ID MW13-1 **Shipped**
Matrix Water **Received** 2013/01/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Chromium (VI) in Water	IC	3100143	N/A	2013/01/21	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	3100457	N/A	2013/01/22	Simon Xi

Maxxam ID QH1458 **Collected** 2013/01/18
Sample ID MW13-2 **Shipped**
Matrix Water **Received** 2013/01/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	3098391	N/A	2013/01/24	Automated Statchk
Chloride by Automated Colourimetry	AC	3099732	N/A	2013/01/21	Alina Dobreanu
Chromium (VI) in Water	IC	3100143	N/A	2013/01/21	Yogesh Patel
Free (WAD) Cyanide	TECH/CN	3101805	N/A	2013/01/23	Louise Harding
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	3100457	N/A	2013/01/22	Simon Xi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3101780	2013/01/22	2013/01/23	Biljana Lazovic
Mercury	CVAA	3100787	2013/01/21	2013/01/22	Magdalena Carlos
Dissolved Metals by ICPMS	ICP/MS	3100276	N/A	2013/01/22	Prempal Bhatti
Volatile Organic Compounds in Water	GC/MS	3101695	N/A	2013/01/24	John Wu

Maxxam ID QH1459 **Collected** 2013/01/18
Sample ID Dup-GW **Shipped**
Matrix Water **Received** 2013/01/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	3100457	N/A	2013/01/22	Simon Xi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3101780	2013/01/22	2013/01/23	Biljana Lazovic
Dissolved Metals by ICPMS	ICP/MS	3100276	N/A	2013/01/22	Prempal Bhatti

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Maxxam Job #: B309089
Report Date: 2013/01/24

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

Test Summary

Maxxam ID QH1460 **Collected** 2013/01/18
Sample ID Trip spike **Shipped**
Matrix Water **Received** 2013/01/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	GC/MS	3101695	N/A	2013/01/24	John Wu

Maxxam ID QH1461 **Collected** 2013/01/18
Sample ID Trip blank **Shipped**
Matrix Water **Received** 2013/01/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	3098391	N/A	2013/01/24	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	3101695	N/A	2013/01/24	John Wu

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

Maxxam Job #: B309089
Report Date: 2013/01/24

Golder Associates Ltd
Client Project #: 12-1152-0241

Sampler Initials: JKC

Package 1	3.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample QH1460-01: VOC Analysis: Trip Spike results are expressed as percent recoveries.

Results relate only to the items tested.

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Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: MB309089

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3099732	ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/01/21		NC	%	80 - 120
		Spiked Blank	Dissolved Chloride (Cl)	2013/01/21		104	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2013/01/21	<1		mg/L	
		RPD	Dissolved Chloride (Cl)	2013/01/21	0.9		%	20
3100143	YPA	Matrix Spike [QH1457-05]	Chromium (VI)	2013/01/21		93	%	80 - 120
		Spiked Blank	Chromium (VI)	2013/01/21		92	%	80 - 120
		Method Blank	Chromium (VI)	2013/01/21	<5.0		ug/L	
		RPD [QH1457-05]	Chromium (VI)	2013/01/21	NC		%	20
3100276	PBA	Matrix Spike	Dissolved Antimony (Sb)	2013/01/22		109	%	80 - 120
			Dissolved Arsenic (As)	2013/01/22		102	%	80 - 120
			Dissolved Barium (Ba)	2013/01/22		97	%	80 - 120
			Dissolved Beryllium (Be)	2013/01/22		102	%	80 - 120
			Dissolved Boron (B)	2013/01/22		NC	%	80 - 120
			Dissolved Cadmium (Cd)	2013/01/22		102	%	80 - 120
			Dissolved Chromium (Cr)	2013/01/22		100	%	80 - 120
			Dissolved Cobalt (Co)	2013/01/22		97	%	80 - 120
			Dissolved Copper (Cu)	2013/01/22		91	%	80 - 120
			Dissolved Lead (Pb)	2013/01/22		96	%	80 - 120
			Dissolved Molybdenum (Mo)	2013/01/22		109	%	80 - 120
			Dissolved Nickel (Ni)	2013/01/22		95	%	80 - 120
			Dissolved Selenium (Se)	2013/01/22		101	%	80 - 120
			Dissolved Silver (Ag)	2013/01/22		73 (1)	%	80 - 120
			Dissolved Sodium (Na)	2013/01/22		NC	%	80 - 120
			Dissolved Thallium (Tl)	2013/01/22		96	%	80 - 120
			Dissolved Uranium (U)	2013/01/22		102	%	80 - 120
			Dissolved Vanadium (V)	2013/01/22		102	%	80 - 120
			Dissolved Zinc (Zn)	2013/01/22		94	%	80 - 120
		Spiked Blank	Dissolved Antimony (Sb)	2013/01/22		101	%	80 - 120
			Dissolved Arsenic (As)	2013/01/22		98	%	80 - 120
			Dissolved Barium (Ba)	2013/01/22		100	%	80 - 120
			Dissolved Beryllium (Be)	2013/01/22		100	%	80 - 120
			Dissolved Boron (B)	2013/01/22		105	%	80 - 120
			Dissolved Cadmium (Cd)	2013/01/22		102	%	80 - 120
			Dissolved Chromium (Cr)	2013/01/22		99	%	80 - 120
			Dissolved Cobalt (Co)	2013/01/22		99	%	80 - 120
			Dissolved Copper (Cu)	2013/01/22		97	%	80 - 120
			Dissolved Lead (Pb)	2013/01/22		99	%	80 - 120
			Dissolved Molybdenum (Mo)	2013/01/22		100	%	80 - 120
			Dissolved Nickel (Ni)	2013/01/22		98	%	80 - 120
			Dissolved Selenium (Se)	2013/01/22		101	%	80 - 120
			Dissolved Silver (Ag)	2013/01/22		99	%	80 - 120
			Dissolved Sodium (Na)	2013/01/22		105	%	80 - 120
			Dissolved Thallium (Tl)	2013/01/22		100	%	80 - 120
			Dissolved Uranium (U)	2013/01/22		101	%	80 - 120
			Dissolved Vanadium (V)	2013/01/22		100	%	80 - 120
			Dissolved Zinc (Zn)	2013/01/22		98	%	80 - 120
		Method Blank	Dissolved Antimony (Sb)	2013/01/22	<0.50		ug/L	
			Dissolved Arsenic (As)	2013/01/22	<1.0		ug/L	
			Dissolved Barium (Ba)	2013/01/22	<2.0		ug/L	
			Dissolved Beryllium (Be)	2013/01/22	<0.50		ug/L	
			Dissolved Boron (B)	2013/01/22	<10		ug/L	
			Dissolved Cadmium (Cd)	2013/01/22	<0.10		ug/L	
			Dissolved Chromium (Cr)	2013/01/22	<5.0		ug/L	
			Dissolved Cobalt (Co)	2013/01/22	<0.50		ug/L	

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Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
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Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB309089

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3100276	PBA	Method Blank	Dissolved Copper (Cu)	2013/01/22	<1.0		ug/L	
			Dissolved Lead (Pb)	2013/01/22	<0.50		ug/L	
			Dissolved Molybdenum (Mo)	2013/01/22	<0.50		ug/L	
			Dissolved Nickel (Ni)	2013/01/22	<1.0		ug/L	
			Dissolved Selenium (Se)	2013/01/22	<2.0		ug/L	
			Dissolved Silver (Ag)	2013/01/22	<0.10		ug/L	
			Dissolved Sodium (Na)	2013/01/22	110, RDL=100		ug/L	
			Dissolved Thallium (Tl)	2013/01/22	<0.050		ug/L	
			Dissolved Uranium (U)	2013/01/22	<0.10		ug/L	
			Dissolved Vanadium (V)	2013/01/22	0.70, RDL=0.50		ug/L	
			Dissolved Zinc (Zn)	2013/01/22	<5.0		ug/L	
		RPD	Dissolved Lead (Pb)	2013/01/22	NC		%	20
3100457	JXI	Matrix Spike						
		[QH1457-08]	1,4-Difluorobenzene	2013/01/22		98	%	70 - 130
			4-Bromofluorobenzene	2013/01/22		101	%	70 - 130
			D10-Ethylbenzene	2013/01/22		124	%	70 - 130
			D4-1,2-Dichloroethane	2013/01/22		103	%	70 - 130
			Benzene	2013/01/22		124	%	70 - 130
			Toluene	2013/01/22		112	%	70 - 130
			Ethylbenzene	2013/01/22		121	%	70 - 130
			o-Xylene	2013/01/22		112	%	70 - 130
			p+m-Xylene	2013/01/22		105	%	70 - 130
			F1 (C6-C10)	2013/01/22		93	%	70 - 130
		Spiked Blank	1,4-Difluorobenzene	2013/01/22		90	%	70 - 130
			4-Bromofluorobenzene	2013/01/22		92	%	70 - 130
			D10-Ethylbenzene	2013/01/22		110	%	70 - 130
			D4-1,2-Dichloroethane	2013/01/22		95	%	70 - 130
			Benzene	2013/01/22		114	%	70 - 130
			Toluene	2013/01/22		101	%	70 - 130
			Ethylbenzene	2013/01/22		108	%	70 - 130
			o-Xylene	2013/01/22		102	%	70 - 130
			p+m-Xylene	2013/01/22		96	%	70 - 130
			F1 (C6-C10)	2013/01/22		104	%	70 - 130
		Method Blank	1,4-Difluorobenzene	2013/01/22		101	%	70 - 130
			4-Bromofluorobenzene	2013/01/22		99	%	70 - 130
			D10-Ethylbenzene	2013/01/22		112	%	70 - 130
			D4-1,2-Dichloroethane	2013/01/22		100	%	70 - 130
			Benzene	2013/01/22	<0.20		ug/L	
			Toluene	2013/01/22	<0.20		ug/L	
			Ethylbenzene	2013/01/22	<0.20		ug/L	
			o-Xylene	2013/01/22	<0.20		ug/L	
			p+m-Xylene	2013/01/22	<0.40		ug/L	
			Total Xylenes	2013/01/22	<0.40		ug/L	
			F1 (C6-C10)	2013/01/22	<25		ug/L	
			F1 (C6-C10) - BTEX	2013/01/22	<25		ug/L	
		RPD [QH1457-08]	F1 (C6-C10)	2013/01/22	NC		%	30
			F1 (C6-C10) - BTEX	2013/01/22	NC		%	30
3100787	MC	Matrix Spike	Mercury (Hg)	2013/01/22		106	%	75 - 125
		Spiked Blank	Mercury (Hg)	2013/01/22		98	%	80 - 120
		Method Blank	Mercury (Hg)	2013/01/22	<0.1		ug/L	
		RPD	Mercury (Hg)	2013/01/22	NC		%	20
3101695	J_W	Matrix Spike	4-Bromofluorobenzene	2013/01/24		99	%	70 - 130
			D4-1,2-Dichloroethane	2013/01/24		101	%	70 - 130
			D8-Toluene	2013/01/24		102	%	70 - 130
			Acetone (2-Propanone)	2013/01/24		97	%	60 - 140

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Quality Assurance Report (Continued)

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3101695	J_W	Matrix Spike	Benzene	2013/01/24		97	%	70 - 130
			Bromodichloromethane	2013/01/24		90	%	70 - 130
			Bromoform	2013/01/24		93	%	70 - 130
			Bromomethane	2013/01/24		91	%	60 - 140
			Carbon Tetrachloride	2013/01/24		97	%	70 - 130
			Chlorobenzene	2013/01/24		97	%	70 - 130
			Chloroform	2013/01/24		93	%	70 - 130
			Dibromochloromethane	2013/01/24		91	%	70 - 130
			1,2-Dichlorobenzene	2013/01/24		96	%	70 - 130
			1,3-Dichlorobenzene	2013/01/24		97	%	70 - 130
			1,4-Dichlorobenzene	2013/01/24		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2013/01/24		77	%	60 - 140
			1,1-Dichloroethane	2013/01/24		87	%	70 - 130
			1,2-Dichloroethane	2013/01/24		93	%	70 - 130
			1,1-Dichloroethylene	2013/01/24		103	%	70 - 130
			cis-1,2-Dichloroethylene	2013/01/24		102	%	70 - 130
			trans-1,2-Dichloroethylene	2013/01/24		98	%	70 - 130
			1,2-Dichloropropane	2013/01/24		96	%	70 - 130
			cis-1,3-Dichloropropene	2013/01/24		88	%	70 - 130
			trans-1,3-Dichloropropene	2013/01/24		88	%	70 - 130
			Ethylbenzene	2013/01/24		97	%	70 - 130
			Ethylene Dibromide	2013/01/24		97	%	70 - 130
			Hexane	2013/01/24		108	%	70 - 130
			Methylene Chloride(Dichloromethane)	2013/01/24		98	%	70 - 130
			Methyl Isobutyl Ketone	2013/01/24		101	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2013/01/24		105	%	60 - 140
			Methyl t-butyl ether (MTBE)	2013/01/24		97	%	70 - 130
			Styrene	2013/01/24		95	%	70 - 130
			1,1,1,2-Tetrachloroethane	2013/01/24		99	%	70 - 130
			1,1,2,2-Tetrachloroethane	2013/01/24		100	%	70 - 130
			Tetrachloroethylene	2013/01/24		96	%	70 - 130
			Toluene	2013/01/24		95	%	70 - 130
			1,1,1-Trichloroethane	2013/01/24		103	%	70 - 130
			1,1,2-Trichloroethane	2013/01/24		97	%	70 - 130
			Trichloroethylene	2013/01/24		99	%	70 - 130
			Vinyl Chloride	2013/01/24		90	%	70 - 130
			p+m-Xylene	2013/01/24		89	%	70 - 130
			o-Xylene	2013/01/24		94	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2013/01/24		94	%	70 - 130
		Spiked Blank	4-Bromofluorobenzene	2013/01/24		99	%	70 - 130
			D4-1,2-Dichloroethane	2013/01/24		103	%	70 - 130
			D8-Toluene	2013/01/24		101	%	70 - 130
			Acetone (2-Propanone)	2013/01/24		91	%	60 - 140
			Benzene	2013/01/24		99	%	70 - 130
			Bromodichloromethane	2013/01/24		92	%	70 - 130
			Bromoform	2013/01/24		98	%	70 - 130
			Bromomethane	2013/01/24		95	%	60 - 140
			Carbon Tetrachloride	2013/01/24		98	%	70 - 130
			Chlorobenzene	2013/01/24		99	%	70 - 130
			Chloroform	2013/01/24		95	%	70 - 130
			Dibromochloromethane	2013/01/24		94	%	70 - 130
			1,2-Dichlorobenzene	2013/01/24		96	%	70 - 130
			1,3-Dichlorobenzene	2013/01/24		96	%	70 - 130
			1,4-Dichlorobenzene	2013/01/24		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2013/01/24		77	%	60 - 140

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Quality Assurance Report (Continued)

Maxxam Job Number: MB309089

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3101695	J_W	Spiked Blank	1,1-Dichloroethane	2013/01/24		89	%	70 - 130
			1,2-Dichloroethane	2013/01/24		97	%	70 - 130
			1,1-Dichloroethylene	2013/01/24		105	%	70 - 130
			cis-1,2-Dichloroethylene	2013/01/24		105	%	70 - 130
			trans-1,2-Dichloroethylene	2013/01/24		100	%	70 - 130
			1,2-Dichloropropane	2013/01/24		98	%	70 - 130
			cis-1,3-Dichloropropene	2013/01/24		94	%	70 - 130
			trans-1,3-Dichloropropene	2013/01/24		96	%	70 - 130
			Ethylbenzene	2013/01/24		98	%	70 - 130
			Ethylene Dibromide	2013/01/24		101	%	70 - 130
			Hexane	2013/01/24		110	%	70 - 130
			Methylene Chloride(Dichloromethane)	2013/01/24		102	%	70 - 130
			Methyl Isobutyl Ketone	2013/01/24		104	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2013/01/24		103	%	60 - 140
			Methyl t-butyl ether (MTBE)	2013/01/24		98	%	70 - 130
			Styrene	2013/01/24		98	%	70 - 130
			1,1,1,2-Tetrachloroethane	2013/01/24		101	%	70 - 130
			1,1,2,2-Tetrachloroethane	2013/01/24		104	%	70 - 130
			Tetrachloroethylene	2013/01/24		96	%	70 - 130
			Toluene	2013/01/24		96	%	70 - 130
			1,1,1-Trichloroethane	2013/01/24		104	%	70 - 130
			1,1,2-Trichloroethane	2013/01/24		101	%	70 - 130
			Trichloroethylene	2013/01/24		100	%	70 - 130
			Vinyl Chloride	2013/01/24		91	%	70 - 130
			p+m-Xylene	2013/01/24		89	%	70 - 130
			o-Xylene	2013/01/24		95	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2013/01/24		95	%	70 - 130
		Method Blank	4-Bromofluorobenzene	2013/01/24		97	%	70 - 130
			D4-1,2-Dichloroethane	2013/01/24		105	%	70 - 130
			D8-Toluene	2013/01/24		97	%	70 - 130
			Acetone (2-Propanone)	2013/01/24	<10		ug/L	
			Benzene	2013/01/24	<0.20		ug/L	
			Bromodichloromethane	2013/01/24	<0.50		ug/L	
			Bromoform	2013/01/24	<1.0		ug/L	
			Bromomethane	2013/01/24	<0.50		ug/L	
			Carbon Tetrachloride	2013/01/24	<0.20		ug/L	
			Chlorobenzene	2013/01/24	<0.20		ug/L	
			Chloroform	2013/01/24	<0.20		ug/L	
			Dibromochloromethane	2013/01/24	<0.50		ug/L	
			1,2-Dichlorobenzene	2013/01/24	<0.50		ug/L	
			1,3-Dichlorobenzene	2013/01/24	<0.50		ug/L	
			1,4-Dichlorobenzene	2013/01/24	<0.50		ug/L	
			Dichlorodifluoromethane (FREON 12)	2013/01/24	<1.0		ug/L	
			1,1-Dichloroethane	2013/01/24	<0.20		ug/L	
			1,2-Dichloroethane	2013/01/24	<0.50		ug/L	
			1,1-Dichloroethylene	2013/01/24	<0.20		ug/L	
			cis-1,2-Dichloroethylene	2013/01/24	<0.50		ug/L	
			trans-1,2-Dichloroethylene	2013/01/24	<0.50		ug/L	
			1,2-Dichloropropane	2013/01/24	<0.20		ug/L	
			cis-1,3-Dichloropropene	2013/01/24	<0.30		ug/L	
			trans-1,3-Dichloropropene	2013/01/24	<0.40		ug/L	
			Ethylbenzene	2013/01/24	<0.20		ug/L	
			Ethylene Dibromide	2013/01/24	<0.20		ug/L	
			Hexane	2013/01/24	<1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2013/01/24	<2.0		ug/L	

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Quality Assurance Report (Continued)

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3101695	J_W	Method Blank	Methyl Isobutyl Ketone	2013/01/24	<5.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2013/01/24	<10		ug/L	
			Methyl t-butyl ether (MTBE)	2013/01/24	<0.50		ug/L	
			Styrene	2013/01/24	<0.50		ug/L	
			1,1,1,2-Tetrachloroethane	2013/01/24	<0.50		ug/L	
			1,1,2,2-Tetrachloroethane	2013/01/24	<0.50		ug/L	
			Tetrachloroethylene	2013/01/24	<0.20		ug/L	
			Toluene	2013/01/24	<0.20		ug/L	
			1,1,1-Trichloroethane	2013/01/24	<0.20		ug/L	
			1,1,2-Trichloroethane	2013/01/24	<0.50		ug/L	
			Trichloroethylene	2013/01/24	<0.20		ug/L	
			Vinyl Chloride	2013/01/24	<0.20		ug/L	
			p+m-Xylene	2013/01/24	<0.20		ug/L	
			o-Xylene	2013/01/24	<0.20		ug/L	
			Xylene (Total)	2013/01/24	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2013/01/24	<0.50		ug/L	
		RPD	Acetone (2-Propanone)	2013/01/24	NC		%	30
			Benzene	2013/01/24	NC		%	30
			Bromodichloromethane	2013/01/24	NC		%	30
			Bromoform	2013/01/24	NC		%	30
			Bromomethane	2013/01/24	NC		%	30
			Carbon Tetrachloride	2013/01/24	NC		%	30
			Chlorobenzene	2013/01/24	NC		%	30
			Chloroform	2013/01/24	NC		%	30
			Dibromochloromethane	2013/01/24	NC		%	30
			1,2-Dichlorobenzene	2013/01/24	NC		%	30
			1,3-Dichlorobenzene	2013/01/24	NC		%	30
			1,4-Dichlorobenzene	2013/01/24	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2013/01/24	NC		%	30
			1,1-Dichloroethane	2013/01/24	NC		%	30
			1,2-Dichloroethane	2013/01/24	NC		%	30
			1,1-Dichloroethylene	2013/01/24	NC		%	30
			cis-1,2-Dichloroethylene	2013/01/24	NC		%	30
			trans-1,2-Dichloroethylene	2013/01/24	NC		%	30
			1,2-Dichloropropane	2013/01/24	NC		%	30
			cis-1,3-Dichloropropene	2013/01/24	NC		%	30
			trans-1,3-Dichloropropene	2013/01/24	NC		%	30
			Ethylbenzene	2013/01/24	NC		%	30
			Ethylene Dibromide	2013/01/24	NC		%	30
			Hexane	2013/01/24	NC		%	30
			Methylene Chloride(Dichloromethane)	2013/01/24	NC		%	30
			Methyl Isobutyl Ketone	2013/01/24	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2013/01/24	NC		%	30
			Methyl t-butyl ether (MTBE)	2013/01/24	NC		%	30
			Styrene	2013/01/24	NC		%	30
			1,1,1,2-Tetrachloroethane	2013/01/24	NC		%	30
			1,1,2,2-Tetrachloroethane	2013/01/24	NC		%	30
			Tetrachloroethylene	2013/01/24	NC		%	30
			Toluene	2013/01/24	NC		%	30
			1,1,1-Trichloroethane	2013/01/24	NC		%	30
			1,1,2-Trichloroethane	2013/01/24	NC		%	30
			Trichloroethylene	2013/01/24	NC		%	30
			Vinyl Chloride	2013/01/24	NC		%	30
			p+m-Xylene	2013/01/24	NC		%	30
			o-Xylene	2013/01/24	NC		%	30

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Golder Associates Ltd
Attention: Bujing Guan
Client Project #: 12-1152-0241
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB309089

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3101695	J_W	RPD	Xylene (Total)	2013/01/24	NC		%	30
			Trichlorofluoromethane (FREON 11)	2013/01/24	NC		%	30
3101780	BLZ	Matrix Spike	o-Terphenyl	2013/01/23		117	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2013/01/23		116	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2013/01/23		112	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2013/01/23		109	%	50 - 130
		Spiked Blank	o-Terphenyl	2013/01/23		108	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2013/01/23		107	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2013/01/23		102	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2013/01/23		98	%	70 - 130
		Method Blank	o-Terphenyl	2013/01/23		111	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2013/01/23	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2013/01/23	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2013/01/23	<100		ug/L	
		RPD	F2 (C10-C16 Hydrocarbons)	2013/01/23	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2013/01/23	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2013/01/23	NC		%	30
3101805	LHA	Matrix Spike	Free Cyanide	2013/01/23		98	%	80 - 120
		Spiked Blank	Free Cyanide	2013/01/23		102	%	80 - 120
		Method Blank	Free Cyanide	2013/01/23	<2		ug/L	
		RPD	Free Cyanide	2013/01/23	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Validation Signature Page

Maxxam Job #: B309089

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

Brad Newman, Scientific Specialist

Medhat Riskallah, Manager, Hydrocarbon Department

Mamdouh Salib, Analyst, Hydrocarbons

==========

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

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18-Jan-13 12:26
Mathura Thirukkuma

B309089

MAF ENV-837

Presence of Visible Particulate/Sediment

CAM FCD-01013/4

When there is >1cm of visible particulate/sediment, the amount will be recorded in the field below

Bottle Types

	Sample ID	All	Inorganics				Organics										Hydrocarbons							Volatiles				Other
			CrVI	CN	General	Hg	Metals (Diss.)	Organic 1 of 2	Organic 2 of 2	PCB 1 of 2	PCB 2 of 2	Pest/ Herb 1 of 2	Pest/ Herb 2 of 2	SVOC/ ABN 1 of 2	SVOC/ ABN 2 of 2	PAH 1 of 2	PAH 2 of 2	Dioxin /Furan	F1 Vial 1	F1 Vial 2	F1 Vial 3	F1 Vial 4	F2-F4 1 of 2	F2-F4 2 of 2	F4G	VOC Vial 1	VOC Vial 2	VOC Vial 3	VOC Vial 4	
1	MW13-1			TS	TS																	TS	TS		TS	TS	TS		
2	MW13-2			TS	TS																	TS	TS		TS	TS	TS		
3	Dup - GW																					TS	TS		TS	TS	TS		
4																													
5																													
6																													
7																													
8																													
9																													
10																													

Comments:

Legend:	
P	*Suspended Particulate*
TP	*Trace Settled Particulate (just covers bottom of container or less)*
TS	*Trace Settled Sediment (just covers bottom of container or less)*
S	*Sediment greater than (>) Trace, but less than (<) 1 cm*

Recorded By: *(signature/print)* NNA NUSRAT NAZ

Maxxam

Maxxam Analytics International Corporation o/a Maxxam Analytics

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxam.ca

IMMEDIATE TEST

CHAIN OF CUS

18-Jan-13 12:26
Mathura Thirukkuma
B309089
MAF ENV-837

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	#1326 Golder Associates Ltd	Company Name:		Quotation #:	B24075
Contact Name:	Central Acct: 1151 & 1152	Contact Name:	Bujing Guan	P.O. #:	
Address:	2390 Argentia Rd	Address:		Project #:	12-1152-0241
	Mississauga ON L5N 5Z7			Project Name:	
Phone:	(905)567-4444 Fax: (905)567-6561	Phone:	(905)567-6100 x1308 Fax:	Site #:	
Email:	maxxam@golder.com, amber_moreira@golder.com	Email:	bujing_guan@golder.com	Sampled By:	JKC

Only:

BOTTLE ORDER #: 386888

PROJECT MANAGER: Mathura Thirukkumaran

C#386888-01-01

Regulation 153 (2011)

- [ ] Table 1
- [ ] Table 2
- [x] Table 3
- [ ] Table ___
- [ ] Res/Park
- [x] Ind/Comm
- [ ] Agri/Other
- [ ] Medium/Fine
- [ ] Coarse
- [ ] For RSC

Other Regulations

- [ ] CCME
- [ ] Reg. 558
- [ ] MISA
- [ ] PWQO
- [ ] Other ___
- [ ] Sanitary Sewer Bylaw
- [ ] Storm Sewer Bylaw
- Municipality ___

SPECIAL INSTRUCTIONS

Include Criteria on Certificate of Analysis (Y/N)? ___

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: [X]
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission) [ ]
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	F1-F4	VOCs	Metals & Inorganics	Dissolved Metals						# of Bottles	Comments
1		MW13-1	18 Jan 2013	AM	GW	N	Y	X	X	X							13	
2		MW13-2	↓	↓	GW	↓	Y	X	X	X							13	
3		Dup-GW	↓	—	GW		Y	X			X						6	
4		Trip spike	–	—	GW		–		X								3	
5		Trip blank	—	–	GW	↓	–		X								3	
6																		
7																		
8																		
9																		
10																		

RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
[signature]	18-2013	12:26	[signature] RACHEL DEVLIN	2013/01/18	12:26	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	4 | 3 | 4 °C	Present		✓
		Intact		

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Maxxam Yellow: Client

Maxxam

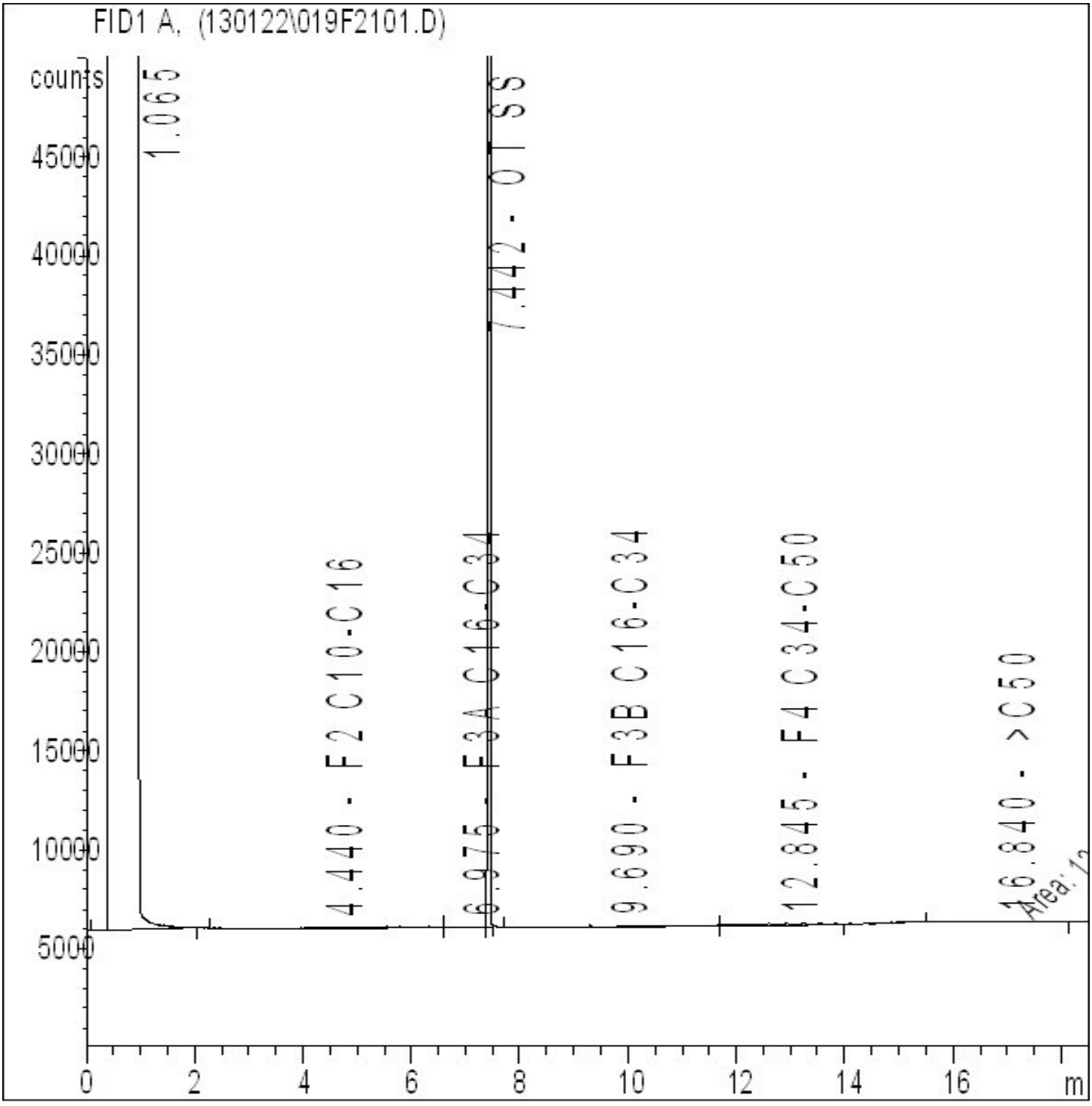
Success Through Science®

Report Date: 2013/01/24
Maxxam Job #: B309089
Maxxam Sample: QH1457

Golder Associates Ltd
Client Project #: 12-1152-0241

Client ID: MW13-1

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam

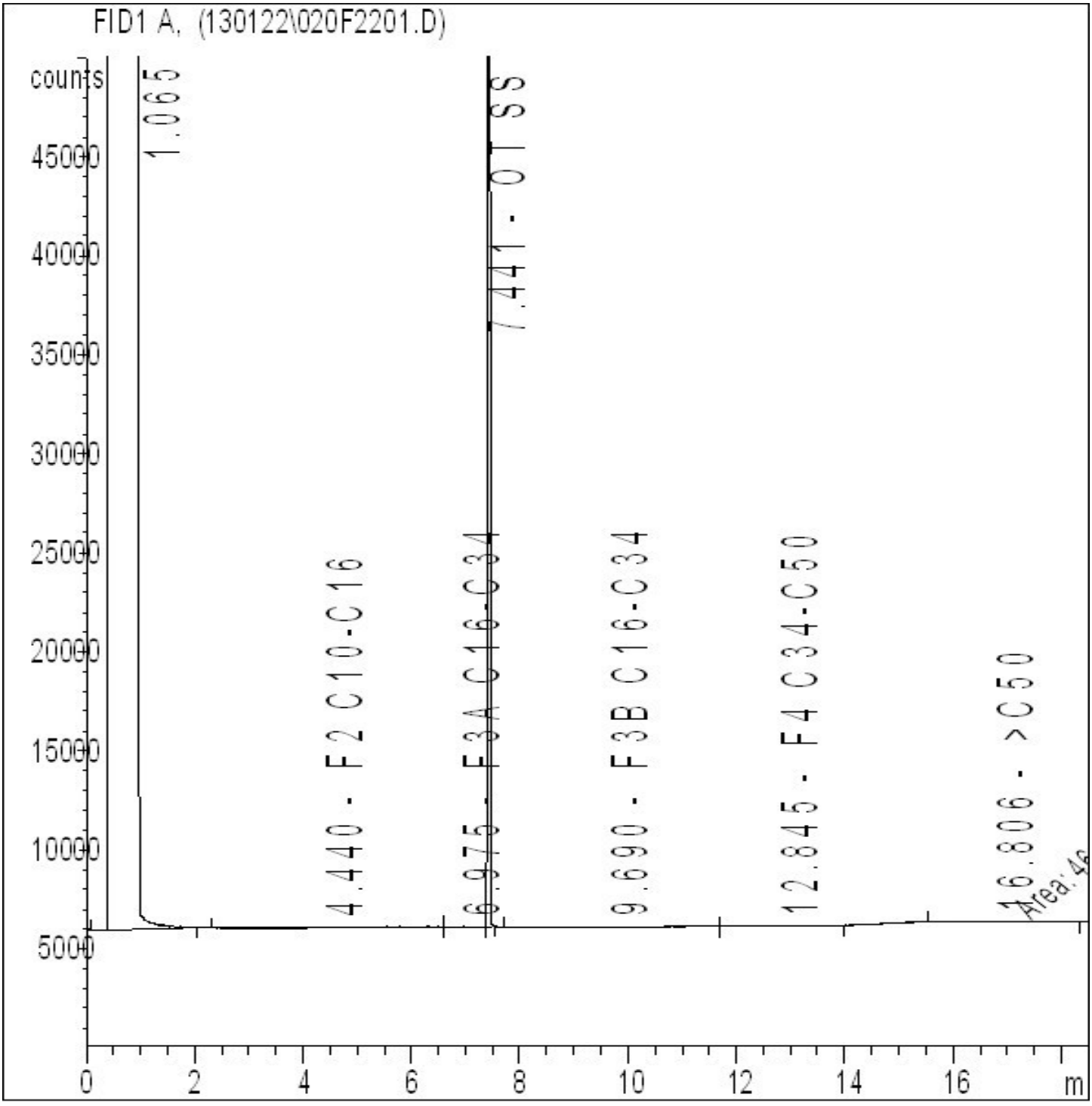
Success Through Science®

Report Date: 2013/01/24
Maxxam Job #: B309089
Maxxam Sample: QH1458

Golder Associates Ltd
Client Project #: 12-1152-0241

Client ID: MW13-2

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam

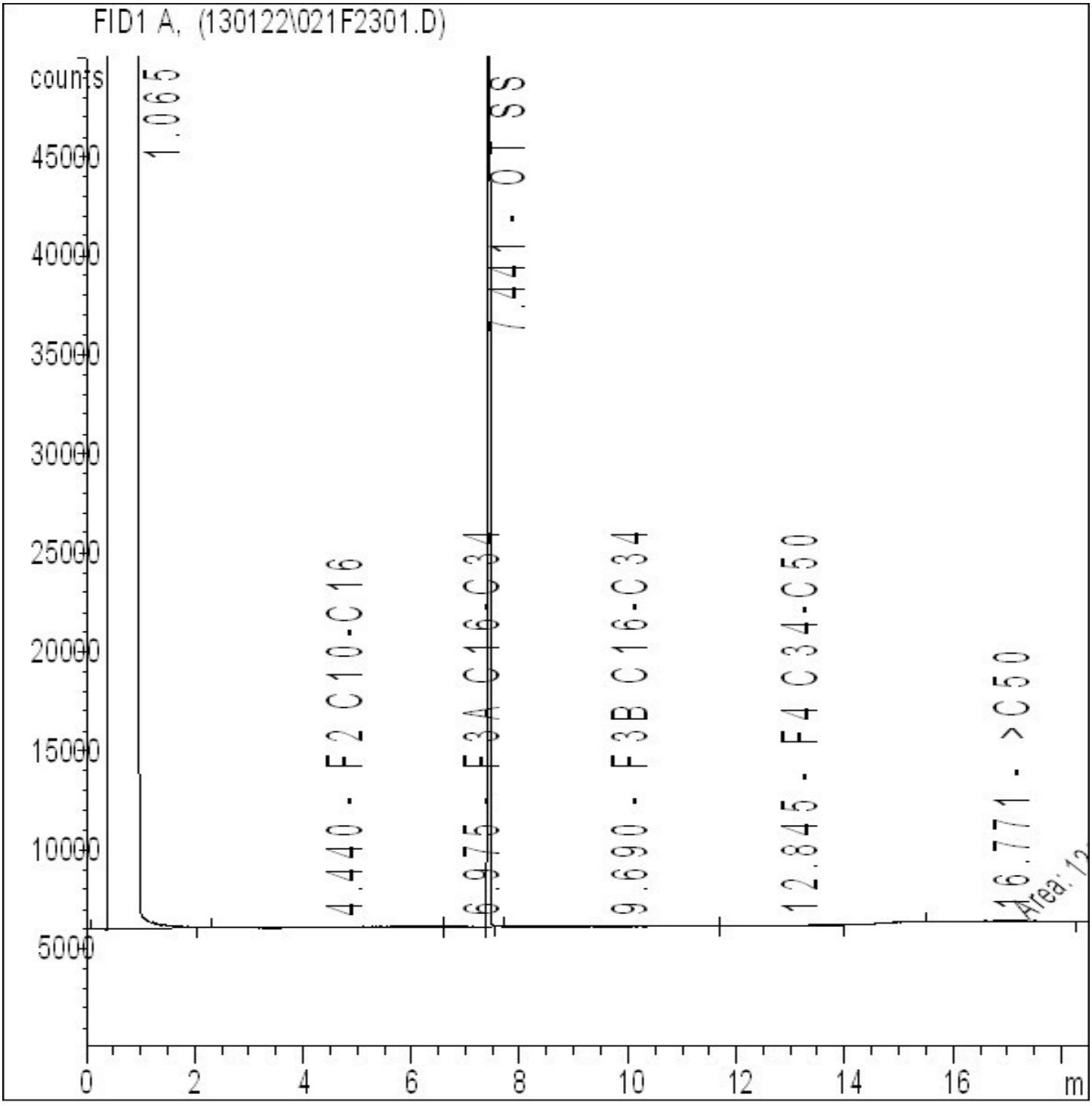
Success Through Science®

Report Date: 2013/01/24
Maxxam Job #: B309089
Maxxam Sample: QH1459

Golder Associates Ltd
Client Project #: 12-1152-0241

Client ID: Dup-GW

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

SGS Canada Inc.
657 Consortium Court
London - Ontario - N6E 2S8
Phone: 519-672-4500 FAX: 519-672-0361

Works #: 736001387

Thursday, December 20, 2012

Mohawk Inn (Main Building)
Attn : Jonathan Jaber

9230 Guelph Line, PO Box 81
Campbellville, ON
L0P 1B0,

Phone: 905-854-2277
Fax:905-854-2373

Date Rec. : 19 December 2012
LR Report: **CA21073-DEC12**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample Date & Time	Temp Upon Receipt Receipt °C	Total Coliform cfu/100mL	E.Coli cfu/100mL
1: Analysis Start Date		---	19-Dec-12	19-Dec-12
2: Analysis Start Time		---	10:40	10:40
3: Analysis Approval Date		---	20-Dec-12	20-Dec-12
4: Analysis Approval Time		---	12:57	12:57
5: MAC		**---**	***0***	***0***
6: DW Room #109	17-Dec-12 13:15	13.6	0	0

MAC - Maximum Acceptable Concentration

Emily Crowley
Manager,
Environmental Services (London)

OnLine LIMS

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

SGS Canada Inc.
657 Consortium Court
London - Ontario - N6E 2S8
Phone: 519-672-4500 FAX: 519-672-0361

Works #: 736001390

Thursday, December 20, 2012

Mohawk Inn (Treehouse)
Attn : Jonathan Jaber

9230 Guelph Line, PO Box 81
Campbellville, ON
L0P 1B0,

Phone: 905-854-2277
Fax:905-854-2373

Date Rec. : 19 December 2012
LR Report: **CA21074-DEC12**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample Date & Time	Temp Upon Receipt Receipt °C	Total Coliform cfu/100mL	E.Coli cfu/100mL
1: Analysis Start Date		---	19-Dec-12	19-Dec-12
2: Analysis Start Time		---	10:40	10:40
3: Analysis Approval Date		---	20-Dec-12	20-Dec-12
4: Analysis Approval Time		---	12:57	12:57
5: MAC		**---**	***0***	***0***
6: DW Room #201	17-Dec-12 13:30	13.6	0	0

MAC - Maximum Acceptable Concentration

Emily Crowley
Manager,
Environmental Services (London)

OnLine LIMS

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Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates Ltd.
2390 Argentia Road
Mississauga, Ontario, L5N 5Z7
Canada
T: +1 (905) 567 4444

Golder Associates