November 2011

REPORT ON

Phase I and II Environmental Site Assessment
96 Nepean Street
Ottawa, Ontario

Submitted to:
Claridge Homes
210 Gladstone Avenue
Suite 2001
Ottawa, Ontario
K2P 0Y6

REPORT

Report Number: 11-1121-0202 (1000)

Distribution:

1 e-copy - Claridge Homes
4 copies - Claridge Homes
2 copies - Golder Associates Ltd.

Golder Associates

Executive Summary

Golder Associates Ltd. ("Golder") was retained by Claridge Homes ("Claridge") to conduct a Phase I and II Environmental Site Assessment (hereafter referred to as "ESA") for the property located at 96 Nepean Street in Ottawa, Ontario ("Site"). It is understood that the Phase I ESA is being carried out for due diligence purposes related to the potential purchase of the Site for construction of a proposed residential high rise building.

Based on the information obtained during the Phase I ESA, issues of potential environmental concern related to potential impacts to soil and/or groundwater were identified as follows:

- Aerial photographs indicate that most of the properties surrounding and on the Site have been converted from residential uses to parking lots, high rise residential and commercial uses. Unknown tank performance and historic demolition practices on the Site and adjacent properties indicate issues of potential environmental concern associated with former heating oil tanks;
- The review of the FIPs has indicated that a property within 250 m radius of the study area on the southeast corner of O'Connor Street and Laurier Avenue West was used as a gasoline service station with three (3) underground storage tanks (USTs); and,
- The Ecolog ERIS report indicated that there are a number of waste generators on adjacent properties (up-gradient and cross-gradient to the Site), as well as spill occurrences on adjacent land up-gradient to the Site and fuel storage tanks in the vicinity of the Site. The presence of these facilities and associated activities is considered an issue of potential environmental concern for the Site.

The scope of work for the Phase II ESA was designed to assess the issues of potential environmental concern that were identified during the Phase I ESA. In order to investigate the subsurface conditions at the Site, a total of nine (9) boreholes were drilled on-Site between September 7 and 25, 2011 and equipped with monitoring wells. The boreholes were positioned to form a grid pattern on the Site to assess the presence and degree of petroleum hydrocarbon impacts on the Site.

The subsurface conditions observed during the borehole drilling program are generally described as about 1.7 to greater than 2 m of fill consisting of sand, gravel and brick underlain by brown to grey silty clay to approximately 6.5 mbgs to 8.0 mbgs. The clay is underlain by an approximately 3 m thick layer of glacial till which extends to the bedrock surface. Shale bedrock was encountered at approximately 9 mbgs to 11 mbgs, the upper portion of which is weathered. Groundwater was encountered in the most of the monitoring wells at approximately 8 mbgs. As illustrated on Figure 2, the groundwater elevations across the Site do not show a definite direction of groundwater flow; groundwater flow direction can be locally influenced by such features as underground utilities, drainage of basement levels, etc.

The soil analytical data were compared to the applicable standards described in the MOE document entitled Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/ Institutional Property Use, coarse-textured soil, April 15, 2011. A summary of the soil analysis is provided below:

- All twelve (12) samples of silty clay had PHC F1 to F4 and BTEX concentration below the reportable detection limits (RDLs);

- Within the glacial till layer, there were detections of toluene, ethylbenzene, xylenes, PHC F1, PHC F2 and/or PHC F3 below MOE Table 3 Standard in all five (5) till samples submitted for laboratory analysis; and,
- Within the upper weathered shale, there were detections of toluene, ethylbenzene, xylenes, PHC F1, PHC F2 and/or PHC F3 in all four (4) samples collected from a depth of approximately 10 mbgs. Of these, two (2) samples exceeded the MOE Table 3 Standard of 55 µg/g for PHC F1.

The groundwater analytical data were compared to the applicable standards as described in the MOE document entitled Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, All Types of Property Uses, coarse-textured soil, April 15, 2011. There were detections of BTEX and/or PHCs in all groundwater samples except for MW 11-3 and MW 11-9. Of these, three (3) samples exceeded the MOE Table 3 Standard of 150 µg/L for PHC F2.

Based on the results of the current investigation, it was interpreted that the likely source of measured hydrocarbon impacts is the release of heating oil to the ground, which would be expected to have occurred at some location(s) at shallow depth either on-Site or off-Site. Considering that there was no apparent contamination observed in the silty clay soils, and that all silty clay samples analysed reported hydrocarbon parameters below detection limits, it is interpreted that the source is not likely on the Site. Rather, the source may be somewhere off-Site and have travelled down to the water table (which is within the glacial till) and then spread via groundwater movement. This conceptual model is supported by the measured presence of hydrocarbons in the glacial till at various locations at the Site (at concentrations below the MOE Table 3 standards), in the upper bedrock at some locations (exceeding MOE Table 3 standard for PHC F1), and the presence of hydrocarbons in most samples of the groundwater underlying the Site (with exceedances of the MOE Table 3 standard for PHC F2 at three (3) locations).

Table of Contents

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION AND BACKGROUND

1.1 General

Golder Associates Ltd. ("Golder") was retained by Claridge Homes ("Claridge") to conduct a Phase I and II Environmental Site Assessment ("ESA") for the property located at 96 Nepean Street in Ottawa, Ontario (Site). The Site is currently used as a public parking lot. The location is shown on the Key Plan (Figure 1) and the Site boundary is shown on the Site Plan (Figure 2).

The Phase I ESA was completed in accordance with the November 2001 Canadian Standards Association document entitled Phase I Environmental Site Assessment, Z768-01 (R2006). Historical documents were reviewed and a site visit was carried out on August 31, 2011. It is understood that the Phase I ESA is being carried out for due diligence purposes related to the potential purchase of the Site for construction of a proposed high rise residential building.

Appendix A includes resumes of Golder staff involved in the Phase I and II ESA.

1.2 Scope of Work

As previously indicated, the scope of work for the Phase I ESA carried out on the Site is based on the November 2001 Canadian Standards Association ("CSA") document entitled Phase I Environmental Site Assessment, Z768 01 (R2006). The Phase I ESA consisted of the following components:

- Background and records review including an Ecolog Eris Database Report;
- Review of previous environmental reports for this Site;
- A Site visit;
- No interview was conducted during this Phase I ESA; however, adequate relevant information for the Phase I ESA was obtained from historical records review;
- An evaluation of information obtained; and,
- Preparation of this report.

This Phase I ESA report is not a compliance audit or review. Any environmental compliance issues noted are mentioned as they relate to physical conditions present at the time of the Site visit. Furthermore, Golder did not conduct a health and safety, engineering or structural evaluation of the Site.

2.0 SITE DESCRIPTION

2.1 Site Setting and Activities

The general location of the Site is shown on the Key Plan, Figure 1 and the general Site configuration is shown on the Site Plan, Figure 2. Characteristics of the Site, based on the Golder Site visit carried out on August 31, 2011 are as follows:

SITE CHARACTERISTICS	
Use	Public parking lot
Address or Location	96 Nepean Street
Setting	The Site is located on the south side of Nepean Street between O'Connor Street and Metcalfe Street. The Site is located in the middle of the block. Adjacent streets and properties surrounding the Site include Nepean Street and a parking lot to the north, a public parking lot to the west, a large apartment building to the south, and a 3 storey apartment building and a parking lot to the east.
Area (approx.)	0.12 hectares (0.3 acres)
Legal Description	96 Nepean Street PLAN 2996 PT LOTS 44 45 & 46
Configuration	Rectangular (See Site Plan, Figure 2)
Services	The Site is serviced with hydro services and telephone service to the parking booth.
Presence of Fill Material	No piles of fill material were observed on the Site.
Other Site Comments	None
Waste Storage	No waste storage on site.
Exterior Areas	
Gravel Areas	None observed.
Landscaped/Grassed Areas	No landscaped or grass areas were observed on the Site.
Paved Areas	The Site is entirely paved with asphalt. Some areas have been repaired with asphalt patching.
Treed Areas	There are no trees on the Site.
Exterior Storage Tanks	No underground storage tanks ("USTs") and/or above ground storage tanks ("ASTs") were observed during the Site visit.
Other Observations	Parking booth located on adjacent property near the entrance (from Nepean Street) of the parking lot

2.2 Regional Geological Setting

The following maps/reports were reviewed to determine the general geological and topographical conditions in the area of the Site:

- Golder Associates Ltd. GIS Database (Reference - Digital Basemap Data supplied by DMTI Spatial Inc., Canmap, 2006);
- Map 1506A, Surficial Geology, Ottawa, Ontario, Belanger J. R., Urban Geology of the National Capital Area, Geological Survey of Canada, Open file D3256, 2001; and,
- Map 1508A. Generalized Bedrock Geology, Ottawa, Ontario, Belanger J. R., Urban Geology of the National Capital Area, Geological Survey of Canada, Open file D3256, 2001.

Geological information on the Site and/or surrounding area [250 metres ("m")], based on the above, is as follows:

GEOLOGICAL INFORMATION	
Native Subsurface Soils (expected)	Clay and silt underlying Erosional Terraces
Depth to Bedrock (approximately)	10-15 m
Type of Bedrock (expected)	Shale (Billings formation)
Topography (expected)	Flat
Regional Groundwater Flow (inferred)	North, towards the Ottawa River
Nearest Open Water Body	Rideau Canal is located approximately 600 metres northeast of the Site.
Prominent Physical Features	None

3.0 RECORDS REVIEW

3.1 Historical Information Review

Historical information on the Site and/or surrounding area (250 m) was obtained from the following sources:

SUMMARY OF HISTORICAL INFORMATION SOURCES				
Aerial Photograph Review				
Year	1947	1954	1968	1975
No.	A10903-99	A13986-17	A30135-98	A23954-208
Scale	1:6,600	1:12,000	1:7,500	1:6,000
Year	1988	1994	2008	
No.	A26475-163	A28147-102	City of Ottawa eMap	
Scale	1:3,000	1:10,000	1:5,907	
Title Search				
No title search provided				
Review of Fire Insurance Plan Records				
Source(s)	National Archives, Ottawa			
Year(s)	1888 (revised 1901), 1902 (revised 1912), 1925 (revised 1948) and 1956			
Review of Street Directories				
Source(s)	National Archives, Ottawa			
Year(s)	1897, 1907, 1917, 1927, 1937, 1947, 1957, 1967, 1977-78, 1988-89, 1998-99 and 2008-09			

3.1.1 Interview

An interview was not conducted for this Site. However, adequate relevant information for the Phase I ESA was obtained from historical records review.

3.1.2 Aerial Photograph Review

Selected aerial photographs for the Site were obtained from the National Air Photo Library in Ottawa, Ontario by Golder personnel. The review of the aerial photographs was conducted to develop a general history of the development of the Site and surrounding properties. Aerial photographs may be at a scale that limits a detailed review of the Site and surrounding area. Information obtained from the aerial photographs is summarized as follows:

Date Scale	Site	Surrounding Property Direction			
		North	East	South	West
1947 1:6,600	Image has poor resolution. Site appears to consist of residential buildings.	Entire block to the north of site appears to be occupied by residential buildings.	East of the Site appears to be residential buildings.	South of the Site appears to be residential buildings and possible apartment-sized buildings.	West of the Site appears residential/ commercial-sized buildings.
1954 1:12,000	As per 1947.	A tall apartment-sized building spears on the southwest corner of Gloucester Street and Metcalfe Street.	A tall apartment-sized building appears on the southwest corner of Nepean Street and Metcalfe Street.	Several tall apartment-sized buildings appear on the block south of the Site.	As per 1947.
1968 1:7,500	Most residential buildings have been replaced with parking lot. One small residential building appears to remain on the Site.	Several high-rise buildings appear on the block north of the Site.	Several residential buildings have been replaced by parking lots east of the Site.	2 new high-rise buildings appear on the block south of the Site.	As per 1954.
1975 1:6,000	No residential buildings remain on Site and whole area is a parking lot.	As per 1968.	Residential buildings replaced by parking lot. Only 2 high rise buildings remain on block to the east of the Site.	As per 1968.	As per 1968.
1988 1:3,000	As per 1975.	As per 1975.	As per 1975.	As per 1975.	As per 1975.
1994 1:10,000	As per 1988.	As per 1988.	As per 1988.	As per 1988.	As per 1988.
2008 eMap 1:5,907	As per 1994.	As per 1994.	As per 1994.	As per 1994.	As per 1994.

The review of aerial photographs of the Site and surrounding area indicates that there has been a substantial amount of demolition and reconstruction in the area surrounding the Site. Since 1947 many older buildings have been replaced by parking lots and some high rise buildings. Many of the buildings in the area appear to have been used for mostly residential with some commercial uses.

There are inherent environmental concerns associated with historical downtown activities that were likely associated with various properties as well as unknown commercial uses and various construction projects. Most of the potential concerns that arise from observation of the aerial photographs are related to previous heating oil tanks associated with buildings located on and off the Site.

3.1.3 Chain of Title Search

A chain of title search was not provided for review for this Phase I ESA.

3.1.4 Agreement of Purchase and Sale ("A of P/S")

As part of the CSA Z768-01(R2006) protocol, when an A of P/S exists, it should be reviewed for information on vendor warranties or special conditions concerning contamination. At the time of this report, the A of P/S had not been provided to Golder.

3.1.5 Review of Fire Insurance Plan Records

Fire insurance plans ("FIP") were reviewed for the site and the surrounding properties within a 250 m radius. Fire insurance plans from 1888 (revised in 1901), 1902 (revised in 1912), 1925 (revised in 1948) and 1956 were available for the site and surrounding area. The review of the FIPs indicated the following:

- **1888 revised in 1901** - The Site is occupied by several buildings that are likely used for residential purposes. There are no underground storage tanks (USTs) shown on the Site or on the neighbouring properties;
- **1902 revised in 1912** – The Site is occupied by several buildings that are likely used for residential purposes. There are no USTs shown on the Site or on the neighbouring properties;
- **1925 revised in 1948** – A gasoline service station is shown on the southeast corner of O'Connor Street and Laurier Avenue West (~170 m northwest of the Site) with 3 USTs; and,
- **1956** - A gasoline service station is shown on the southeast corner of O'Connor Street and Laurier Avenue West (~170 m northwest of the Site) with 3 USTs.

The review of the FIPs has indicated that the Site and most of the surrounding properties mainly had residential uses. An issue of potential environmental concern identified within the 250 m radius study area is the gasoline service station located on the southeast corner of O'Connor Street and Laurier Avenue West (~170 m northwest of the Site) with 3 USTs.

3.1.6 Review of Street Directories

A review of Street Directories for the City of Ottawa was completed for the properties within approximately 250 m of the Site. Some notable addresses follow:

- **Nepean Street**
  - There was no listing for 96 Nepean Street (Site) in 1897, 1907, 1917, 1927, 1937,1947 and 1967;
  - Shamrock Parking is listed as the occupant in 1988-89 and 2008-09;
  - 1917: 171 Nepean – Chinese Laundry;
  - 1957: 146 Nepean – Monson's Deluxe Dry Cleaners.

- **Laurier Avenue West**
  - 1988-89: 227 Laurier – One Hour Cleaners;
  - 1998-99: 227 Laurier – Laurier Cleaners;
  - 2008-09: 141 Laurier – Commercial and Laurier Cleaners and Tailoring.
- **Lisgar Street**
  - 1957: 318 Lisgar – Centre Laundry-Maid;
  - 1967: 318 Lisgar – Laundry and Cleaning.
- **Metcalfe Street**
  - No major issues indicated along Metcalfe Street.
- **O'Connor Street**
  - 1927: 126 O'Connor – Chinese Laundry;
  - 1937: 120 O'Connor– Langley Ltd Cleaners;
  - 1947: 126 O'Connor – Sang Yee Laundry;

    119 O'Connor– Belaire S Leonard Auto Service;
  - 1957: 133 O'Connor – Paige James W Service Station;
  - 1967: 154 O'Connor – Shell Service Station;
  - 1977-78: 154 O'Connor - Bytown Towing & Auto Care Gas Station.
- **Slater Street**
- 1917: 174 Slater – Chinese Laundry;
- 1927: 174 Slater – Chinese Laundry;
- 1967: 171 Slater – Turner's Service Station.

Several of the surrounding addresses listed in the street directories raise issues of potential environmental concern to the Site including dry cleaning services, gasoline service stations and automobile service stations.

3.1.7 Previous Reports

No previous reports were provided for review purposes in the Phase I ESA.

3.2 Regulatory Information Review

Regulatory information requests and reviews for the Site and/or surrounding area (250 m) included the following sources:

SUMMARY OF REGULATORY INFORMATION
Regulatory Agencies and/or Government Departments Contacted
Ontario Ministry of Environment ("MOE")
Technical Standards Safety Authority ("TSSA")
City of Ottawa ("City")
City Documents
■ 1988 Intera report entitled Mapping and Assessment of Former Industrial Sites, City of Ottawa.*
■ 2004 City of Ottawa Waste Disposal Sites Inventory.
MOE and EC Documents/Databases
■ MOE Database on PCB Storage Sites, 2000*;
■ Waste Disposal Site Inventory, June 1991;
■ MOE Database on Brownfields Environmental Site Registry - Records of Site Condition ("RSC), October 2004;
■ Inventory of Coal Gasification Plant Waste Sites in Ontario, April 1987;
■ MOE Database on Registered Waste Generators 2001*; and,
■ EC National Pollutant Release Inventory ("NPRI"), March 2006.
*Note: The information extracted from the MOE PCB Storage Sites and Waste Generator databases was used by Golder under license with the Ontario Ministry of Environment, Queens Printer for Ontario (2000 and 2001).

3.2.1 Ontario Ministry of Environment Correspondence

The Ontario Ministry of Environment ("MOE") was contacted (refer to copy of correspondence in Appendix B) to provide an Index Report with respect to active orders and approvals for the Site as detailed below:

- Active orders under the Environmental Protection Act ("EPA"), the Ontario Water Resources Act ("OWRA"), and the Pesticides Act ("PA"); and,
- Approvals under Sections 9 and 39 of the EPA as well as Sections 52 and 53 of the OWRA.

At the time of preparation of this report, a formal response from the MOE had not been received by Golder. When a formal response to Golder's request for information is received, it will be reviewed. If, in Golder's opinion, the response details any issues of potential environmental concern with respect to the Site, a copy will be forwarded to Claridge (with a brief discussion) so that it can be appended to this report.

3.2.2 Technical Standards and Safety Authority Correspondence

The Technical Standards and Safety Authority ("TSSA") was contacted via e-mail (refer to copy of correspondence in Appendix B) to determine if any USTs were registered on or near the Site. The TSSA has maintained records since 1987.

TSSA responded via email on November 14, 2011 and indicated that the TSSA had no registrations for USTs for the Site.

3.2.3 City of Ottawa Correspondence

A request was sent on November 14, 2011 to The City of Ottawa to provide a copy of the Historical Land Use Inventory ("HLUI") for the Site and immediate area. At the time this report was prepared a response has not been received by Golder.

3.2.4 City of Ottawa Document Review

Prior to the 2001 amalgamation, the City did not have a consolidated database of environmental concerns for City properties and typically referred all inquiries to the 1988 Mapping and Assessment of Former Industrial Sites, City of Ottawa, Intera Technologies Ltd. (hereafter known as the "1988 Intera Report"). This report describes an inventory and assessment study of former industrial sites that were active in the former (prior to the 2001 amalgamation) City of Ottawa from 1850 to 1984 that likely produced or handled hazardous wastes and materials. The sites were subsequently screened to identify higher priority sites which were subdivided into Group I, Group II and Group III sites.

- Group I Sites – Sufficient evidence to indicate that wastes are present on-Site and that there is a high potential for environmental impact.
- Group II Sites – Sufficient evidence to indicate that wastes are likely remnant on-Site.
- Group III Sites – Unlikely that significant quantities of waste exist at the Site today and therefore the potential for environmental impact is minimal.

The review of the 1988 Intera Report indicated that there were several properties in the immediate area (within 250 m) that could have potential environmental impacts on the Site. The properties of concern are as follows:

- **Site No. 84:** Ottawa Photo Engraving Co. located at 300 Laurier Avenue West from c.1925-1950 was a printing company with a medium-low industry hazard rating and a small size of operation (~250 metres northwest of the Site).
- **Site No. 85**: Mutual Press located at 230 Laurier Avenue West from 1936-1965 was a printing company with a medium-low industry hazard rating and a medium size of operation (~200 metres north of the Site).

The review of the 2004 City of Ottawa Waste Disposal Sites Inventory indicated that there were no former landfills within 250 m of the Site.

3.2.5 Ontario Ministry of Environment Document Review

3.2.5.1 MOE Database on PCB Storage Sites, 2000

Based on a search (250 m radius from Site) of the MOE database of PCB Storage Sites, Taggart Corporation located at 225 Metcalfe Street has registered PCB's (Askarel) that are stored for disposal.

3.2.5.2 Waste Disposal Site Inventory, June 1991

A search of the 1991 MOE (Waste Disposal Site Inventory) indicates that there are no waste disposal sites within 250 metres of the Site.

3.2.5.3 Inventory of Coal Gasification Plant Waste Sites in Ontario, April 1987

A review of the (Inventory of Coal Gasification Plant Waste Sites in Ontario) (250 m radius from the Site) was carried out. The latter classification includes tar distillation plants, creosoting plants, roofing felt and tarred paper

products manufacturers, by-product charcoal and coke oven plants of the iron and steel industry, industrial manufactured gas plants, and wood distillation plants.

The review indicated that there are no registered former coal gasification plants or industrial sites producing and/or using coal tar or related tars within 250 m of the Site.

3.2.5.4 MOE Database on Registered Waste Generators, 2001

A review of the 2001 MOE database on registered waste generators was conducted within 250 m of the Site. The following relevant registered waste generators were noted:

Generator No.	Generator Name	Address	Wastes Generated
ON2125100	Laurier Dry Cleaners/Spic & Span Cleaners	227 Laurier Ave.	Halogenated solvents.

There are inherent potential environmental concerns associated with dry cleaning services and the location of this business (~200 m north of the Site) raises a minor issue of potential environmental concern.

3.2.5.5 MOE Database on Brownfields Environmental Site Registry - Records of Site Condition ("RSC"), October 2004

A search of the brownfields environmental site registry was carried out for the Site to determine whether a record of site condition ("RSC") has been filed for the Site. The search indicated that no RSC has been filed for the Site, however an RSC was completed for the following property in the surrounding area:

RSC No.	Filing Owner and Soil Removal Quantity	Address	Filing Date
113750	Soho Lisgar Inc. – 35 m^3 of soil removed for purpose of remediation of the property.	300 Lisgar Street	June 23, 2011

3.2.5.6 Environment Canada National Pollutant Release Inventory ("NPRI"), 2009

The NPRI provides information for the facility's total releases to air, water and land and also includes any disposal and /or recycling the facility may have. The search of the Environment Canada NPRI (within 250 m of the Site) indicated there are no relevant registered facilities located within 250 m of the Site.

3.3 EcoLog Eris Database Report

An EcoLog Environmental Risk Information Services Ltd. (EcoLog ERIS) report is a detailing of historical environmental information for any property in Canada. The report researches, tabulates and identifies key federal, provincial as well as private sector databases (as listed in the Ecolog ERIS report) to pinpoint environmental elements on Site and within a 250 m radius of the Site. This is used to aid in the identification of possible environmental concerns or risks for commercial, industrial and residential sites. Golder Associates retained EcoLog ERIS to complete a search of available databases that provide environmentally pertinent records for the Site and within 250 m from the Site. The review of the Ecolog ERIS report indicated the following:

Summary of Site Information

The databases were searched for the Site and there were no records found.

Summary of Surrounding Properties within 250 m from the Site

The databases were searched for the properties within 250 m from the Site and the following records were found:

Fuel Storage Tanks

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

Company	Address	Operation Type	Tank Fuel Type
Bytown Towing & Autocare Ltd.	154 O'Connor Street	Retail Fuel Outlet	Liquid Fuel Single Wall UST - Gasoline

Ontario Regulation 347 Waste Generators Summary

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. The following relevant waste generators were listed in the Ecolog ERIS report:

- Shell Canada Products located at 154 O'Connor Street was a registered waste generator as of October 2010. The registered hazardous wastes includes light fuels, waste oil/sludges (petroleum based) and waste crankcase oil and lubricants;
- Various dry cleaning companies located at 227 Laurier Avenue West were registered waste generators from 1988-1990 and 1992-2001 and the registered wastes were halogenated solvents.

National PCB Inventory

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province.

- Taggart Corporation located at 225 Metcalfe Street has registered PCB's (Askarel) that are stored for disposal.

Record of Site Condition

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use, such as residential, proposed to take place on the property. One RSC was listed in the Ecolog ERIS report:

- A record of Site Condition was completed for Soho Lisgar Inc. located at 300 Lisgar Street in 2011.

Scott's Manufacturing Directory

The Scott's Manufacturing Directory is the most comprehensive database of Ontario manufacturers available. The following relevant manufacturer appears in the database:

Company	Address	Established	Description of Manufacturing
Canus Plastic Inc.	300 Lisgar Street	January 8, 1949	Plastics manufacturing, storage and supplier and distributor.

Spill Occurrences within 250 m Radius of the Site

The Ecolog ERIS report listed a number of spill occurrences within a 250 m radius of the Site. The information is presented in the table below:

Company	Address / Location relative to the Site	Date of Occurrence	Description
Motor Vehicle	250 Lisgar Street	June 28, 1991	20 L gasoline spill from car tank to land/water as a result of corrosion. It was reported that environmental impacts are not anticipated due to the spill.
Shell Canada Products Ltd.	154 O'Connor Street	November 23, 1993	1800 L of furnace oil missing from UST due to UST leak caused by corrosion. Soil was contaminated and environmental impacts were confirmed.
Shell Canada Products Ltd.	154 O'Connor Street	September 20, 1994	An unknown quantity of waste oil to ground (UST failed pressure test) due to UST leak. It was reported that soil contamination and environmental impact to land was possible.
Ottawa Hydro	375 Cooper Street	August 13, 1995	15 L of transformer oil spilled to ground as a result of a cooling system leak. It was reported that environmental impact to land was possible.
N/A	In Front of 300 Laurier Avenue West	February 8, 2005	25 L of hydraulic oil spilled to a catch basin. It was reported that environmental impacts to water are possible.

A copy of the Ecolog ERIS Database Report is provided in Appendix C.

The review of the Ecolog ERIS report indicated that there are a number of waste generators on adjacent properties (up-gradient and cross-gradient to the Site), as well as spill occurrences on property located up-gradient to the Site and fuel storage tanks in the vicinity of the Site. The reference to up-gradient and cross-gradient infers a regional groundwater flow direction towards the north (as described in Section 2.2). The presence of these facilities and associated activities is considered an issue of potential environmental concern for the Site.

4.0 SITE VISIT

A Site visit was carried out by a representative of Golder staff on August 31, 2011. The Site is a paved public parking lot located at 96 Nepean Street in Ottawa, Ontario. Site photographs are provided in Appendix D.

The visit was documented with a checklist, photographs and additional notes, where warranted. The Site was examined for visual and olfactory indications of potential environmental concern. The Site visit also included a cursory inspection of adjacent properties from the Site and publicly accessible areas. The approximate limits of the Site (i.e., Site boundary) are shown on the Site Plan, Figure 2. Refer to the Site Characteristics table in Section 2.1 for a general description of the Site.

There are no current permanent buildings located on the Site, therefore Golder did not comment on building related hazardous materials such as asbestos, lead, mercury, PCBs and mould. In order to conform to the CSA Z768-01 Phase I ESA standard, Golder is commenting on the following non-building related sections.

4.1 Outside (Exterior) Areas

The entire Site is generally flat and consists of a paved parking lot with a temporary ticket booth located near the middle of the parking lot.

4.2 Interior (Building) Areas

There are no permanent buildings on the Site. There is a temporary parking booth being used by the tenants (parking company).

4.3 Solid Waste Disposal Practices and/or Areas of Storage/Waste

There is no waste storage/disposal areas located on the Site.

4.4 Water and Wastewater Discharges

Surface water drains to local catch basins and storm sewers.

4.5 Odour, Noise and Vibration

Noise and vibration may be encountered from traffic along adjacent road (Nepean Street).

4.6 Electromagnetic Radiation (“EMF”)

Electromagnetic radiation is generally associated with high voltage power lines. No high voltage power lines were observed within 250 m of the Site.

4.7 Storage Tanks

4.7.1 Aboveground Storage Tanks (“AST”)

No ASTs were observed on the Site.

4.7.2 Underground Storage Tanks

Based on information obtained during the Phase I ESA, no petroleum or chemical USTs are suspected to be present on the Site. No evidence (fill/vent pipes extending through slabs/ground surface, no staining or any obvious odours) was observed during the Site visit to indicate the current or former presence of fuel or chemical USTs.

4.8 Storage, Handling and Disposal of Hazardous Materials

There are no buildings on the Site and therefore no storage or handling of hazardous materials occurs on the Site.

4.9 Adjacent Land Use

Based on visual observations during the Site visit, adjacent property use is for residential, office and commercial (parking lots) purposes. A summary of adjacent land use is as follows:

North

- Nepean Street, parking lot, commercial and residential buildings;

South

- Residential apartment building;

East

- Small apartment building and parking lot; and,

West

- Parking lot with parking booth.

No current industrial complexes, retail fuel outlets or dry cleaning facilities are present in the immediate vicinity of the Site. Based on current adjacent land uses, no issues of potential environmental concern were identified.

5.0 FINDINGS

Based on the information obtained during the Phase I ESA, issues of potential environmental concern related to potential impacts to soil and/or groundwater were identified as follows:

- Aerial photographs indicate that most of the properties surrounding and on the Site have been converted from residential uses to parking lots, high rise residential and commercial uses. Unknown tank performance and historic demolition practices on the Site and adjacent properties indicate issues of potential environmental concern associated with former heating oil tanks;
- The review of the FIPs has indicated that a property within 250 m radius of the study area on the southeast corner of O'Connor Street and Laurier Avenue West was used as a gasoline service station with three (3) underground storage tanks (USTs); and,
- The Ecolog ERIS report indicated that there are a number of waste generators on adjacent properties (up-gradient and cross-gradient to the Site), as well as spill occurrences on adjacent land up-gradient to the Site and fuel storage tanks in the vicinity of the Site. The presence of these facilities and associated activities is considered an issue of potential environmental concern for the Site.

At the time this report was issued, a response letter from the Ontario Ministry of Environment and the City of Ottawa had not been received by Golder. When a formal response to Golder's request for information is received, it will be reviewed. If, in Golder's opinion, the responses detail any issues of potential environmental concern with respect to the Site, a copy of the reports will be forwarded to Claridge (with a brief discussion) so that it can be appended to this report.

6.0 PHASE II ENVIRONMENTAL SITE ASSESSMENT

The scope of work for the Phase II ESA was designed to assess the issues of potential environmental concern that were identified during the Phase I ESA. The main issue of concern investigated was related to potential release of hydrocarbons associated with the historic use of heating oil in structures on and in the area of the Site.

6.1 Health and Safety

Prior to initiating the fieldwork, Golder developed and implemented site-specific protocols to protect the health and safety of its employees and subcontractors through the preparation of a site-specific Health and Safety Plan.

6.2 Underground Utility Locates

Prior to commencing the intrusive field program, Golder retained a private utility locations contractor to identify the locations of private and public utilities within the work area.

6.3 Soil and Groundwater Investigation

6.3.1 Borehole Drilling, Soil Sampling and Monitoring Well Installation

In order to investigate the subsurface conditions at the Site, two (2) boreholes were drilled on-Site on September 7, 2011 and equipped with monitoring wells: BH 11-1 in the northwest corner of the Site and BH 11-2A/B in the southeast corner of the Site. Upon receipt of the soil and groundwater analytical results from these locations, seven (7) additional boreholes were drilled to form a grid pattern on the Site to assess the presence and degree of petroleum hydrocarbon impacts on the Site.

The approximate locations of the boreholes are shown on Figure 2. Details of the borehole drilling and monitoring well installations at the Site, as well as the groundwater level measurements, are provided in the following table:

Table 1: Summary of the Borehole Drilling and Monitoring Well Installation Program

Borehole ID	Ground Surface Elevation (m)[1]	Borehole Depth (mbgs)[2]	Depth to Bedrock (mgbs)[2]	Approximate Depth of Screen Interval (mbgs)[2]	Groundwater Level (mbgs)[2,3]	Groundwater Elevation (m)[1,3]
BH 11-1	99.98	10.01	10.01	7.3 – 8.9	8.09	91.89
BH 11-2A BH 11-2B	99.73	13.31	11.15	3.9 – 7.0 7.3 – 8.8	8.31 Dry	91.42 --
BH 11-3	100.04	10.36	9.91	7.1 – 10.1	8.13	91.91
BH 11-4	100.05	11.10	11.10	7.3 – 8.8	8.05	92.00
BH 11-5	100.09	10.42	8.84	7.3– 8.8	8.18	91.91
BH 11-6	100.20	10.77	9.69	7.0 – 8.5	Dry	--
BH 11-7	100.10	10.52	10.00	7.3 – 8.8	8.14	91.96
BH 11-8	100.29	10.91	9.68	7.4 – 9.0	8.30	91.99
BH 11-9	100.31	11.43	8.99	7.3 – 10.4	8.37	91.94

Notes:
1. Based on a local datum assigned as the top of the spindle on the fire hydrant located near the northwest corner of the Site along Nepean Street.
2. Metres below ground surface.
3. Measured on September 23 or September 26, 2011.

The additional borehole drilling and monitoring well installation program, comprised of BH11-3 through 11-9, was conducted between September 20th and 25th, 2011. A truck-mounted drill rig was utilized to complete the drilling and was supplied and operated by Marathon Drilling of Greely, Ontario. The borehole drilling and monitoring well installation activities were monitored in the field by Golder personnel. Soils at each borehole were sampled using stainless steel spilt spoons.

Soil samples were logged in the field for evidence of impact (i.e., odours and staining). Soil samples were split and one portion was placed in plastic bags to permit headspace measurements using a photoionization detector (PID) instrument. The PID was calibrated to 100 parts per million isobutylene gas. The other portion was placed in a glass jar for possible laboratory analysis, if selected. The selection of samples for laboratory analyses was based on the headspace measurements and visual and olfactory observations made in the field. Selected soil samples were submitted under chain of custody procedures to Canadian Association for Laboratories Accreditation (CALA) accredited Maxxam Analytics of Ottawa (Maxxam) for laboratory analysis of BTEX (benzene, toluene, ethylbenzene and xylenes) and PHCs F1 to F4. Several soil samples were collected from each borehole location. Four (4) duplicate soil samples were collected for quality assurance/quality control (QA/QC) purposes.

Following the completion of drilling the boreholes, monitoring wells were installed, constructed of a 32 or 38 millimetre diameter PVC pipe and a 1.5 m or 3.0 m long #10 slot well screen, and finished with a flush mount protective aluminum casing. Silica sand backfill (granular filter) was placed in the borehole around the screened portion of the monitoring well and a bentonite seal was placed above the screened interval. Upon completion of the monitoring well, low-density polyethylene (LDPE) tubing and a Waterra foot valve were placed in each monitoring well. The monitoring wells were subsequently surveyed to determine their elevations based on a local datum assigned as 100.00 m on the top of the spindle on the fire hydrant located near the northwest corner of the Site along Nepean Street.

Borehole and monitoring well details are presented on the Record of Boreholes in Appendix E.

6.3.2 Groundwater Sampling

Golder collected groundwater samples from the original monitoring wells (MW11-1, MW11-2A and MW11-2B) on September 7, 2011. On September 23 or September 26, 2011, all the on-Site monitoring wells were sampled with the exception of MW11-2B and MW11-6, which were dry and therefore could not be sampled. Prior to sampling, the static water level was recorded at each well and the wells were purged by the removal of approximately three (3) well volumes. The purge groundwater from the wells was containerized on-Site. The groundwater samples were collected directly into laboratory supplied bottles, placed in a cooler with ice and submitted under chain of custody documentation to Maxxam for analysis of BTEX and PHCs F1 to F4. One duplicate groundwater sample was collected for QA/QC purposes.

6.4 Results

6.4.1 Applicable Standards and Guidelines

Provincial standards described in the Ontario Ministry of the Environment (MOE) document *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* dated April 15, 2011 are currently used for the assessment of potentially contaminated sites in the context of Ontario Regulation (O. Reg.) 153/04 as amended.

- The Site is located within an area which is serviced by a municipal drinking water supply and does not rely on the local groundwater. No drinking water supply wells are known to be present on the Site or adjacent properties. Thus, existing private and municipal water supplies will not be adversely affected if non-potable groundwater standards are utilized for this Site;
- The most sensitive land use of the Site is residential/parkland/institutional;
- The Site is not adjacent to a water body and does not contain land that is within 30 m of a water body;
- Overburden encountered in the boreholes is greater than 2 metres in thickness; and,
- The Site is not located within an area of natural significance or included or is adjacent to such area.

Based on the above Site-specific features, the applicable MOE standards are provided below:

- For soil: MOE Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, coarse-textured soil, April 15, 2011. (2011 MOE Table 3).
- For groundwater: MOE Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, All Types of Property Uses, coarse-textured soil, April 15, 2011. (2011 MOE Table 3).

6.4.2 Subsurface Conditions

The subsurface conditions observed during the borehole drilling program are generally described as about 1.7 to greater than 2 m of fill consisting of sand, gravel and brick underlain by brown to grey silty clay to approximately 6.5 mbgs to 8.0 mbgs. The clay is underlain by an approximately 3 m thick layer of glacial till which extends to the bedrock surface. Shale bedrock was encountered at approximately 9 mbgs to 11 mbgs, the upper portion of which is weathered. Groundwater was encountered in the most of the monitoring wells at approximately 8 mbgs. As illustrated on Figure 2, the groundwater elevations across the Site do not show a definite direction of groundwater flow; groundwater flow direction can be locally influenced by such features as underground utilities, drainage of basement levels, etc.

Soil conditions observed at the boreholes are summarized in the Record of Boreholes Sheets in Appendix E. Also, variations other than those encountered at the sampling locations may exist between sampling locations.

6.4.3 Soil Analytical Results

The soil analytical data were compared to the applicable standards, as discussed in Section 6.4.1. Summary tables of analytical results are provided in Table 1 in Appendix F and the laboratory certificates of analyses are provided in Appendix G. A summary of the soil analysis is provided below:

- Twelve (12) samples of silty clay including two (2) duplicate samples submitted for laboratory analysis had PHC F1 to F4 and BTEX concentration below the reportable detection limits (RDLs);

- Within the glacial till layer, there were detections of toluene, ethylbenzene, xylenes, PHC F1, PHC F2 and/or PHC F3 below the MOE Table 3 Standard in all five (5) till samples submitted for laboratory analysis (includes one (1) duplicate sample). It is noted that PHC F1 was measured at the MOE Table 3 standard of 55 µg/g in one (1) of the till sample (BH 11-6 SA8); and,
- Within the upper weathered shale, there were detections of toluene, ethylbenzene, xylenes, PHC F1, PHC F2 and/or PHC F3 in all four (4) samples submitted for laboratory analysis. Of these, two (2) samples exceeded the MOE Table 3 Standard of 55 µg/g for PHC F1: BH 11-5 SA11 (61 µg/g) and BH 11-6 SA11 (200 µg/g). These samples were collected from a depth of approximately 10 mbgs.

6.4.4 Groundwater Analytical Results

The groundwater analytical data were compared to the applicable standards, as discussed in Section 6.4.1. Summary tables of analytical results are provided in Table 2 in Appendix F and the laboratory certificates of analyses are provided in Appendix G. A summary of the groundwater analysis is provided below:

- There were detections of BTEX and/or PHCs in all groundwater samples except for MW 11-3 and MW 11-9. Of these detections, the following three (3) samples exceeded the MOE Table 3 Standard of 150 µg/L for PHC F2:
  - MW 11-2B in the southeast corner of the Site (160 µg/L);
  - MW 11-5 along the west central side of the Site (170 µg/L); and,
  - MW 11-8 in the southwest corner of the Site (300 µg/L).

6.4.5 Quality Assurance/Quality Control

All soil and groundwater samples were collected in general accordance with the Canadian Council of Ministers of the Environment (CCME) Guidance Manual on Sampling, Analysis and Data Management for Contaminated Sites (December 1993) and with the Guidance Manual on Sampling and Analytical Methods for Use at Contaminates Sites in Ontario (May 1996). The sampling quality assurance (QA) procedures included, but were not limited to:

- New, sterilized sampling containers from the analytical laboratory were used to collect all samples;
- Personnel conducting sampling wore new, clean nitrile chemical resistant gloves to collect the samples and handle all sample materials;
- Once samples were collected, all laboratory containers were immediately sealed and placed in coolers with ice for shipping to the analytical laboratory or were placed in a refrigerator to prevent the temperature of the samples from rising to an unacceptable level;
- Documentation of approximate sampling locations, the date of sample collection and condition of samples; and,
- Samples were submitted to the analytical laboratory under chain of custody documentation.

The data collected during the Phase II ESA field program was evaluated according to the following criteria to evaluate its validity: accuracy, precision, completeness, representativeness and comparability. A discussion of each criterion as it relates to the QA/QC program is provided below.

6.4.5.1 Accuracy

Accuracy is a measure of how close a measured value is to the true value. The accuracy of the laboratory data is generally evaluated by the laboratory through the use of matrix spikes or surrogate recoveries. A review of the laboratory's QA/QC report, which was provided with the analytical data in Appendix G, shows that matrix spike recovery percentages were within the acceptable limits. Therefore, the data is considered to be accurate.

6.4.5.2 Precision

Precision is a measurement of the repeatability of the methods employed, i.e., sampling methods. Precision is evaluated through the testing of blind field duplicate samples. One (1) duplicate groundwater and four (4) duplicate soil samples were collected and submitted for laboratory analysis.

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

$$RPD = \frac{|x_2 - x_1|}{\left(\frac{x_1 + x_2}{2}\right)} \times 100$$

Where, x_1 and x_2 are the original and duplicate concentrations. RPDs can only be calculated if concentrations of a parameter are greater than the analytical reportable detection limit (RDL) in both the duplicate and original samples. Additionally, lower precision in the RPD calculation is expected when concentrations are less than 10 times the RDL. RPDs were calculated when concentrations of a parameter were greater than the analytical RDL in both the duplicate and original samples.

The commonly accepted industry standard data quality objective (DQO) for the RPD in soil between a sample and its duplicate is 50% and in groundwater between a sample and its duplicate is 30%. The RPDs for all parameter concentration pairs were below 30% (for groundwater) and 50% (for soil).

Based on the information above, the analytical results are considered to be precise.

6.4.6 Completeness

Completeness is evaluated by comparing the planned sampling program with the sampling program that was actually completed and evaluating discrepancies. In our opinion adequate quantities of samples were obtained from the media of interest to provide completeness at the Phase II ESA step. It is noted that a groundwater sample was not collected at MW 11-6; however, given the size of the land parcel within the Site, the groundwater samples collected are considered sufficient to assess groundwater quality within the land parcel of the Site.

6.4.6.1 Representativeness

Representativeness describes how well the data represents the environmental condition being measured. Representativeness was evaluated by reviewing several factors qualitatively including:

- Field procedures and laboratory methods followed industry-accepted practices (i.e., sample collection methods, decontamination procedures, laboratory analytical methods, samples containers, sample preservative(s), holding times and chain of custody documentation);
- Sampling program was adequate and sufficient to characterize the subsurface and contamination;
- Sample analytical results were generally consistent with visual/olfactory observations; and,
- The Phase II ESA field program met all of the above listed factors; therefore, data collected are considered to be representative of Site conditions.

6.4.6.2 Comparability

Comparability describes how well collected data can be compared to other sample results (current and previous investigations) or criteria. Field procedures and analytical methods were kept consistent throughout the Phase II ESA sampling program to allow for comparison of data across the Site to each other as well as with previously collected data. Field procedures and analytical methods followed industry-approved standards to allow for comparison of data with the applicable MOE standards.

Based on the above information, data collected as part of the Phase II ESA field program are considered to be comparable.

6.5 Summary and Interpretation of Findings

Based on the results of the current investigation, it was interpreted that the likely source of measured hydrocarbon impacts is the release of heating oil to the ground, which would be expected to have occurred at some location(s) at shallow depth either on-Site or off-Site. Considering that there was no apparent contamination observed in the silty clay soils, and that all silty clay samples analysed reported hydrocarbon parameters below detection limits, it is interpreted that the source is not likely on the Site. Rather, the source may be somewhere off-Site and have travelled down to the water table (which is within the glacial till) and then spread via groundwater movement. This conceptual model is supported by the measured presence of hydrocarbons in the glacial till at various locations at the Site (at concentrations below the MOE Table 3 standards), in the upper bedrock at some locations (exceeding MOE Table 3 standard for PHC F1), and the presence of hydrocarbons in most samples of the groundwater underlying the Site (with exceedances of the MOE Table 3 standard for PHC F2 at three (3) locations).

7.0 LIMITATIONS AND USE OF REPORT

This report was prepared for the exclusive use of Claridge Homes Corporation. Should additional parties require reliance on this report, written authorization from Golder Associates Ltd. would be required. The report, which specifically includes all tables, figures and appendices is based on data and information collected during the soil assessment conducted by Golder Associates Ltd. and is based solely on the conditions of the property at the time of the field investigation, supplemented by historical information and data obtained by Golder Associates Ltd. as described in this report.

The assessment of environmental conditions at the Site has been made using the results of chemical analyses of discrete soil and groundwater samples from a limited number of locations. The Site conditions between and beyond sampling locations have been inferred based on conditions observed at sample locations. Subsurface conditions may vary from these sample locations. Additional study, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of study. However, it is never possible, even with exhaustive sampling and testing, to dismiss the possibility that part of a site may be contaminated and remain undetected.

The services performed as described in this report were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. Golder Associates Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The content of this report is based on information collected during our investigation, our present understanding of the site conditions, and our professional judgement in light of such information at the time of this report. This report provides a professional opinion and therefore no warranty is either expressed, implied, or made as to the conclusions, advice and recommendations offered in this report. This report does not provide a legal opinion regarding compliance with applicable Canadian laws. With respect to regulatory compliance issues, it should be noted that regulatory statutes and the interpretation of regulatory statutes are subject to change.

The findings and conclusions of this report are valid only as of the date of this report. If new information is discovered in future work, including excavations, borings, or other studies, Golder Associates Ltd. should be requested to re-evaluate the conclusions of this report, and to provide amendments as required. The groundwater monitors installed during the course of this investigation has been left in place. These monitors are the property of Claridge and not Golder Associates Ltd.

8.0 CLOSURE

We trust that this report meets your current needs. If you have any questions, or if we may be of further assistance, please do not hesitate to contact the undersigned.

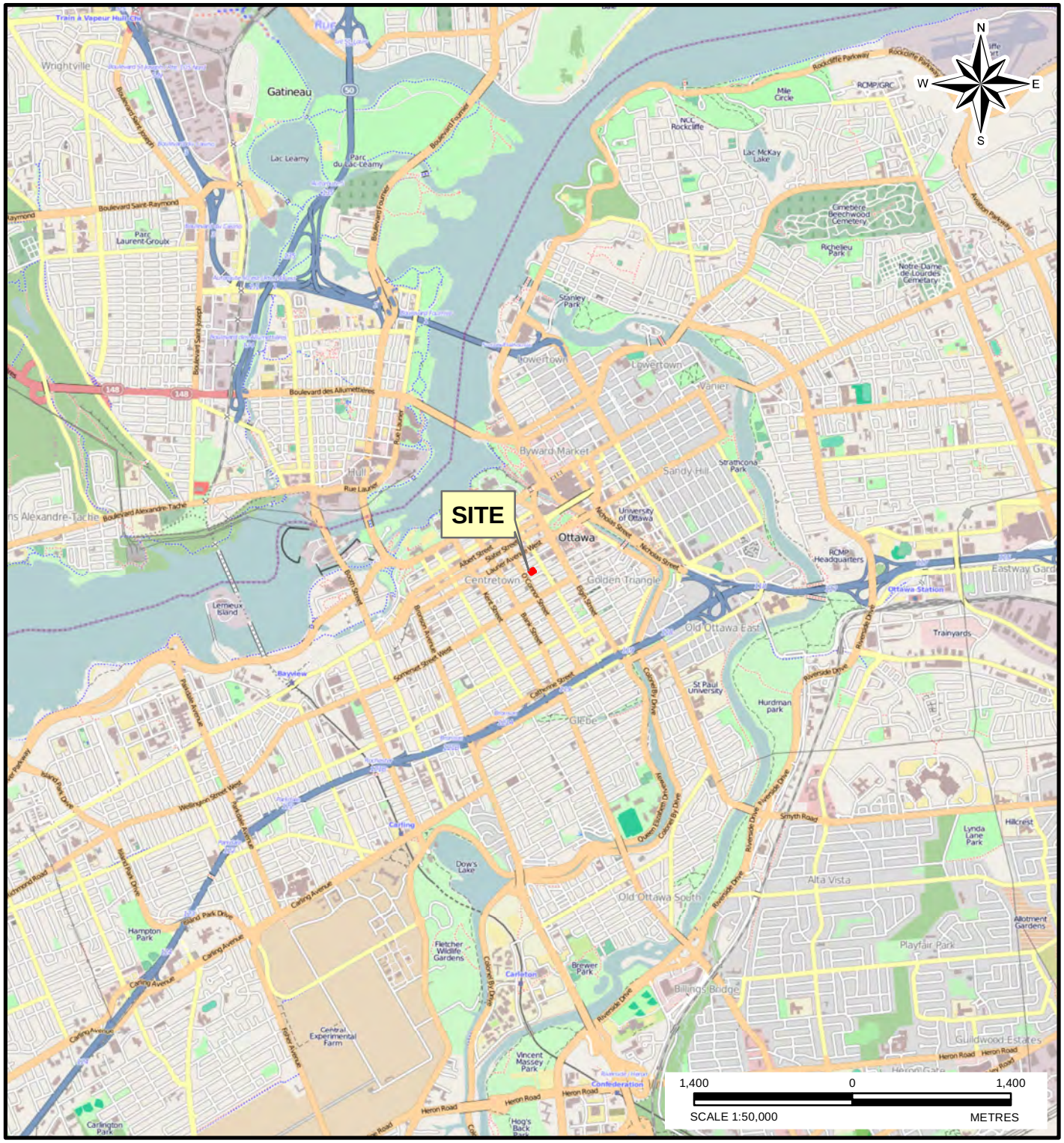
Yours truly,

GOLDER ASSOCIATES LTD.

Brandon McParlan, B.Sc.
Junior Environmental Consultant

Paul Smolkin, P.Eng.
Principal

BCJM/BGS/AC/PAS/hw
\\ott1-s-filesrv1\data\active\2011\1121 - geotechnical\11-1121-0202 claridge nepean st ottawa\report\phase i esa 15nov2011.docx



NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT No. 11-1121-0202

REFERENCE

DATA PROVIDED BY ESRI CANADA ARCGIS ONLINE 2011
DATUM: NAD 83, COORDINATE SYSTEM: UTM ZONE 18

Golder Associates
Ottawa, Ontario

PROJECT No.	11-1121-0202
SCALE	AS SHOWN
REV.	0
DATE	Nov. 2011
DESIGN	BM
GIS	JEM
CHECK	BM
REVIEW	PAS

TITLE

KEY PLAN

PROJECT PHASE I/II ENVIRONMENTAL SITE ASSESSMENT
96 NEPEAN STREET, OTTAWA, ONTARIO

FIGURE 1

Path: N:\Active\20111121 - Geotechnical\11-1121-0202 Claridge Nepean St Ottawa\Spatial_IMMXD\1111210202-01.mxd

LEGEND

- APPROXIMATE LOCATION OF BOREHOLE AND MONITORING WELL
- APPROXIMATE SITE BOUNDARY
- 91.94 GROUNDWATER ELEVATION, metres (LOCAL DATUM), SEPTEMBER 23 OR 26, 2011

NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT No. 11-1121-0202.

REFERENCE

DATA PROVIDED BY ESRI CANADA, 2011
DATUM: NAD 83, COORDINATE SYSTEM: UTM ZONE 18

Golder Associates
Ottawa, Ontario

PROJECT No.	11-1121-0202
SCALE	AS SHOWN
REV.	0
DATE	Nov. 2011
DESIGN	AC
GIS	BR
CHECK	BM
REVIEW	PAS

TITLE

SITE PLAN

PROJECT PHASE I/II ENVIRONMENTAL SITE ASSESSMENT
96 NEPEAN STREET, OTTAWA, ONTARIO

FIGURE 2

Path: N:\Active\20111121 - Geotechnical\11-1121-0202 Claridge Nepean St Ottawa\Spatial_IMMXD\1111210202-02.mxd

APPENDIX A

Qualifications of Environmental Assessors

Education

B.Sc. Environmental Resource Sciences, Trent University, Peterborough, Ontario, 2011

Environmental Technologist, Sir Sandford Fleming College, Lindsay, Ontario, 2009

Certifications

Languages

English – Fluent

Golder Associates Ltd. – Ottawa

Employment History

Golder Associates Ltd. – Ottawa, Ontario
Junior Environmental Consultant (2011 to Present)

Responsible for assisting project managers with Phase I/II ESAs. Field activities include groundwater level measurement, groundwater sampling. Office duties include data management, analysis and interpretation and contribution to writing proposals and reports.

Golder Associates Ltd. – Ottawa, Ontario
Geotechnical Field Technician
(May 2008, 2009, 2010 to September 2008, 2009, 2010)

Responsible for carrying out geotechnical QA/QC inspections including concrete and soil testing and sampling, pile inspections, and soil density/compaction testing.

Sir Sandford Fleming College – Lindsay, Ontario
Student Technician (2008 to 2009)

Responsible for maintaining and monitoring the Alternative Wastewater Treatment Solar Ecology System, assisted professors with the set up, conducting and dismantling of labs, assisted 2nd year students with field and lab measurements of soil groundwater and surface water and provided overall support to professors.

Education

B.A.Sc. Civil, University of Waterloo, Waterloo, Ontario, 1977

Post Graduate Courses Geotechnical Engineering, Ottawa and Carleton Universities, Ottawa, Ontario, 1977 and 1979

Certifications

Registered Professional Engineer, Ontario

Designated Consulting Engineer, Ontario

Golder Associates Ltd. – Ottawa

Employment History

Golder Associates Ltd. – Ottawa, Ontario
Associate, then Principal (1988 to Present)

Responsible for business development, technical and administrative management and senior review of hydrogeological engineering, contaminant investigations and site remediation, and waste facility siting, design and operations services from the Ottawa office. Hydrogeologic assessments for private services developments, communal water supply investigations and test/production well drilling programs, individual and communal sanitary effluent disposal; project manager for regional groundwater resource management and communal wellhead protection studies; assessment of physical and contaminant hydrogeology at existing municipal landfills, waste disposal sites and industrial/commercial facilities; investigation, design and implementation of remediation of soil and groundwater, including risk assessment approaches; investigation of contaminated water supply systems and remedial action programs.

Since the late 1980's, senior consultant / advisor /reviewer on Phase I and II Environmental Site Assessments on residential, institutional, commercial and industrial facilities as part of due diligence processes in property transactions. Provision of advice during negotiations on behalf of purchasers, vendors, lenders and legal counsel. Projects have involved a broad range of contaminants (metals, petroleum hydrocarbons, PAH's, solvents, coal tar) and investigations in a variety of hydrogeologic settings. Preparation of remedial action plans (RAP's) from concept through detailed design and integration with overall site redevelopment, and remediation cost estimates to meet both generic criteria and those established through the Risk Assessment process under Ontario guidelines and regulations, monitoring and verification of site remediation and completion of Record of Site Conditions. Approved as a Qualified Person under Ont. Reg. 153 for RAP's and provision of review of the RAP components of site-specific risk assessments on behalf of the MOE. Retained to provide third party peer review of contaminated site investigations and remediation programs conducted by other consultants, and to provide expert opinion and advice related to legal claims.

Hydrogeological and geotechnical consultant in landfill site selection, site characterization and containment system design in Waste Management Planning Studies; team leader and team member in applications for continued use and expansion of existing landfill sites under both the Environmental Assessment and Environmental Protection Acts; amendments to Certificates of Approval for waste disposal sites in eastern and northern Ontario. Expert witness testimony at OMB, EAB and arbitration hearings; senior third party peer review of site remediation programs.

Waste containment system design and performance evaluation includes municipal landfill liners and leachate collection systems, final cover designs and the hydrogeological aspects of leachate recirculation; also site development and operations planning and participation on multi-disciplinary design teams. Project engineer for the geotechnical design and CQA of 110 hectares of composite

bottom liner and leachate collection systems and geomembrane final closure covers at the Trail Road municipal landfill. Since 1997, project manager/engineer for geotechnical and hydrogeoogical studies; overall site design concept; engineered containment system design, specifications, tendering and CQA; EAA/EPA approvals; on-site leachate treatment and management, and participation in ongoing site operations and performance evaluation for the Lafleche Eastern Ontario Waste Handling Facility. Solid Waste Market Sector Leader for Golder Associates Canada (1995-2002) and project manager for solid waste facility siting and EIA/FS for two cities in the Philippines.

Golder Associates Ltd. – Ottawa, Ontario

Geotechnical Engineer/Senior Geotechnical Engineer (1977 to 1988)

Responsible for the initiation, development and integration of hydrogeological and environmental engineering projects into the range of services offered from the Ottawa office. Responsible for geotechnical investigations, reports and construction services for foundations, slope stability, erosion, embankment design and the geotechnical aspects of land use planning.

APPENDIX B

Regulatory Documentation

McParlan, Brandon

From: plal@tssa.org on behalf of publicinformationservices@tssa.org
Sent: Monday, November 14, 2011 9:29 AM
To: McParlan, Brandon
Subject: Re: 96 Nepean Street, Ottawa, Ontario

Hi Brandon:

Thank you for your inquiry.

We have no record in our database of any fuel storage tanks at the subject address (addresses).

For a further search in our archives please submit your request in writing to Public Information Services via e-mail (publicinformationservices@tssa.org) or through mail along with a fee of $56.50 (including HST) per location. The fee is payable with credit card (Visa or MasterCard) or with a Cheque made payable to TSSA.

Thank you and have a great day!

Prem

"Putting Public Safety First"

Technical Standards and Safety Authority
14th Floor, Centre Tower
3300 Bloor Street West
Toronto, ON M8X 2X4

Toll-Free: 1-877-682-8772
Email: publicinformationservices@tssa.org
Web Site: www.tssa.org

"McParlan, Brandon" <Brandon_McParlan@golder.com>

11/14/2011 08:46 AM

To "publicinformationservices@tssa.org" <publicinformationservices@tssa.org>
cc
Subject 96 Nepean Street, Ottawa, Ontario

To whom it may concern,

Could you please review your records to determine if any bulk fuel underground storage tanks (USTs) were registered at 96 Nepean Street in Ottawa, Ontario.

Also, could you check your records for the following five addresses;

257 Lisgar Street;
237 Lisgar Street:
91 Nepean Street;
88 Nepean Street; and,
171 O'Connor Street.

Thank you,

Brandon McParlan

Brandon McParlan (B.Sc.) | Junior Environmental Consultant | **Golder Associates Ltd.**
32 Steacie Drive, Kanata, Ontario, Canada K2K 2A9
T: +1 (613) 592 9600 | **D:** +1 (613) 592 9600 | **F:** +1 (613) 592 9601 | **C:** +1 (613) 880-4891 | **E:** Brandon_McParlan@golder.com | **www.golder.com**

Work Safe, Home Safe

This electronic message and any attached documents are intended only for the named addressee(s).
This communication from the Technical Standards and Safety Authority may contain information that is privileged, c
copied, forwarded or distributed without authorization. If you have received this message in error, please notify the se
Thank you.

Golder Associates

FACSIMILE

DATE November 14, 2011

PROJECT No. 11-1121-0202

TO Ministry of the Environment

FAX No. 613-521-5437

CC

TOTAL PAGES 1 (Including cover sheet)

FROM B. McParlan

EMAIL bmcparlan@golder.com

REQUEST FOR ENVIRONMENTAL INFORMATION FOR A PHASE I ENVIRONMENTAL SITE ASSESSMENT, 96 NEPEAN STREET, OTTAWA, ONTARIO

We are in the process of preparing a Phase I Environmental Site Assessment for the site noted above.

It is requested that the Ministry provide an Index Review Report with respect to the following:

- Active Orders under the Environmental Protection Act (EPA), the Ontario Water Resources Act (OWRA), and the Pesticides Act (PA); and,
- Approvals under Sections 9 and 39 of the EPA as well as Sections 52 and 53 of the OWRA.

Your usual prompt attention to this matter is appreciated. Should you have any questions please contact our office.

Golder Associates Ltd.

BM

Hard copy to follow by mail: ☐ Yes ☑ No

N:\Active\2011\1121 - Geotechnical\11-1121-0202 Claridge Nepean St Ottawa\Phase I ESA\Fax-001 MOE Request.doc

Golder Associates Ltd.
32 Steacie Drive, Kanata, Ontario, Canada K2K 2A9
Tel: +1 (613) 592 9600 Fax: +1 (613) 592 9601 www.golder.com
Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

********** -COMM. JOURNAL- ********** DATE NOV-14-2011 ***** TIME 09:04 ********

MODE = MEMORY TRANSMISSION START=NOV-14 09:03 END=NOV-14 09:04

FILE NO.=411

STN NO.	COMM.	STATION NAME/EMAIL ADDRESS/TELEPHONE NO.	PAGES	DURATION
001	OK	☎96135215437	001/001	00:00:47

***** UF-7000 v2 ********** - - ***** - - *********

Golder Associates

FACSIMILE

DATE November 14, 2011 **PROJECT No.** 11-1121-0202

TO Ministry of the Environment **FAX No.** 613-521-5437

CC **TOTAL PAGES** 1 (including cover sheet)

FROM B. McParlan **EMAIL** bmcparlan@golder.com

REQUEST FOR ENVIRONMENTAL INFORMATION FOR A PHASE I ENVIRONMENTAL SITE ASSESSMENT, 96 NEPEAN STREET, OTTAWA, ONTARIO

We are in the process of preparing a Phase I Environmental Site Assessment for the site noted above.

It is requested that the Ministry provide an Index Review Report with respect to the following:

- Active Orders under the Environmental Protection Act (EPA), the Ontario Water Resources Act (OWRA), and the Pesticides Act (PA); and,
- Approvals under Sections 9 and 39 of the EPA as well as Sections 52 and 53 of the OWRA.

Your usual prompt attention to this matter is appreciated. Should you have any questions please contact our office.

Golder Associates Ltd.

BM

Hard copy to follow by mail: ☐ Yes ☑ No

N:\Active\2011\1121 - Geotechnical\11-1121-0202 Claridge Nepean St Ottawa\Phase I ESA\Fax-001 MOE Request.doc

Golder Associates Ltd.
32 Steacie Drive, Kanata, Ontario, Canada K2K 2A9
Tel: +1 (613) 592 9600 Fax: +1 (613) 592 9601 www.golder.com
Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

Golder Associates

FACSIMILE

DATE November 14, 2011

PROJECT No. 11-1121-0202

TO City of Ottawa
Development Approvals Division

FAX No. 613-560-6006

TOTAL PAGES 4 (Including cover sheet)

FROM B. McParlan

EMAIL bmcparlan@golder.com

REQUEST FOR ENVIRONMENTAL INFORMATION FOR A PHASE I ENVIRONMENTAL SITE ASSESSMENT, 96 NEPEAN STREET, OTTAWA, ONTARIO

We are in the process of preparing a Phase I Environmental Site Assessment for the above noted property and are requesting that the City provide information from their files with respect to this property.

As per your requirements we have included the Request for Information – Phase I Environmental Site Assessment form, a disclaimer form, property owner authorization and key plan.

The information that we are requesting includes, but is not limited to, the following:

- Active Orders under the Environmental Protection Act (EPA), the Ontario Water Resources Act (OWRA), and the Pesticides Act (PA)
- Approvals
- Reports relating to environmental concerns
- Records of non-compliance or regulatory concerns
- Dumping infractions, spills or discharges to the environment
- Violations of sewer use or environmental by-laws
- Historic information related to landfill or dumpsites on or in proximity to the property
- Any other environmental information

Your usual prompt attention to this matter is appreciated. Should you have any questions please contact our office.

GOLDER ASSOCIATES LTD.

Hard copy to follow by mail: ☐ Yes ☑ No

Golder Associates Ltd.
32 Steacie Drive, Kanata, Ontario, Canada K2K 2A9
Tel: +1 (613) 592 9600 Fax: +1 (613) 592 9601 www.golder.com
Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

File No.: 11-1121-0202
Deadline for Response: Dec. 5, 2011

Phase 1-Environmental Site Assessment

Request for Information

(Informal Request)*

1. REQUESTER INFORMATION

a) Name of Requester: Golder Associates Ltd.
b) Address of Requester: 32 Steacie Drive, Kanata, ON
c) Telephone Number: 613-592-9600
d) Site Address: Lot- Concession:
Street: 96 Nepean Street City/Town: Ottawa
Postal Code: N/A
e) Legal Plan Attached: Yes ( ) No (✓)
f) Site Owner: Claridge Homes
g) Adjacent Property Owners: Unknown
h) Date of Ownership: Unknown
Previous Owner(s): N/A
i) Type of Site: ( ) vacant land, ( ) residential, ( )commercial, (✓) other(specify)
j) Requester's Relationship to Site: Consultant
k) Date of Previous Request: N/A
l) Date of Previous ESA: N/A
m) Information Requested:
As per Fax Cover Sheet

2. CONFIDENTIALITY

a) Consent Required: (✓)Owner ( )Tenant ( )Purchaser ( )Legal*
b) Consent Obtained: (✓)Owner ( )Tenant ( )Purchaser ( )Legal*

*(Consent letters must contain the information required, give authorization to requestor, and be dated and signed.)
**(If formal MFIPPA request, please forward to Corporate Access and Privacy Coordinator, Clerk's Department)

DISCLAIMER

For use with HLUI Database

CITY OF OTTAWA ("the City") is the owner of the HISTORICAL LAND USE INVENTORY ("HLUI"), a database of information on the type and location of land uses within the geographic area of Ottawa, which had or have the potential to cause contamination in soil, groundwater or surface water.

The City, in providing information from the HLUI, to Golder Associates Ltd. ("the Requester") does so only under the following conditions and understanding:

1. This is a free service offered by the City.

2. The information which is contained in the HLUI has been compiled from publicly available records and other sources of information. The HLUI may contain erroneous information given that such records and sources of information may be flawed. Changes in municipal addresses over time may have introduced error in such records and sources of information. The City is not responsible for any errors or omissions in the HLUI and reserves the right to change and update the HLUI without further notice. The City does not, however, make any commitment to update the HLUI. Accordingly, all information from the HLUI is provided on an "as is" basis with no representation or warranty by the City with respect to the information's accuracy or exhaustiveness in responding to the request.

3. City staff will perform a search of the HLUI based on the information given by the Requester. City staff will make every effort to be accurate, however, the City does not provide an assurance, guarantee, warranty, representation (express or implied), as to the availability, accuracy, completeness or currency of information which will be provided to the Requester. The HLUI in no way confirms the presence or absence of contamination or pollution of any kind. The information provided by the City to the Requester is provided on the assumption that it will not be relied upon by any person whatsoever. The City denies all liability to any such persons attempting to rely on any information provided from the HLUI database.

4. The City, its employees, servants, agents, boards, officials or contractors take no responsibility for any actions, claims, losses, liability, judgments, demands, expenses, costs, damages or harm suffered by any person whatsoever including negligence in compiling or disseminating information in the HLUI.

5. Copyright is reserved to the City.

6. Any use of the information provided from the HLUI which a third party makes, or any reliance on or decisions to be based on it, are the responsibilities of such third parties. The City, its employees, servants, agents, boards, officials or contractors accept no responsibility for any damages, if any, suffered by a third party as a result of decisions made as a result of an information search of the HLUI.

7. Any use of this service by the Requestor indicates an acknowledgement, acceptance and limits of this disclaimer.

8. All information collected under this request and all records provided in response to this request are subject to the provisions of the *Municipal Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. M.56, as amended.

Signed: BMcParlan Dated: Nov. 14, 2011

Per: Brandan McParlan
(Please print name)

Title: Consultant

Company: Golder Associates.

This form has been prepared by Golder Associates, for client use, with regard to submissions to the City of Ottawa ("City") for environmental related information on the property noted below. It will be used by Golder Associates, who have been retained to carry out a Phase I Environmental Site Assessment.

This form is to be completed by the property owner/agent and forwarded to Golder Associates Ltd. who will then append it with a request for information to the City. The intent of the form is to notify the City that Golder Associates Ltd. is authorised to access the requested environmental information.

Property Location Information:

Civic Address	96 Nepean Street Ottawa, ON
Legal Description	PLAN 2996 PT LOTS 44, 45 & 46; Nepean S

Property Contact Information:

Owner	Claridge Homes (96 Nepean) Inc
Phone Number	613-233-6030
Fax Number	613-233-5290
Owner Representative	Neil Malhotra
Owner Representative Signature	
Date	Nov. 14/11

********** -COMM. JOURNAL- ********** DATE NOV-14-2011 ***** TIME 16:22 ********

MODE = MEMORY TRANSMISSION START=NOV-14 16:20 END=NOV-14 16:22

FILE NO.=412

STN NO.	COMM.	STATION NAME/EMAIL ADDRESS/TELEPHONE NO.	PAGES	DURATION
001	OK	☎96135606006	004/004	00:02:10

***** UF-7000 v2 ********** - - ***** - - *********

Golder Associates

FACSIMILE

DATE November 14, 2011

PROJECT No. 11-1121-0202

TO City of Ottawa
Development Approvals Division

FAX No. 613-560-6006

TOTAL PAGES 4 (Including cover sheet)

FROM B. McParlan

EMAIL bmcparlan@golder.com

REQUEST FOR ENVIRONMENTAL INFORMATION FOR A PHASE I ENVIRONMENTAL SITE ASSESSMENT, 96 NEPEAN STREET, OTTAWA, ONTARIO

We are in the process of preparing a Phase I Environmental Site Assessment for the above noted property and are requesting that the City provide information from their files with respect to this property.

As per your requirements we have included the Request for Information – Phase I Environmental Site Assessment form, a disclaimer form, property owner authorization and key plan.

The information that we are requesting includes, but is not limited to, the following:

- Active Orders under the Environmental Protection Act (EPA), the Ontario Water Resources Act (OWRA), and the Pesticides Act (PA)
- Approvals
- Reports relating to environmental concerns
- Records of non-compliance or regulatory concerns
- Dumping infractions, spills or discharges to the environment
- Violations of sewer use or environmental by-laws
- Historic information related to landfill or dumpsites on or in proximity to the property
- Any other environmental information

Your usual prompt attention to this matter is appreciated. Should you have any questions please contact our office.

GOLDER ASSOCIATES LTD.

Hard copy to follow by mail: ☐ Yes ☑ No

Golder Associates Ltd.
32 Steacie Drive, Kanata, Ontario, Canada K2K 2A9
Tel: +1 (613) 592 9600 Fax: +1 (613) 592 9601 www.golder.com
Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

APPENDIX C

Ecolog Eris Database Report

Canada's Primary Environmental Risk Information Service

Project Site:	**Un-named** **96 Nepean St** **Ottawa, ON**
Client:	**Basil Sullivan** **Golder Associates Ltd.** **32 Steacie Drive** **Kanata, ON K2K2A9**
ERIS Project No:	**20110830011**
Report Type:	**Standard Report - .25km Search Radius**
Prepared By:	**Matt Thompson** mthompson@eris.ca
Date:	**August 31, 2011**

Table of Contents

Order Number: 20110830011
Site Name: Un-named
Site Address: 96 Nepean St Ottawa, ON
Report Type: Standard Report, 0.25 km Search Radius

Report Summary

Order Number: 20110830011
Site Name: Un-named
Site Address: 96 Nepean St Ottawa, ON
Report Type: Standard Report, 0.25 km Search Radius

Number of Mappable Records Surrounding the Site

Database		Selected	On-site	Within 0.25	0.25km to 2.00km	Total
AAGR	Abandoned Aggregate Inventory	Y	0	0	0	0
AGR	Aggregate Inventory	Y	0	0	0	0
AMIS	Abandoned Mine Information System	Y	0	0	0	0
ANDR	Anderson's Waste Disposal Sites	Y	0	0	8	8
AUWR	Automobile Wrecking & Supplies	Y	0	0	3	3
BORE	Borehole	Y	0	14	1297	1311
CA	Certificates of Approval	Y	0	13	371	384
CFOT	Commercial Fuel Oil Tanks	Y	0	0	3	3
CHEM	Chemical Register	Y	0	0	2	2
COAL	Coal Gasification Plants	Y	0	0	3	3
CONV	Compliance and Convictions	Y	0	0	0	0
DRL	Drill Hole Database	Y	0	0	0	0
EBR	Environmental Registry	Y	0	2	29	31
EEM	Environmental Effects Monitoring	Y	0	0	0	0
EHS	ERIS Historical Searches	Y	0	26	315	341
EIIS	Environmental Issues Information System	Y	0	0	0	0
FCON	Federal Convictions	Y	0	0	0	0
FCS	Contaminated Sites on Federal Land	Y	0	0	83	83
FOFT	Fisheries & Oceans Fuel Storage Tanks	Y	0	0	0	0
FST	Fuel Storage Tank	Y	0	5	74	79
GEN	Ontario Regulation 347 Waste Generators Summary	Y	0	72	1396	1468
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0	0
MINE	Canadian Mine Locations	Y	0	0	1	1
MNR	Mineral Occurrences	Y	0	1	4	5
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0	0
NCPL	Non-Compliance Reports	Y	0	0	0	0
NDFT	National Defence & Canadian Forces Fuel Storage Tanks	Y	0	0	0	0
NDSP	National Defence & Canadian Forces Spills	Y	0	0	6	6
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0	0
NPCB	National PCB Inventory	Y	0	2	60	62
NPRI	National Pollutant Release Inventory	Y	0	0	62	62
OGW	Oil and Gas Wells	Y	0	0	0	0
OOGW	Ontario Oil and Gas Wells	Y	0	0	4	4
OPCB	Inventory of PCB Storage Sites	Y	0	2	35	37
PAP	Canadian Pulp and Paper	Y	0	0	13	13
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0	0
PES	Pesticide Register	Y	0	0	61	61
PRT	Private and Retail Fuel Storage Tanks	Y	0	1	53	54
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	6	6
RSC	Record of Site Condition	Y	0	1	28	29
RST	Retail Fuel Storage Tanks	Y	0	0	17	17

Report Summary

Order Number: 20110830011
Site Name: Un-named
Site Address: 96 Nepean St Ottawa, ON
Report Type: Standard Report, 0.25 km Search Radius

Database		Selected	On-site	Within 0.25	0.25km to 2.00km	Total
SCT	Scott's Manufacturing Directory	Y	0	31	378	409
SPL	Ontario Spills	Y	0	6	268	274
SRDS	Wastewater Discharger Registration Database	Y	0	0	4	4
TANK	Anderson's Storage Tanks	Y	0	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	0	6	6
WWIS	Water Well Information System	Y	0	4	120	124
		TOTAL	0	180	4,710	4,890

The databases chosen by the client as per the submitted order form are denoted in the 'Selected' column in the above table. Counts have been provided outside the primary buffer area for cursory examination only. These records have not been examined or verified, therefore, they are subject to change.

SITE DIAGRAM

ECOLOG ERIS
Pinpointing Your Environmental Risks
12 Concorde Pl, Suite 800 North York, ON M3C 4J2
416-510-5204

Project Property: Un-named
96 Nepean St
Ottawa, ON

ERIS Project #: 20110830011

Date: AUG-31-2011

LEGEND

- Project Property
- Database Location

Points of Interest
- Chimney
- Silo

Pipe & Transmission Lines
- Pipeline
- Transmission Line
- Transmission Tower
- Transformer Station

Rail
- Railway - Main
- Railway - Sidetrack
- Railway - Abandoned
- Bridge
- Tunnel

Transportation - Other
- Embankment
- Trail
- Runway

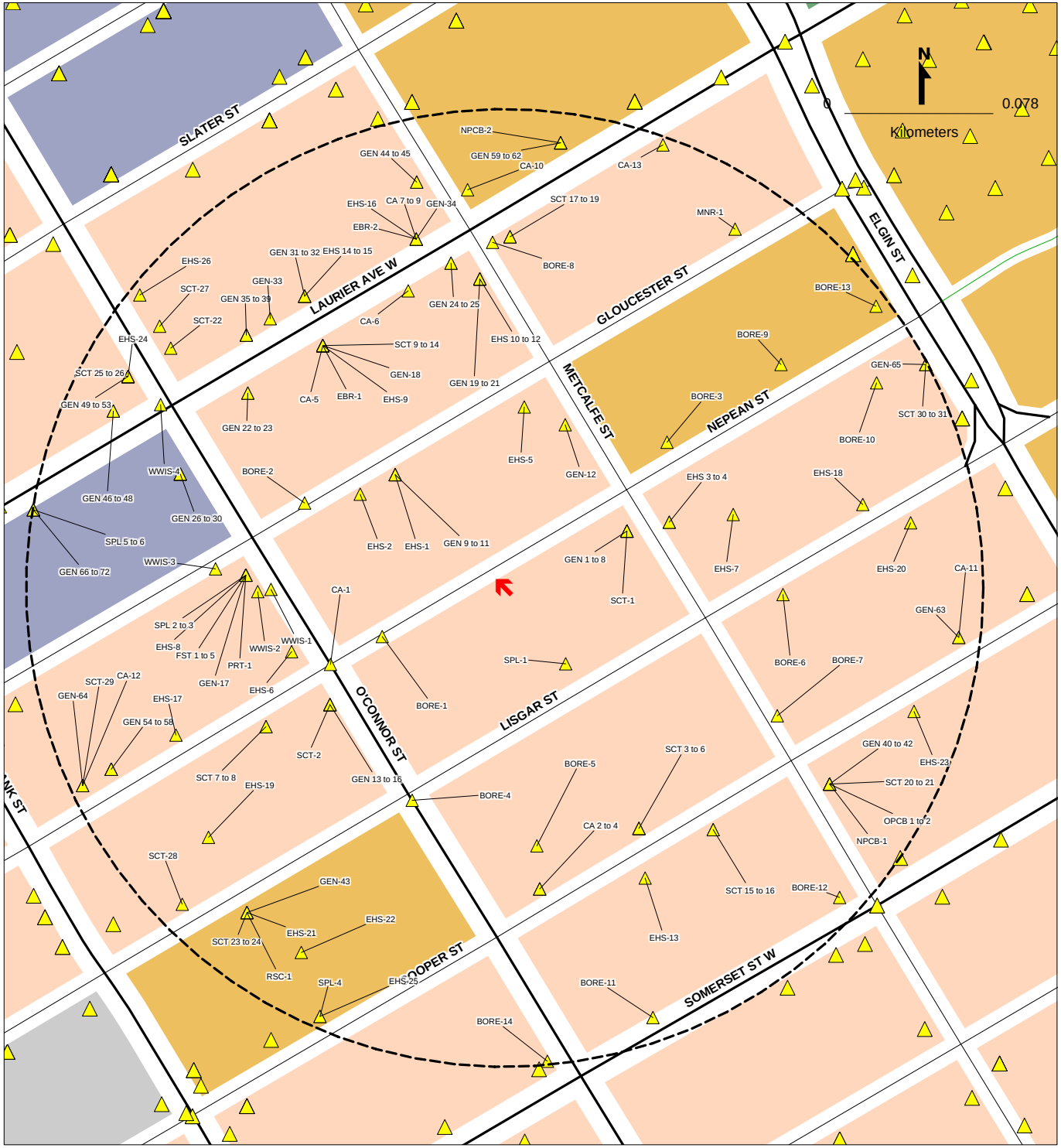
Hydrographic Features
- Permanent Waterway
- Intermittent Waterway
- Open Reservoir
- Dyke/Levee
- Dam
- Breakwall
- Wetland

Landuse Classifications
- Open Area
- Residential
- Commercial
- Resource and Industrial
- Government and Institutional
- Parks and Recreational
- Waterbody

Recreation
- Golf Course/Driving Range
- Park/Sports Field
- Other Recreation Area
- Sports/Race Track
- Cemetery
- Campground

Vegetation
- Wooded Area
- Orchard
- Vineyard

Industrial Resources
- Conveyor
- Crane: Moveable
- Crane: Stationary
- Tank
- Rock Cut
- Auto Wrecker
- Lumber Yard
- Pit



This diagram is to be used solely for relative street location purposes.
It may not accurately portray street or site positions.

Site Report

Order Number: 20110830011
Site Name: Un-named
Site Address: 96 Nepean St Ottawa, ON
Report Type: Standard Report, 0.25 km Search Radius

FOR COMPLETE INFORMATION, REFER TO DETAIL REPORT

A search has been conducted for this site (address) and company name. No records were found, within the database(s) selected, that meet either of these criteria.

Detail Report

Order Number: 20110830011
Site Name: Un-named
Site Address: 96 Nepean St Ottawa ON
Report Type: Standard Report, 0.25 km Search Radius

If information is required for sites located beyond the selected address, please contact your ERIS representative.

Borehole

Certificates of Approval

Environmental Registry

ERIS Historical Searches

Fuel Storage Tank

Ontario Regulation 347 Waste Generators Summary

Mineral Occurrences

National PCB Inventory

Inventory of PCB Storage Sites

Private and Retail Fuel Storage Tanks

Record of Site Condition

Scott's Manufacturing Directory

Ontario Spills

Water Well Information System

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-1			613333	Borehole	

Status:
Drill Method:
UTM Zone: 18
Easting: 445571.000
Northing: 5029652.000
Location Accuracy:
Orig. Ground Elevation(m): 71.599998
Elev. Reliability Note:
DEM Ground Elevation(m): 72.300003
Total Depth(m): -999.000000
Primary Name:
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level: 15.500000
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218394666	0	1.500000	SAND. BROWN.
218394667	1.500000	3.700000	CLAY. BROWN,FRACTURED.
218394668	3.700000		CLAY. GREY,FRACTURED. Y. GREY,STIFF. SAND. LOOSE, WATER STABLE AT 184.0 FEET.SAND. COM

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-2			613348	Borehole	

Status:
Drill Method:
UTM Zone: 18
Easting: 445531.000
Northing: 5029722.000
Location Accuracy:
Orig. Ground Elevation(m): 71.300003
Elev. Reliability Note:
DEM Ground Elevation(m): 71.800003
Total Depth(m): -999.000000
Primary Name:
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level:
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218394730	0	0.600000	SAND.
218394731	0.600000	1.800000	CLAY. FIRM.
218394732	1.800000		GRAVEL. . TILL. COMPACT. TILL. COMPACT. SAND. COMPACT. TILL. COMPACT. TILL. COMPACT.

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-3			613357	Borehole	

Status:
Drill Method:
UTM Zone: 18
Easting: 445721.000
Northing: 5029752.000
Location Accuracy:
Orig. Ground Elevation(m): 70.900002
Elev. Reliability Note:
DEM Ground Elevation(m): 71.800003
Total Depth(m): -999.000000
Primary Name:
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level: 4
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218394772	0	0.900000	FILL. COMPACT.
218394773	0.900000	1.200000	SAND. LOOSE.
218394774	1.200000	3.700000	CLAY. BROWN,STIFF.
218394775	3.700000	11.700000	CLAY. BROWN,STIFF.
218394776	11.700000	16.600000	TILL. GREY,LOOSE, WATER STABLE AT 219.4 FEET.
218394777	16.600000		BEDROCK. WEATHERED. WATER STABLE AT 215.4 FEET.BEDROCK. 00000 008 00100 014 00115

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-4			808773	Borehole	Geotechnical/Geological Investigation

Status:
Drill Method: Boring
UTM Zone: 18
Easting: 445585.962
Northing: 5029566.442
Location Accuracy:
Orig. Ground Elevation(m): 71.300003
Elev. Reliability Note:
DEM Ground Elevation(m): 72
Total Depth(m): 9.200000
Primary Name: BH 113
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level: 4.400000
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218597645	0	1.100000	Light Brown Sand Occasional: Blds
218597646	1.100000	6.700000	Brown to Grey Very Stiff to Stiff Silty Clay
218597647	6.700000	8.700000	Grey Compact Till sand silt With: Gr
218597648	8.700000	9.200000	Dark Grey to Black Shale

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-5			613315	Borehole	

Status:
Drill Method:
UTM Zone: 18
Easting: 445651.000
Northing: 5029542.000
Location Accuracy:
Orig. Ground Elevation(m): 71.199997
Elev. Reliability Note:
DEM Ground Elevation(m): 71.699997
Total Depth(m): -999.000000
Primary Name:
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level:
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218394611	0	1.500000	SAND. LOOSE.
218394612	1.500000	1.700000	SAND,PEBBLES. LOOSE.
218394613	1.700000	3	CLAY. GREY,HARD.
218394614	3	6.100000	CLAY. GREY,SOFT.
218394615	6.100000	7.600000	CLAY. GREY,FIRM.
218394616	7.600000	9.100000	TILL. LOOSE.
218394617	9.100000	10.100000	TILL. FIRM.
218394618	10.100000	12.300000	TILL. COMPACT.
218394619	12.300000		BEDROCK. 0050 043 00080 058 00115 062 00000062000500240022 6DENSE. BEDROCK.

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-6			613336	Borehole	

Status:
Drill Method:
UTM Zone: 18
Easting: 445781.000
Northing: 5029672.000
Location Accuracy:
Orig. Ground Elevation(m): 73.800003
Elev. Reliability Note:
DEM Ground Elevation(m): 71.300003
Total Depth(m): -999.000000
Primary Name:
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level: 17.700001
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218394675	0	1.500000	SAND.
218394676	1.500000		CLAY. GREY,SOFT. GRAVEL. BEDROCK. GREY. 00073Y. GREY,STIFF. SAND. LOOSE, WATER

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-7			806899	Borehole	Geotechnical/Geological Investigation

Status:
Drill Method: Hollow stem auger
UTM Zone: 18
Easting: 445777.446
Northing: 5029608.864
Location Accuracy:
Orig. Ground Elevation(m):
Elev. Reliability Note:
DEM Ground Elevation(m): 71.800003
Total Depth(m): 7.300000
Primary Name: BH 04-4
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level: 5.500000
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218590621	0	0.100000	Asphalt
218590622	0.100000	0.300000	Concrete
218590623	0.300000	0.400000	Grey Crushed Stone With: Sa W Gr FILL
218590624	0.400000	1.100000	Brown to Grey Brown Sand Trace: Gr
218590625	1.100000	3	Grey-Brown Very Stiff Weathered Crust Silty Clay
218590626	3	7.300000	Grey Stiff Silty Clay

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-8			806903	Borehole	Geotechnical/Geological Investigation

Status:
Drill Method: Hollow stem auger
UTM Zone: 18
Easting: 445630.595
Northing: 5029857.069
Location Accuracy:
Orig. Ground Elevation(m):
Elev. Reliability Note:
DEM Ground Elevation(m): 70.400002
Total Depth(m): 7.300000
Primary Name: BH 04-6
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level: 5.700000
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218590638	0.200000	0.300000	Concrete
218590639	0.300000	0.500000	Grey Crushed Stone With: Sa W Gr FILL
218590640	0.500000	1.500000	Brown Compact Fill-Misc Sand With: Gr
218590641	1.500000	3.800000	Brown Loose to Very Loose Fill-Misc Sand With: Cl W Si
218590642	3.800000	4.400000	Grey-Brown Stiff Silty Clay
218590643	4.400000	7.300000	Grey Stiff Silty Clay
218590637	0	0.200000	Asphalt

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-9			613366	Borehole	

Status:
Drill Method:
UTM Zone: 18
Easting: 445781.000
Northing: 5029792.000
Location Accuracy:
Orig. Ground Elevation(m): 71
Elev. Reliability Note:
DEM Ground Elevation(m): 71.400002
Total Depth(m): -999.000000
Primary Name:
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level: 14.600000
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218394818	0	1.500000	FILL. COMPACT.
218394819	1.500000	3.700000	CLAY. BROWN,STIFF.
218394822	16.600000	22.700001	TILL. GREY,COMPACT, WATER STABLE AT 184.9 FEET.
218394823	22.700001		BEDROCK. BLACK. ,SILT. COMPACT. ROCK. 00000 008 00100 014 00115 010 00175
218394820	3.700000	12.300000	CLAY. GREY,STIFF.
218394821	12.300000	16.600000	CLAY. GREY,STIFF,LAYERED.

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-10			613363	Borehole	

Status:
Drill Method:
UTM Zone: 18
Easting: 445831.000
Northing: 5029782.000
Location Accuracy:
Orig. Ground Elevation(m): 71.199997
Elev. Reliability Note:
DEM Ground Elevation(m): 70.800003
Total Depth(m): -999.000000
Primary Name:
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level: 14.300000
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218394810	13.700000	17.100000	CLAY. GREY.
218394811	17.100000	18.700001	SAND,SILT. FIRM, WATER STABLE AT 186.5 FEET.
218394812	18.700001		SAND,SILT. COMPACT. ROCK. 00000 008 00100 014 00115 010 00175 008 00200 011
218394804	0	0.600000	FILL.
218394805	0.600000	1.200000	SAND.
218394806	1.200000	1.800000	CLAY. GREY,FIRM.
218394807	1.800000	3	CLAY. GREY,FIRM.
218394808	3	3.700000	CLAY. GREY,SOFT.
218394809	3.700000	13.700000	CLAY. GREY,SOFT.

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-11			613299	Borehole	

Status:
Drill Method:
UTM Zone: 18
Easting: 445711.000
Northing: 5029452.000
Location Accuracy:
Orig. Ground Elevation(m): 71.300003
Elev. Reliability Note:
DEM Ground Elevation(m): 72.099998
Total Depth(m): -999.000000
Primary Name:
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level: 10.300000
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218394565	0	1.500000	SAND.
218394566	1.500000	3.400000	CLAY. FIRM.
218394567	3.400000		CLAY. SOFT. SOFT. CLAY. GREY,FIRM. CLAY. GREY,FIRM. TILL. COMPACT. BEDROCK. FOSSILIFER

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-12			807043	Borehole	Geotechnical/Geological Investigation

Status:
Drill Method: Hollow stem auger
UTM Zone: 18
Easting: 445809.293
Northing: 5029513.784
Location Accuracy:
Orig. Ground Elevation(m): 71.800003
Elev. Reliability Note:
DEM Ground Elevation(m): 71.900002
Total Depth(m): 57.400002
Primary Name: BH 103
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level:
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218591286	21	34.400002	Bedrock BILLINGS FORMATION
218591287	34.400002	36.900002	Bedrock
218591288	36.900002	43	Bedrock LINDSAY FORMATION
218591289	43	51.900002	Bedrock
218591290	51.900002	57.400002	Bedrock
218591280	0	0.100000	Asphalt
218591281	0.100000	0.300000	Grey Silt - Sand With: Gr
218591282	0.300000	1.500000	Construction Debris With: Brk Frag old foundation (FILL)
218591283	1.500000	5.300000	Grey clay silt Trace: Sa
218591284	5.300000	15.700000	Grey Silty Clay
218591285	15.700000	21	Grey Till clay silt Trace: Sa Tr Gr Tr Cob

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-13			613373	Borehole	

Status:
Drill Method:
UTM Zone: 18
Easting: 445831.000
Northing: 5029822.000
Location Accuracy:
Orig. Ground Elevation(m): 70.500000
Elev. Reliability Note:
DEM Ground Elevation(m): 70.300003
Total Depth(m): -999.000000
Primary Name:
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level: 3.700000
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218394853	0	1.200000	FILL.
218394854	1.200000	4.300000	CLAY. BROWN,STIFF.
218394855	4.300000	15.900000	CLAY. GREY,STIFF, WATER STABLE AT 219.3 FEET.
218394856	15.900000	19.900000	CLAY. GREY,STIFF,LAYERED.
218394857	19.900000	23	TILL. GREY,FIRM.
218394858	23		BEDROCK. BLACK. 050 013 00075 013 00100 010 00000007000500160007501900100073 01

Borehole

Map Key	Company	Address	Borehole ID	Type	Use
BORE-14			807061	Borehole	Geotechnical/Geological Investigation

Status:
Drill Method: Hollow stem auger
UTM Zone: 18
Easting: 445655.558
Northing: 5029429.663
Location Accuracy:
Orig. Ground Elevation(m): 71.900002
Elev. Reliability Note:
DEM Ground Elevation(m): 71.900002
Total Depth(m): 56.700001
Primary Name: BH 105
Township:
Concession:
Lot:
Municipality
Completion Date:
Static Water Level:
Primary Water Use:
Secondary Water Use:
Location Description:

Geology Stratum ID	Top Depth(m)	Bottom Depth(m)	Stratum Desc
218591382	0.200000	0.700000	Black Topsoil Silt
218591383	0.700000	1.400000	Brown Compact Sand
218591384	1.400000	10.800000	Grey Stiff to Firm Silty Clay
218591385	10.800000	11.600000	Grey Compact Till sand silt With: Cob W Blds
218591386	11.600000	13.300000	Grey Stiff Till clay silt Trace: Sa Tr Cob Tr Blds trace shale
218591387	13.300000	15.500000	Dark Grey to Black Compact Shale and sandy silt
218591388	15.500000	31.100000	Black Shale BILLINGS FORMATION
218591389	31.100000	34.200001	Black Shale
218591390	34.200001	40.099998	Bedrock Shale LINDSAY FORMATION
218591391	40.099998	49.099998	Dark Grey to Grey Bedrock Limestone
218591392	49.099998	56.700001	Dark Grey Bedrock Limestone
218591379	0	0	Asphalt
218591380	0	0.200000	Base Sand - Gravel
218591381	0.200000	0.200000	Sand

Certificates of Approval

Map Key	Company	Address	Certificate #	Application Year	Issue Date	Approval Type	Status	Application Type
CA-1	OTTAWA CITY - SOMERSET ST.	O'CONNOR ST./NEPEAN ST. OTTAWA CITY	3-0495-92-	92	5/12/1992	Municipal sewage	Approved	
			Client Name:					
			Client Address:					
			Client City:					
			Client Postal Code:					
			Project Description:					
			Contaminants:					
			Emission Control:					
CA-2	Tartan Land Corporation	331 Cooper Street, Suite 400 Ottawa K2P 0G5	3476-4KFMVT	00	7/13/00	Municipal & Private water	Revoked and/or Replaced	New Certificate of Approval
			Client Name:	South Nepean Development Corporation				
			Client Address:	427 Laurier Ave. W., Unit 300				
			Client City:	Ottawa				
			Client Postal Code:					
			Project Description:	Watermains to be constructed in the City of Nepean				
			Contaminants:					
			Emission Control:					
CA-3	Tartan Land Corporation	331 Cooper Street, Suite 400 Ottawa K2P 0G5	7703-4KFM9J	00	5/19/00	Municipal & Private sewage	Approved	New Certificate of Approval
			Client Name:	South Nepean Development Corporation				
			Client Address:	427 Laurier Ave. W., Unit 300				
			Client City:	Ottawa				
			Client Postal Code:					
			Project Description:	Storm and Sanitary Sewers to be constructed in the City of Nepean.				
			Contaminants:					
			Emission Control:					
CA-4	Tartan Land Corporation	331 Cooper Street, Suite 400 Ottawa K2P 0G5	3735-4M5HET	00	7/13/00	Municipal & Private water	Approved	Amended CofA
			Client Name:	South Nepean Development Corporation				
			Client Address:	427 Laurier Ave. W., Unit 300				
			Client City:	Ottawa				
			Client Postal Code:	K1R 7Y2				
			Project Description:	Amend C/A to correct description of works				
			Contaminants:					
			Emission Control:					

Certificates of Approval

Map Key	Company	Address	Certificate #	Application Year	Issue Date	Approval Type	Status	Application Type
CA-5	The Manufacturers Life Insurance Company	220 Laurier Avenue Ottawa	4086-6HGQ7P	2005	10/25/2005	Air	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					
CA-6	NASSAR DIVERSIFIED LTD.	200 LAURIER AVENUE WEST OTTAWA CITY	8-4076-87-	87	1/8/1988	Industrial air	Cancelled	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**			RESTAURANT EXHAUST Odour/Fumes No Controls		
CA-7	The Cadillac Fairview Corporation Limited	191 Laurier Ave W Ottawa K1P 1E7	5865-7GSLW4	2008	8/8/2008	Air	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					
CA-8	The Cadillac Fairview Corporation Limited	191 Laurier Avenue West Ottawa K1P 1E7	5570-67XKUY	2005	4/21/2005	Air	Revoked and/or Replaced	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					

Certificates of Approval

Map Key	Company	Address	Certificate #	Application Year	Issue Date	Approval Type	Status	Application Type
CA-9	The Cadillac Fairview Corporation Limited	191 Laurier Avenue West Ottawa K1P 1E7	3982-6C4NWS	2005	5/9/2005	Air	Revoked and/or Replaced	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					
CA-10	Gillin Engineering and Construction Ltd.	123 Metcalfe Street Ottawa K1P 5L9	1393-6GULS7	2005	10/12/2005	Air	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					
CA-11	Besner-Vered (1980) Limited	245 Cooper St Ottawa	8520-7FHNZY	2008	6/20/2008	Air	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					
CA-12	Mel Cohen Realty Ltd.	177 Nepean Street Ottawa	4169-6X5R3J	2007	1/18/2007	Air	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					

Certificates of Approval

Map Key	Company	Address	Certificate #	Application Year	Issue Date	Approval Type	Status	Application Type
CA-13	METRONET COMMUNICATIONS CORP.	150 LAURIER AVENUE WEST OTTAWA K1P 5J4	8-4062-98-	98	//	Industrial air	In progress	
			Client Name:					
			Client Address:					
			Client City:					
			Client Postal Code:					
			Project Description:		350 KW EMERGENCY DIESEL GENERATOR			
			Contaminants:					
			Emission Control:					
n/a	OTTAWA CITY	NEPEAN STREET OTTAWA CITY	3-0887-87-	87	6/15/1987	Municipal sewage	Approved	
			Client Name:					
			Client Address:					
			Client City:					
			Client Postal Code:					
			Project Description:					
			Contaminants:					
			Emission Control:					
n/a	OTTAWA CITY	GLOUCESTER STREET OTTAWA CITY	3-0827-86-	86	7/2/1986	Municipal sewage	Approved	
			Client Name:					
			Client Address:					
			Client City:					
			Client Postal Code:					
			Project Description:					
			Contaminants:					
			Emission Control:					
n/a	OTTAWA CITY	COOPER ST. OTTAWA CITY	3-1897-88-	88	10/14/1988	Municipal sewage	Approved	
			Client Name:					
			Client Address:					
			Client City:					
			Client Postal Code:					
			Project Description:					
			Contaminants:					
			Emission Control:					

Certificates of Approval

Map Key	Company	Address	Certificate #	Application Year	Issue Date	Approval Type	Status	Application Type
n/a	R.M. OF OTTAWA-CARLETON	SOMERSET STREET OTTAWA CITY	7-0096-88-	88	2/10/1988	Municipal water	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					
n/a	R.M. OF OTTAWA-CARLETON	GLOUCESTER ST. OTTAWA CITY	7-0911-88-	88	7/7/1988	Municipal water	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					
n/a	CANLANDS DEVELOPMENT CORP.	METCALFE STREET OTTAWA CITY	7-0765-89-	89	5/12/1989	Municipal water	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					
n/a	OTTAWA CITY	GLOUCESTER ST./NEPEAN ST. OTTAWA CITY	3-0550-94-	94	5/27/1994	Municipal sewage	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					

Certificates of Approval

Map Key	Company	Address	Certificate #	Application Year	Issue Date	Approval Type	Status	Application Type
n/a	Nepean Street	Kent to Bank and Metcalfe to Elgin Ottawa	6059-5BPHX4	02	7/8/02	Municipal & Private sewage	Approved	New Certificate of Approval
			Client Name:	The Corporation of the City of Ottawa				
			Client Address:	110 Laurier Avenue West				
			Client City:	Ottawa				
			Client Postal Code:	K1P 1J1				
			Project Description:	This application is for the construction of combined storm and sanitary sewers on Nepean Street from Kent Street to Bank Street, and from Metcalfe Street to Elgin Street.				
			Contaminants:					
			Emission Control:					
n/a	Nepean Street	Kent to Bank and Metcalfe to Elgin Ottawa	9810-5BPJ33	02	7/8/02	Municipal & Private water	Approved	New Certificate of Approval
			Client Name:	The Corporation of the City of Ottawa				
			Client Address:	110 Laurier Avenue West				
			Client City:	Ottawa				
			Client Postal Code:	K1P 1J1				
			Project Description:	This application is for the construction of watermains on Nepean Street from Kent Street to Bank Street and from Metcalfe Street to Elgin Street.				
			Contaminants:					
			Emission Control:					
n/a	City of Ottawa	Lisgar Rd Ottawa	6147-7UPKWW	2009	8/17/2009	Municipal and Private Sewage Works	Approved	
			Client Name:					
			Client Address:					
			Client City:					
			Client Postal Code:					
			Project Description:					
			Contaminants:					
			Emission Control:					
n/a	City of Ottawa	Lisgar Rd Ottawa	7004-7SESBF	2009	5/29/2009	Municipal and Private Sewage Works	Approved	
			Client Name:					
			Client Address:					
			Client City:					
			Client Postal Code:					
			Project Description:					
			Contaminants:					
			Emission Control:					

Certificates of Approval

Map Key	Company	Address	Certificate #	Application Year	Issue Date	Approval Type	Status	Application Type
n/a	The Filmore Inc.	Nepean Street Ottawa	9532-62ULPC	2004	7/14/2004	Municipal and Private Sewage Works	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					
n/a	City of Ottawa	Somerset St W Ottawa	0195-8HMLH2	2011	6/15/2011	Municipal and Private Sewage Works	Approved	
			Client Name: **Client Address:** **Client City:** **Client Postal Code:** **Project Description:** **Contaminants:** **Emission Control:**					

Environmental Registry

Map Key	Company	Address	Year	EBR Registry No.	Ministry Ref. No.	Type
EBR-1	The Manufacturers Life Insurance Company	220 Laurier Avenue Ottawa	2005	IA05E1579	8567-6GVS3V	Instrument Decision
			Instrument Type:	Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9		
			Proposal Date:			
			Location:	220 Laurier Avenue Ottawa Ontario		
			Proponent Address:	55 Metcalfe Street Ottawa Ontario K1P 6L5		
EBR-2	The Cadillac Fairview Corporation Limited	191 Laurier Avenue West Ottawa K1P 1E7	2004	IA04E1622	7964-66SQBA	Instrument Decision
			Instrument Type:	Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9		
			Proposal Date:			
			Location:	191 Laurier Avenue West Ottawa Ontario K1P 1E7		
			Proponent Address:	20 Queen Street West, 5th Floor Toronto Ontario M5H 3R4		

ERIS Historical Searches

Map Key	Company	Address	Order No.	Report Date	Report Type	Search Radius (km)
EHS-1		100 Gloucester Street Ottawa K2P 0A4	20110404006	4/8/2011	Custom Report	0.25
			Addit. Info Ordered:			
EHS-2		110 Gloucester St Ottawa K2P 0A2	20040413014	4/22/04	Custom Report	0.25
			Addit. Info Ordered:			
EHS-3		189 Metcalfe Street Ottawa	20080118016	1/24/2008	Complete Report	0.25
			Addit. Info Ordered:			
EHS-4		189 Metcalfe Street OTTAWA	20060928008w	9/28/2006	Online Mapless	0.25
			Addit. Info Ordered:			
EHS-5		70 Gloucester Street Ottawa K2P 0A2	20071221012	1/2/2008	CAN - Custom Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps And /or Site Plans		
EHS-6		172 O'Connor Ottawa K2P 1T5	20080327001	4/4/2008	Complete Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps And /or Site Plans		
EHS-7		187 Metcalfe St Ottawa K2P 1P5	20100818005	8/26/2010	Standard Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps and/or Site Plans		
EHS-8		154 O'Connor Street Ottawa K2P 1T5	20090529016	6/9/2009	Standard Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps and/or Sire Plans		
EHS-9		220 Laurier Ave W Ottawa	20040202004	2/10/04	Custom Report	0.25
			Addit. Info Ordered:			
EHS-10		150 Metcalfe Street Ottawa K2P 1P1	20080211006	2/20/2008	Custom Report	0.25
			Addit. Info Ordered:			

ERIS Historical Searches

Map Key	Company	Address	Order No.	Report Date	Report Type	Search Radius (km)
EHS-11		150 Metcalfe Street Ottawa K2P 1P1	20060210019	2/14/2006	Complete Report	0.25
			Addit. Info Ordered:			
EHS-12		150 Metcalfe Street Ottawa K2P 1P1	20051107005	11/15/2005	Custom Report	0.25
			Addit. Info Ordered:			
EHS-13		320 Cooper Street Ottawa K2P 0G7	20070316023	3/27/2007	CAN - Complete Report	0.25
			Addit. Info Ordered:			
EHS-14		219 Laurier Avenue West Ottawa	20100405005	4/13/2010	Standard Report	0.25
			Addit. Info Ordered:			
EHS-15		219 Laurier Avenue West Ottawa	20080626001	7/8/2008	Custom Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps And /or Site Plans		
EHS-16		191 Laurier Avenue West Ottawa	20080506019	5/15/2008	Custom Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps And /or Site Plans		
EHS-17		153 Nepean Street Ottawa K2P 0B5	20090909031	9/10/2009	Custom Report	0.25
			Addit. Info Ordered:			
EHS-18		175 Lisgar Street Ottawa K2P 0C3	20100602005	6/7/2010	Standard Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps and/or Site Plans; City Directory		
EHS-19		309 Lisgar Avenue Ottawa	20110307024	3/9/2011	Standard Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps and/or Site Plans; City Directory		
EHS-20		182-184 Lisgar Street Ottawa K2P 0C4	20081215002	12/16/2008	Standard Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps and/or Site Plans		

ERIS Historical Searches

Map Key	Company	Address	Order No.	Report Date	Report Type	Search Radius (km)
EHS-21		300 Lisgar Street Ottawa K2P 0E2	20090807045	8/18/2009	Standard Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps and/or Sire Plans		
EHS-22		300 Lisgar St and 375 Cooper St Ottawa	20060914012	9/25/2006	Complete Report	0.25
			Addit. Info Ordered:			
EHS-23		250-254 Cooper St Ottawa K2P 0G4	20060929003	10/6/2006	Custom Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps And /or Site Plans		
EHS-24		124 O'Connor Street Ottawa K1P 5M9	20060418005	4/26/2006	Complete Report	0.25
			Addit. Info Ordered:	Fire Insur. Maps and/or Site Plans		
EHS-25		375 Cooper Street Ottawa K2P 0G8	20090506031	5/14/2009	Standard Report	0.25
			Addit. Info Ordered:			
EHS-26		West portion of Slater, Metcalfe, Laurier, O'Connor Ottawa	20020404009	4/12/02	Complete Report	0.25
			Addit. Info Ordered:			

Fuel Storage Tank

Map Key	Company	Address	License Issue Date	Tank Status	Tank Status As Of	Operation Type	Facility Type
FST-1	BYTOWN TOWING & AUTOCARE LTD	154 O'CONNOR ST AT GLOUCESTER OTTAWA K2P 1T5			June 2010	Retail Fuel Outlet	FS GASOLINE STATION - FULL SERVE

Status	Capacity (L)	Year of Installation	Corrosion Protection	Tank Fuel Type
Active	22700	1980	Fiberglass	Liquid Fuel Single Wall UST - Gasoline

Map Key	Company	Address	License Issue Date	Tank Status	Tank Status As Of	Operation Type	Facility Type
FST-2	BYTOWN TOWING & AUTOCARE LTD	154 O'CONNOR ST AT GLOUCESTER OTTAWA K2P 1T5	9/6/2002	Licensed	December 2008	Retail Fuel Outlet	Gasoline Station - Full Serve

Status	Capacity (L)	Year of Installation	Corrosion Protection	Tank Fuel Type
Active	22700	1979		Liquid Fuel Single Wall UST - Gasoline
Active	22700	1979		Liquid Fuel Single Wall UST - Gasoline
Active	22700	1979		Liquid Fuel Single Wall UST - Gasoline
Active	22700	1980		Liquid Fuel Single Wall UST - Gasoline

Map Key	Company	Address	License Issue Date	Tank Status	Tank Status As Of	Operation Type	Facility Type
FST-3	BYTOWN TOWING & AUTOCARE LTD	154 O'CONNOR ST AT GLOUCESTER OTTAWA K2P 1T5			January 2010	Retail Fuel Outlet	FS GASOLINE STATION - FULL SERVE

Status	Capacity (L)	Year of Installation	Corrosion Protection	Tank Fuel Type
Active	22700	1980	Fiberglass	Liquid Fuel Single Wall UST - Gasoline

Map Key	Company	Address	License Issue Date	Tank Status	Tank Status As Of	Operation Type	Facility Type
FST-4	BYTOWN TOWING & AUTOCARE LTD	154 O'CONNOR ST AT GLOUCESTER OTTAWA K2P 1T5			June 2011	Retail Fuel Outlet	FS GASOLINE STATION - FULL SERVE

Status	Capacity (L)	Year of Installation	Corrosion Protection	Tank Fuel Type
Active	22700	1980	Fiberglass	Liquid Fuel Single Wall UST - Gasoline
Active	22700	1980	Fiberglass	Liquid Fuel Single Wall UST - Gasoline
Active	22700	1980	Fiberglass	Liquid Fuel Single Wall UST - Gasoline

Fuel Storage Tank

Map Key	Company	Address	License Issue Date	Tank Status	Tank Status As Of	Operation Type	Facility Type
FST-5	BYTOWN TOWING & AUTOCARE LTD	154 O'CONNOR ST AT GLOUCESTER OTTAWA K2P 1T5	9/6/2002	Pending Renewal	August 2007	Retail Fuel Outlet	Gasoline Station - Full Serve

Status	Capacity (L)	Year of Installation	Corrosion Protection	Tank Fuel Type
Active	22700	1980		Liquid Fuel Single Wall UST - Gasoline
Active	22700	1980		Liquid Fuel Single Wall UST - Gasoline
Active	22700	1980		Liquid Fuel Single Wall UST - Gasoline

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-1	CYBERMEDIX HEALTH SERVICES LTD.	180 METCALFE ST., OTTAWA C/O 6 VANSCO RD. TORONTO K2P 1P5	8681	MEDICAL LABORATORIES	312	PATHOLOGICAL WASTES
			Generator #:	ON0064838		
			Approval Yrs:	86,87,88,89,90		
GEN-2	CYBERMEDIX (SEE & USE ON0245133) 11-261	180 METCALFE ST., OTTAWA C/O 6 VANSCO RD. TORONTO K2P 1P5	8681	MEDICAL LABORATORIES	312	PATHOLOGICAL WASTES
			Generator #:	ON0064838		
			Approval Yrs:	92,93,95,96,97		
GEN-3	CYBERMEDIX HEALTH SERVICES LTD. 11-261	180 METCALFE ST., OTTAWA C/O 6 VANSCO RD. TORONTO K2P 1P5	8681	MEDICAL LABORATORIES	312	PATHOLOGICAL WASTES
			Generator #:	ON0064838		
			Approval Yrs:	94		
GEN-4	CYBERMEDIX HEALTH (SEE & USE ON0245133)	180 METCALFE STREET OTTAWA K2P 1P5	8681	MEDICAL LABORATORIES	312	PATHOLOGICAL WASTES
			Generator #:	ON0064838		
			Approval Yrs:	98		
GEN-5	CANADIAN MEDICAL LABORATORIES LIMITED	180 METCALFE STREET, STE. 402 OTTAWA K2P 2E9	8681	MEDICAL LABORATORIES	312	PATHOLOGICAL WASTES
			Generator #:	ON0245133		
			Approval Yrs:	95,96,97,98,99,00,01		
GEN-6	DIAGNOSTIC IMAGING CONSULTANTS	205-180 METCALFE ST. C/O 301-11 ROSEMOUNT AVE. OTTAWA K2P 1P5	8682	RADIOLOGICAL LAB.	264	PHOTOPROCESSING WASTES
			Generator #:	ON1388800		
			Approval Yrs:	90		
GEN-7	DIAGNOSTIC IMAGING CONSULTANTS 12-543	205-180 METCALFE ST. C/O 301-11 ROSEMOUNT AVE. OTTAWA K2P 1P5	8682	RADIOLOGICAL LAB.	264	PHOTOPROCESSING WASTES
			Generator #:	ON1388800		
			Approval Yrs:	92,93,94,95,96,97,98		
GEN-8	CENTRA CARE HEALTH SERVICES 00-000	180 METCALFE SUITE 201 OTTAWA K2P 1P5	0000	*** NOT DEFINED ***		
			Generator #:	ON1525700		
			Approval Yrs:	92,93,94		

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-9	DEPARTMENT OF(OUT OF BUSINESS) 17-714	DENTAL CLINIC LAB. 100 GLOUCESTER STREET, SUITE 602 OTTAWA K2P 0A4	8689	OTHER HEALTH LAB.	114	OTHER INORGANIC ACID WASTES
			Generator #:	ON0046580	146	OTHER SPECIFIED INORGANICS
			Approval Yrs:	92,93,95,96,97	148	INORGANIC LABORATORY CHEMICALS
					211	AROMATIC SOLVENTS
					212	ALIPHATIC SOLVENTS
					262	DETERGENTS/SOAPS
					263	ORGANIC LABORATORY CHEMICALS
					264	PHOTOPROCESSING WASTES
					266	PHENOLIC WASTES
					312	PATHOLOGICAL WASTES
GEN-10	DEPT. OF NATIONAL DEFENCE(OUT OF BUS.)	DENTAL CLINIC LAB 100 GLOUCESTER STREET, SUITE 602 OTTAWA K2P 0A4	8689	OTHER HEALTH LAB.	114	OTHER INORGANIC ACID WASTES
			Generator #:	ON0046580	146	OTHER SPECIFIED INORGANICS
			Approval Yrs:	98	148	INORGANIC LABORATORY CHEMICALS
					211	AROMATIC SOLVENTS
					212	ALIPHATIC SOLVENTS
					262	DETERGENTS/SOAPS
					263	ORGANIC LABORATORY CHEMICALS
					264	PHOTOPROCESSING WASTES
					266	PHENOLIC WASTES
					312	PATHOLOGICAL WASTES

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-11	DEPARTMENT OF NATIONAL DEFENCE 17-714	DENTAL CLINIC LAB. 100 GLOUCESTER STREET, SUITE 602 OTTAWA K2P 0A4	8689	OTHER HEALTH LAB.	114	OTHER INORGANIC ACID WASTES
			Generator #:	ON0046580	146	OTHER SPECIFIED INORGANICS
			Approval Yrs:	94	148	INORGANIC LABORATORY CHEMICALS
					211	AROMATIC SOLVENTS
					212	ALIPHATIC SOLVENTS
					262	DETERGENTS/SOAPS
					263	ORGANIC LABORATORY CHEMICALS
					264	PHOTOPROCESSING WASTES
					266	PHENOLIC WASTES
					312	PATHOLOGICAL WASTES
GEN-12	Metcalfe St. Chiropractic and Wellness Centre	164 Metcalfe St. Ottawa K2P 1P2	621390	Offices of All Other Health Practitioners	264	PHOTOPROCESSING WASTES
			Generator #:	ON7731419		
			Approval Yrs:	06,07,08		
GEN-13	GVT. OF CAN. - NATIONAL DEFENCE	190 O'CONNOR STREET DIRECTORATE, SCIENTIFIC INFORMAT.SERVICE OTTAWA K1A 1G8	8111	DEFENCE SERVICES	264	PHOTOPROCESSING WASTES
			Generator #:	ON0046540		
			Approval Yrs:	92,93,97		
GEN-14	GVT. OF CAN. - NATIONAL DEFENCE	CRAD/DSIS-NATIONAL DEFENCE HEADQUARTERS 190 O'CONNOR ST. OTTAWA K1A 1G8	8111	DEFENCE SERVICES	264	PHOTOPROCESSING WASTES
			Generator #:	ON0046540		
			Approval Yrs:	86,87,88,89,90		
GEN-15	GVT. OF CAN. - NATIONAL DEFENCE 18-192	CRAD/DSIS-NATIONAL DEFENCE HEADQUARTERS 190 O'CONNOR ST. OTTAWA K1A 1G8	8111	DEFENCE SERVICES	264	PHOTOPROCESSING WASTES
			Generator #:	ON0046540		
			Approval Yrs:	94,95,96		
GEN-16	DEPT. OF NATIONAL DEFENCE	DEFENCE RESEARCH DEVELOPMENT BRANCH 190 O'CONNOR STREET OTTAWA K1A 0K2	8111	DEFENCE SERVICES	145	PAINT/PIGMENT/COATING RESIDUES
			Generator #:	ON0046540	213	PETROLEUM DISTILLATES
			Approval Yrs:	98,99,00,01,04	264	PHOTOPROCESSING WASTES

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-17	Shell Canada Products	154 OÂ¿Connor Street Ottawa K2P 1T5			221	Light fuels
			Generator #:	ON7522524	251	Waste oils/sludges (petroleum based)
			Approval Yrs:	As of Oct 2010	252	Waste crankcase oils and lubricants
GEN-18	MANULIFE FINANCIAL	220 LAURIER AVENUE WEST OTTAWA K1P 5Z9			112	Acid solutions - containing heavy metals
			Generator #:	ON4777286		
			Approval Yrs:	As of Oct 2010		
GEN-19	LITHWICK CORPORATION	150 METCALFE STREET OTTAWA K2P 1P1				
			Generator #:	ON7459647		
			Approval Yrs:	03,04		
GEN-20	Metcalfe St. Chiropractic and Wellness Centre	150 METCALFE STREET, SUITE 2200 X-RAY ROOM OTTAWA K2P 1P1	621310	Offices of Chiropractors	264	PHOTOPROCESSING WASTES
			Generator #:	ON2452100		
			Approval Yrs:	05,06		
GEN-21	CHIROPRACTIC HEALTH GROUP	150 METCALFE STREET, SUITE 2200 X-RAY ROOM OTTAWA K2P 1P1	8661	CHIRO./OSTEOPATHS	264	PHOTOPROCESSING WASTES
			Generator #:	ON2452100		
			Approval Yrs:	99,00,01,02,03,04		
GEN-22	NATIONAL DEFENCE	234 LAURIER AVENUE WEST 19TH FLOOR, ROOM 1904 OTTAWA K1A 0K2	8111	DEFENCE SERVICES	264	PHOTOPROCESSING WASTES
			Generator #:	ON0046587		
			Approval Yrs:	93,94,95,96,97		
GEN-23	DEPT. OF NATIONAL DEFENCE	234 LAURIER AVENUE WEST 19TH FLOOR, ROOM 1904 OTTAWA K1A 0K2	8111	DEFENCE SERVICES	264	PHOTOPROCESSING WASTES
			Generator #:	ON0046587		
			Approval Yrs:	98,99,00,01		

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-24	OTTAWA CHEMISTS	192 LAURIER AVENUE WEST OTTAWA K1P 5J8	3741	PHARM./MEDICAL IND.	112	ACID WASTE - HEAVY METALS
			Generator #:	ON1489900	113	ACID WASTE - OTHER METALS
			Approval Yrs:	99,00,01	114	OTHER INORGANIC ACID WASTES
					121	ALKALINE WASTES - HEAVY METALS
					122	ALKALINE WASTES - OTHER METALS
					123	ALKALINE PHOSPHATES
					148	INORGANIC LABORATORY CHEMICALS
					211	AROMATIC SOLVENTS
					212	ALIPHATIC SOLVENTS
					213	PETROLEUM DISTILLATES
					241	HALOGENATED SOLVENTS
					261	PHARMACEUTICALS
					263	ORGANIC LABORATORY CHEMICALS
					267	ORGANIC ACIDS

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-25	OTTAWA CHEMISTS 29-553	192 LAURIER AVENUE WEST OTTAWA K1P 5J8	3741	PHARM./MEDICAL IND.	263	ORGANIC LABORATORY CHEMICALS
			Generator #:	ON1489900	267	ORGANIC ACIDS
			Approval Yrs:	92,93,94,95,96,97,98	112	ACID WASTE - HEAVY METALS
					113	ACID WASTE - OTHER METALS
					114	OTHER INORGANIC ACID WASTES
					121	ALKALINE WASTES - HEAVY METALS
					122	ALKALINE WASTES - OTHER METALS
					123	ALKALINE PHOSPHATES
					148	INORGANIC LABORATORY CHEMICALS
					211	AROMATIC SOLVENTS
					212	ALIPHATIC SOLVENTS
					213	PETROLEUM DISTILLATES
					241	HALOGENATED SOLVENTS
					261	PHARMACEUTICALS
GEN-26	DEPT. OF FINANCE/TREASURY BOARD OF CANADA	140 O'CONNOR STREET FACILITIES MANAGEMENT OTTAWA K1A 0G5			121	ALKALINE WASTES - HEAVY METALS
			Generator #:	ON0269301	121	ALKALINE WASTES - HEAVY METALS
			Approval Yrs:	02,03,04,06,07,08	122	ALKALINE WASTES - OTHER METALS
					148	INORGANIC LABORATORY CHEMICALS
					264	PHOTOPROCESSING WASTES
					146	OTHER SPECIFIED INORGANICS
GEN-27	GVT. OF CAN. - FINANCE CANADA 18-149	PROPERTY & MATERIAL MANAGEMENT 140 O'CONNOR STREET OTTAWA K1A 0G5	8152	FINAC./ECONOM. ADM.	264	PHOTOPROCESSING WASTES
			Generator #:	ON0269301		
			Approval Yrs:	94,95		

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-28	FINANCE AND TREASURY BOARD OF CAN. DEPT.	140 O'CONNOR STREET PROPERTY & MATERIAL MANAGEMENT OTTAWA K1A 0G5	8152	FINAC./ECONOM. ADM.	148	INORGANIC LABORATORY CHEMICALS
			Generator #:	ON0269301	264	PHOTOPROCESSING WASTES
			Approval Yrs:	92,93,96,97,98,99,00,01		
GEN-29	DEPT. OF FINANCE/TREASURY BOARD OF CANADA	140 O'CONNOR STREET FACILITIES MANAGEMENT OTTAWA K2P 2H6			121	Alkaline slutions - containing heavy metals
			Generator #:	ON0269301	146	Other specified inorganic sludges, slurries or solids
			Approval Yrs:	As of Jan 2010		
GEN-30	GVT. OF CAN. - FINANCE CANADA	PROPERTY & MATERIAL MANAGEMENT 140 O'CONNOR STREET OTTAWA K1A 0G5	8152	FINAC./ECONOM. ADM.	264	PHOTOPROCESSING WASTES
			Generator #:	ON0269301		
			Approval Yrs:	86,87,88,89,90		
GEN-31	GLENVIEW CORPORATION	219 LAURIER AVE W OTTAWA			251	OIL SKIMMINGS & SLUDGES
			Generator #:	ON9097452		
			Approval Yrs:	06		
GEN-32	Glenview Corporation	219 Laurier Ave Ottawa				
			Generator #:	ON2324346		
			Approval Yrs:	03,04		
GEN-33	PHOTOGO-BLACKBURN HAMLET	225 LAURIER OTTAWA K1P 5J6	2821	PLATEMAKING, ETC.	264	PHOTOPROCESSING WASTES
			Generator #:	ON1484701		
			Approval Yrs:	94,95,96,97,98,99,00,01		
GEN-34	CADILLAC FAIRVIEW CORPORATION	191 LAURIER AVENUE WEST P1 LEVEL OTTAWA K1P 1E7			243	PCB'S
			Generator #:	ON8230179	145	PAINT/PIGMENT/COATING RESIDUES
			Approval Yrs:	02,03,04,05	212	ALIPHATIC SOLVENTS
GEN-35	LAURIER DRY CLEANERS	227 LAURIER AVE. WEST OTTAWA K1P 5J6	9721	POWER LAUND./CLEANERS	241	HALOGENATED SOLVENTS
			Generator #:	ON2125100		
			Approval Yrs:	96,97,98		

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-36	SPIC & SPAN-VALETOR-CASH CLEANERS	227 LAURIER AVENUE WEST OTTAWA K1P 5J6	9721	POWER LAUND./CLEANER	241	HALOGENATED SOLVENTS
			Generator #:	ON0573421		
			Approval Yrs:	92,93,97,98,99,00,01		
GEN-37	SPIC & SPAN-VALETOR-CASH CLEANERS	227 LAURIER AVE. WEST OTTAWA K1P 5J6	9721	POWER LAUND./CLEANER	241	HALOGENATED SOLVENTS
			Generator #:	ON0573421		
			Approval Yrs:	88,89,90		
GEN-38	SPIC & SPAN-VALETOR-CASH CLEANERS 35-323	227 LAURIER AVE. WEST OTTAWA K1P 5J6	9721	POWER LAUND./CLEANER	241	HALOGENATED SOLVENTS
			Generator #:	ON0573421		
			Approval Yrs:	94,95,96		
GEN-39	LAURIER DRY CLEANERS	227 LAURIER AVENUE WEST OTTAWA K1P 5J6	9721	POWER LAUND./CLEANERS	241	HALOGENATED SOLVENTS
			Generator #:	ON2125100		
			Approval Yrs:	99,00,01		
GEN-40	TAGGART CORPORATION	708-225 Metcalfe Street OTTAWA K2P 1P9	531310	Real Estate Property Managers	243	PCB'S
			Generator #:	ON2565000		
			Approval Yrs:	07,08		
GEN-41	ARTEXT (OUT OF BUS)	225 METCALFE STREET, SUITE 710 OTTAWA K2P 1P9	2821	PLATEMAKING, ETC.	264	PHOTOPROCESSING WASTES
			Generator #:	ON0940702		
			Approval Yrs:	93,96,97,98		
GEN-42	ARTEXT ELECTRONIC PUBLISHING INC.	225 METCALFE STREET, SUITE 710 OTTAWA K2P 1P9	2821	PLATEMAKING, ETC.	264	PHOTOPROCESSING WASTES
			Generator #:	ON0940702		
			Approval Yrs:	94,95		
GEN-43	Canus Plastics Inc.	300 Lisgar St. Ottawa K2P 0E2			221	Light fuels
			Generator #:	ON3474706		
			Approval Yrs:	As of Jan 2010		

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-44	OTTAWA PUBLIC LIBRARY 29-245	120 METCALFE STREET OTTAWA K1P 5M2	0000	*** NOT DEFINED ***		
			Generator #:	ON0842600		
			Approval Yrs:	92,93,94		
GEN-45	OTTAWA PUBLIC LIBRARY	120 METCALFE STREET OTTAWA K1P 5M2	0000	*** NOT DEFINED ***		
			Generator #:	ON0842600		
			Approval Yrs:	86,87,88,89,90		
GEN-46	HUNT CLUB PRESS LTD (OUT OF BUSINESS)	263 LAURIER AVE. W. OTTAWA K1P 5J9	2819	OTHER COMM. PRINTING	264	PHOTOPROCESSING WASTES
			Generator #:	ON1642400		
			Approval Yrs:	92,93,96,97,98		
GEN-47	HUNT CLUB PRESS LTD. 19-736	263 LAURIER AVE. W. OTTAWA K1P 5J9	2819	OTHER COMM. PRINTING	264	PHOTOPROCESSING WASTES
			Generator #:	ON1642400		
			Approval Yrs:	94,95		
GEN-48	QUADRAPRESS INC.	263 LAURIER AVENUE WEST OTTAWA K1P 5J9	7796	DUPLICATING SERV.	264	PHOTOPROCESSING WASTES
			Generator #:	ON1937100		
			Approval Yrs:	94,95,96,97,98		
GEN-49	ARTEXT ELECTRONIC PUBLISHING INC.	124 O'CONNOR ST., SUITE 200 OTTAWA K1P 5M9	2821	PLATEMAKING, ETC.	264	PHOTOPROCESSING WASTES
			Generator #:	ON0940700		
			Approval Yrs:	86,87,88		
GEN-50	ARTEXT ELECTRONIC PUBLISHING INC.	124 O'CONNOR ST. SUITE 200 OTTAWA K1P 5M9	2821	PLATEMAKING, ETC.	264	PHOTOPROCESSING WASTES
			Generator #:	ON0940701		
			Approval Yrs:	89,90		
GEN-51	ARTEXT ELE(OUT OF BUSINESS)G INC. 03-388	124 O'CONNOR ST. SUITE 200 OTTAWA K1P 5M9	2821	PLATEMAKING, ETC.	264	PHOTOPROCESSING WASTES
			Generator #:	ON0940701		
			Approval Yrs:	92,93,94,95,96,97,98		
GEN-52	ARTEXT ELECTRONIC (OUT OF BUS.) 03-293	124 O'CONNOR ST., SUITE 200 OTTAWA K1P 5M9	2821	PLATEMAKING, ETC.		
			Generator #:	ON0940700		
			Approval Yrs:	92,93,94,95,96,97,98		

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-53	ARTEXT ELECTRONIC--OUT OF BUSINESS	124 O'CONNOR ST., SUITE 200 OTTAWA K1P 5M9	2821	PLATEMAKING, ETC. **Generator #:** ON0940700 **Approval Yrs:** 89,90	264	PHOTOPROCESSING WASTES
GEN-54	E.A.S. (OUT OF BUS) 14-740	171 NEPEAN ST. OTTAWA K2P 0B4	2811	BUSINESS FORMS PRINT. **Generator #:** ON1203100 **Approval Yrs:** 97,98	213	PETROLEUM DISTILLATES
GEN-55	E.A.S. ILLUSTRATORS & PRINTERS LTD	171 NEPEAN ST. OTTAWA K2P 0B4	2811	BUSINESS FORMS PRINT **Generator #:** ON1203100 **Approval Yrs:** 89	213	PETROLEUM DISTILLATES
GEN-56	E.A.S. ILLUSTRATORS & PRINTERS LTD14-740	171 NEPEAN ST. OTTAWA K2P 0B4	2811	BUSINESS FORMS PRINT **Generator #:** ON1203100 **Approval Yrs:** 92,93,94,95,96	213	PETROLEUM DISTILLATES
GEN-57	ARMCO PRINT 02-638	171 NEPEAN STREET OTTAWA K2P 0B4	2819	OTHER COMM. PRINTING **Generator #:** ON1550000 **Approval Yrs:** 92,93,96,97,98	264	PHOTOPROCESSING WASTES
GEN-58	ARMCO PRINT 02-638	171 NEPEAN STREET OTTAWA K2P 0B4	2819	OTHER COMM. PRINTING **Generator #:** ON1550000 **Approval Yrs:** 94,95	264	PHOTOPROCESSING WASTES
GEN-59	NATIONAL CAPITAL COMMISSION 28-409	(SEE & USE ON0128803) 161 LAURIER AVE. WEST OTTAWA K1P 6J6	8159	OTHER GEN. ADMIN. **Generator #:** ON0919000 **Approval Yrs:** 92,93,94,95,96,97,98	264	PHOTOPROCESSING WASTES
GEN-60	BIG PICTURE PHOTOFINISHING	161 LAURIER AVENUE WEST OTTAWA K1P 5J2	6571	CAMERA/PHOTO. SUPPLY **Generator #:** ON1822200 **Approval Yrs:** 93,94,95,96,97,98,99,00,01	264	PHOTOPROCESSING WASTES

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-61	NATIONAL CAPITAL COMMISSION	(SEE & USE ON0128803) 161 LAURIER AVE. WEST OTTAWA K1P 6J6	8159	OTHER GEN. ADMIN.	264	PHOTOPROCESSING WASTES
			Generator #:	ON0919000		
			Approval Yrs:	88,89,90		
GEN-62	NATIONAL CAPITAL (OUT OF BUSINESS)	NCC PHOTOGRAPHIC UNIT 161 LAURIER AVENUE WEST OTTAWA K1P 6J6	8159	OTHER GEN. ADMIN.	264	PHOTOPROCESSING WASTES
			Generator #:	ON0128803		
			Approval Yrs:	98		
GEN-63	Dept. of National Defence	Vered Building 245 Cooper Steet Ottawa K2P 0G2			148	INORGANIC LABORATORY CHEMICALS
			Generator #:	ON8437503	253	EMULSIFIED OILS
			Approval Yrs:	02,03,04	264	PHOTOPROCESSING WASTES
GEN-64	District Realty Corporation	177 Nepean Street Ottawa K2P 0B4	531310	Real Estate Property Managers	243	PCB'S
			Generator #:	ON3439760		
			Approval Yrs:	05		
GEN-65	ARNON DEVELOPMENT CORPORATION LIMITED	180 ELGIN STREET OTTAWA K2P 2K3			212	ALIPHATIC SOLVENTS
			Generator #:	ON9098579		
			Approval Yrs:	02,03,04,05		
GEN-66	Public Works and Government Services Canada Environmental Services	300 Laurier Ave Ottawa K0A0S5			112	Acid solutions - containing heavy metals
			Generator #:	ON5652014	145	Wastes from the use of pigments, coatings and paints
			Approval Yrs:	As of Oct 2010	146	Other specified inorganic sludges, slurries or solids
					212	Aliphatic solvents and residues
					221	Light fuels
					243	PCB
					252	Waste crankcase oils and lubricants
					312	Pathological wastes
					331	Waste compressed gases including cylinders

Ontario Regulation 347 Waste Generators Summary

Map Key	Company	Address	SIC Code	SIC Description	Waste Code	Waste Description
GEN-67	GVT OF CAN-HEALTH&WELFARE CAN.MED.16-304	SER.BR,UNIT#28,10TH FL. W. TOWER 300 LAURIER AVE. WEST,C/O 301 ELGIN ST OTTAWA K1A 0L3	8635 **Generator #:** ON0095618 **Approval Yrs:** 94,95,96	PUB. HEALTH CLINICS	312	PATHOLOGICAL WASTES
GEN-68	HEALTH AND WELFARE CANADA	300 LAURIER AVE. WEST (T.B.C) HEALTH UNIT #28, 10TH FLOOR WEST TOWER OTTAWA K1A 0R5	8635 **Generator #:** ON0095618 **Approval Yrs:** 98,99,00,01	PUB. HEALTH CLINICS	312	PATHOLOGICAL WASTES
GEN-69	GVT. OF CAN.-SUPPLY AND SERVICES	OLYMPIA PRINTING PLANT,LEVEL P1,W.TOWER L'ESPLANADE LAURIER,300 LAURIER AVE. W OTTAWA K1A 0M7	2849 **Generator #:** ON0249609 **Approval Yrs:** 86,87,88,89,90	OTHER PRINTING IND.	264	PHOTOPROCESSING WASTES
GEN-70	GVT. OF CAN.(OUT OF BUS) 18-208	OLYMPIA PRINTING PLANT,LEVEL P1,W.TOWER L'ESPLANADE LAURIER,300 LAURIER AVE. W OTTAWA K1A 0M7	2849 **Generator #:** ON0249609 **Approval Yrs:** 92,93,94,95,96,97	OTHER PRINTING IND.	213 264	PETROLEUM DISTILLATES PHOTOPROCESSING WASTES
GEN-71	GVT. OF CAN.(OUT OF BUSINESS)	OLYMPIA PRINTING PLANT,LEVEL P1,W.TOWER L'ESPLANADE LAURIER,300 LAURIER AVE. W OTTAWA K1A 0M7	2849 **Generator #:** ON0249609 **Approval Yrs:** 98	OTHER PRINTING IND.	213 264	PETROLEUM DISTILLATES PHOTOPROCESSING WASTES
GEN-72	HEALTH AND WELFARE CANADA	HEALTH UNIT#28, 10TH FL., WEST TOWER 300 LAURIER AVE. WEST (TBC) OTTAWA K1A 0R5	8635 **Generator #:** ON0095618 **Approval Yrs:** 92,93,97	PUB. HEALTH CLINICS	312	PATHOLOGICAL WASTES

Mineral Occurrences

Map Key	Company	Address	Easting	Northing	Zone	MDI No	Deposit Status
MNR-1	DH OT-2		445757.326	5029863.031	18	MDI31G05NE00069	DISCRETIONARY OCCURRENCE

Mining Division:
Geological District: SOUTHEASTERN ONTARIO
Claim Map: N/A
Access Description: N/A

Year	Name	Twp/Area	Con/Lot/Sec	Commodity	Deposit Characteristic
1993	DH OT-2	NEPEAN	LOT: NA CON: NA	LIMESTONE (BUILDING STONES)	

National PCB Inventory

Map Key	Company	Address	Company Code	Transaction Date	Inspection Date	Industry	Site Status
NPCB-1	TAGGART CORPORATION	225 METCALFE STREET SUITE 708 OTTAWA K2P 1P9	F1361	12/30/1995		Undefined	Stored for Disposal

Label	No. of Items	Contents	Serial No.	Item/State	Status	PCB Type/Code	Location	Manufacturer
					Stored for disposal	Askarel/Askarel		

Map Key	Company	Address	Company Code	Transaction Date	Inspection Date	Industry	Site Status
NPCB-2	NATIONAL CAPITAL COMMISSION	161 LAURIER AVE. WEST; GREENBELT, 80 BAYVIEW OTTAWA K1P 6J6	O3200	11/30/1993	7/10/1992	Other Federally Regulated Business	

Label	No. of Items	Contents	Serial No.	Item/State	Status	PCB Type/Code	Location	Manufacturer

Inventory of PCB Storage Sites

Map Key	Company	Address	Year	Site Number	Quantity	Description
OPCB-1	TAGGART CORPORATION	225 METCALFE STREET, SUITE 708 OTTAWA K2P 1P9	2004	40294A012	1 800	Number of Drums of Ballasts with High Level PCBs (>1000 ppm) Weight of Drums of Ballasts with High Level PCBs (>1000 ppm) kg
OPCB-2	TAGGART CORPORATION	225 METCALFE STREET, SUITE 708 OTTAWA K2P 1P9	2003	40294A012	1.00 800.00	Number of Drums of Ballasts with High Level PCBs (>1000 ppm) Weight of Drums of Ballasts with High Level PCBs (>1000 ppm) kg

Private and Retail Fuel Storage Tanks

Map Key	Company	Address	Location ID	Type	Expiry Date	Capacity (L)	Licence #
PRT-1	BYTOWN TOWING & AUTOCARE LTD	154 O CONNOR ST AT GLOUCESTER OTTAWA	11026	retail	1995-09-30	68100	0026886001

Record of Site Condition

Map Key	Company	Address	Date Submitted	Date Acknowledg.	Date Returned	Soil Type	Restoration Type
RSC-1	Soho Lisgar Inc.	300 Lisgar Street, Ottawa, Ontario, K2P 1T6 K2P 1T6	6/23/2011				

Registration #: 113750
Stratified (Y/N):
Criteria:
Consultant:
District Office: OTTAWA

Scott's Manufacturing Directory

Map Key	Company	Address	Established	Plant Size (ft²)	Employment	SIC/NAICS Code	Description
SCT-1	Itplanit Services Corp.	180 Metcalfe St Suite 503 Ottawa K2P 1P5				541690 611690 511210 611410	Other Scientific and Technical Consulting Services All Other Schools and Instruction Software Publishers Business and Secretarial Schools
SCT-2	Canadian Council on Social	190 O'Connor St Suite 100 Ottawa K2P 2R3	1920		13	511120 813310 813410 813910	Periodical Publishers Social Advocacy Organizations Civic and Social Organizations Business Associations
SCT-3	The Ottawa XPress	309 Cooper St Suite 401 Ottawa K2P 0G5	01-AUG-92			511110	Newspaper Publishers
SCT-4	DOMUS SOFTWARE LTD	309 COOPER ST UNIT 500 OTTAWA K2P 0G5	1983	7000	100	3695	MAGNETIC AND OPTICAL RECORDING MEDIA
SCT-5	Cdn Council on Social Dev	309 Cooper St Floor 5 Ottawa K2P 0G5	1920		25	511120 813910	Periodical Publishers Business Associations
SCT-6	The Canadian Council on Social Development	309 Cooper St Floor 5 Ottawa K2P 0G5				511130	Book Publishers
SCT-7	KOFFMAN SIGNS	146 NEPEAN ST OTTAWA K2P 0B6	1956	0	8	339950	Sign Manufacturing
SCT-8	Koffman Signs Ltd.	146 Nepean St Ottawa K2P 0B6	1956	2000		339950	Sign Manufacturing

Scott's Manufacturing Directory

Map Key	Company	Address	Established	Plant Size (ft²)	Employment	SIC/NAICS Code	Description
SCT-9	Print Three Inc	220 Laurier Ave W Ottawa K1P 5Z9	1986	2000	4	323114	Quick Printing
						323115	Digital Printing
						323119	Other Printing
						323120	Support Activities for Printing
						561410	Document Preparation Services
SCT-10	LE PRINT SUPER EXPRESS	220 LAURIER AVE W OTTAWA K1P 5Z9	1986	2000	6	2741	MISCELLANEOUS PUBLISHING
						2752	COMMERCIAL PRINTING, LITHOGRAPHIC
						323114	Quick Printing
						323115	Digital Printing
						323119	Other Printing
SCT-11	Canadian Bureau for International Education	220 Laurier Ave W Suite 1100 Ottawa K1P 5Z9				511130	Book Publishers
SCT-12	LINKTEK CORPORATION	220 LAURIER AVE W OTTAWA K1P 5Z9	1985	0	30	3695	MAGNETIC & OPTICAL RECORDING MEDIA
SCT-13	Print Three	220 Laurier Ave W Ottawa K1P 5Z9	01-JAN-86	2000		323113	Commercial Screen Printing
						323115	Digital Printing
						323116	Manifold Business Forms Printing
						323119	Other Printing
						561410	Document Preparation Services
						323120	Support Activities for Printing
						323115	Digital Printing
SCT-14	CBIE - Cdn Bur for Intl Educ	220 Laurier Ave W Suite 1550 Ottawa K1P 5Z9	01-DEC-60			813920	Professional Organizations

Scott's Manufacturing Directory

Map Key	Company	Address	Established	Plant Size (ft²)	Employment	SIC/NAICS Code	Description
SCT-15	HICKS MEDIA	300 Cooper St Suite 30 Ottawa K2P 0G7	1985	0	5	511190	Other Publishers
SCT-16	Hicks Media - Div. of Gidney News & Publishing Limited	300 Cooper St Suite 30 Ottawa K2P 0G7	1985		5		
SCT-17	ATCO Structures & Logistics	170 Laurier Ave W Suite 100 Ottawa K1P 5V5	01-AUG-87			326150 541510 326290 561210	Urethane and Other Foam Product (except Polystyrene) Manufacturing Computer Systems Design and Related Services Other Rubber Product Manufacturing Facilities Support Services
SCT-18	Fisheries Council of Canada	170 Laurier Ave W Suite 900 Ottawa K1P 5V5	01-DEC-45	900		813910	Business Associations
SCT-19	Inuit Today Newsletter	170 Laurier Ave W Suite 510 Ottawa K1P 5V5	1971		46	511120	Periodical Publishers
SCT-20	F K Dental Lab Ltd	225 Metcalfe St Suite 500 Ottawa K2P 1P9				339110	Medical Equipment and Supplies Manufacturing
SCT-21	Chromatek Dental Laboratories	225 Metcalfe St Suite 500 Ottawa K2P 1P9	01-AUG-79			339110 339110	Medical Equipment and Supplies Manufacturing Medical Equipment and Supplies Manufacturing
SCT-22	INFOTEK DOCUMENT CENTRE INC.	119 O'CONNOR ST OTTAWA K1P 5M8	1997	0	1	323114 323115 323119	Quick Printing Digital Printing Other Printing

Scott's Manufacturing Directory

Map Key	Company	Address	Established	Plant Size (ft²)	Employment	SIC/NAICS Code	Description
SCT-23	Canus Plastics Inc.	300 Lisgar St Ottawa K2P 0E2	8/1/1949	22000		326114	Plastic Film and Sheet Manufacturing
						418410	Chemical (except Agricultural) and Allied Product Wholesaler-Distributors
						418220	Other Paper and Disposable Plastic Product Wholesaler-Distributors
						337215	Showcase, Partition, Shelving and Locker Manufacturing
						332999	All Other Miscellaneous Fabricated Metal Product Manufacturing
						417230	Industrial Machinery, Equipment and Supplies Wholesaler-Distributors
						417910	Office and Store Machinery and Equipment Wholesaler-Distributors
						416120	Plumbing, Heating and Air-Conditioning Equipment and Supplies Wholesaler-Distributors
						326121	Unlaminated Plastic Profile Shape Manufacturing
						339950	Sign Manufacturing
						326198	All Other Plastic Product Manufacturing
						416390	Other Specialty-Line Building Supplies Wholesaler-Distributors
SCT-24	Canus Signs Plastics Ltd.	300 Lisgar St Ottawa K2P 0E2	1955		25	326198	All Other Plastic Product Manufacturing
						339950	Sign Manufacturing
						326160	Plastic Bottle Manufacturing
SCT-25	FOX PRINT & COPY LTD.	124 O'CONNOR ST OTTAWA K1P 5M9	1985	1780	7	323114	Quick Printing
						323115	Digital Printing
						323119	Other Printing
SCT-26	QUADRAPRINT (1996)	124 O'CONNOR ST OTTAWA K1P 5M9	1985	1780	7	2752	COMMERCIAL PRINTING, LITHOGRAPHIC

Scott's Manufacturing Directory

Map Key	Company	Address	Established	Plant Size (ft²)	Employment	SIC/NAICS Code	Description
SCT-27	Delta Reprographic Inc.	111 O'Connor St Ottawa K1P 5M8				323115 323119	Digital Printing Other Printing
SCT-28	Canadian Bible Society	315 Lisgar St Ottawa K2P 0E1	01-DEC-05	3000		813920	Professional Organizations
SCT-29	CAPITAL XTRA INC.	177 NEPEAN ST SUITE 500 OTTAWA K2P 0B4	1994	1800	7	511110	Newspaper Publishers
SCT-30	Summit: The Business Of Public	180 Elgin St Suite 800 Ottawa K2P 2K3	1998		6	511120	Periodical Publishers
SCT-31	The Canadian Academy of Eng	180 Elgin St Suite 1402 Ottawa K2P 2K3	01-DEC-87			813910	Business Associations

Ontario Spills

Map Key	Company	Address	Ref No.	Incident Dt	MOE Reported Dt	Contaminant Name	Contaminant Quantity
SPL-1	MOTOR VEHICLE	250 LISGAR STR. MOTOR VEHICLE (OPERATING FLUID) OTTAWA CITY K2P 0C8	53206	6/28/1991	6/28/1991		
			Incident Summary:	RESIDENT: 20L GASOLINE SPILL FROM CAR. TANK RUPTURED			
			Incident Cause:	OTHER CONTAINER LEAK			
			Incident Reason:	CORROSION			
			Nature of Impact:				
			Receiving Medium:	LAND / WATER			
			Environmental Impact:	NOT ANTICIPATED			
SPL-2	SHELL CANADA PRODUCTS LTD.	154 O'CONNOR ST. SHELL CANADA GAS STATION SERVICE STATION OTTAWA CITY K2P 1T5	93739	//	11/23/1993		
			Incident Summary:	SHELL CANADA -1800L FURNACE OIL MISSING FROM UNDERGROUND STORAGE TANK.			
			Incident Cause:	UNDERGROUND TANK LEAK			
			Incident Reason:	CORROSION			
			Nature of Impact:	Soil contamination			
			Receiving Medium:	LAND			
			Environmental Impact:	CONFIRMED			
SPL-3	SHELL CANADA PRODUCTS LTD.	154 O'CONNER STREET SERVICE STATION OTTAWA CITY	105417	9/20/1994	9/20/1994		
			Incident Summary:	SHELL-UKN QTY WASTE OIL TO GROUND,UG TANK FAILED PRESSURE TEST.			
			Incident Cause:	UNDERGROUND TANK LEAK			
			Incident Reason:	UNKNOWN			
			Nature of Impact:	Soil contamination			
			Receiving Medium:	LAND			
			Environmental Impact:	POSSIBLE			
SPL-4	OTTAWA HYDRO	375 COOPER STREET TRANSFORMER OTTAWA CITY K2P 0G8	117139	8/13/1995	8/13/1995		
			Incident Summary:	OTTAWA HYDRO-15 LITERS TRANSFORMER OIL TO GRND, PCB TEST PENDING.			
			Incident Cause:	COOLING SYSTEM LEAK			
			Incident Reason:	UNKNOWN			
			Nature of Impact:	Soil contamination			
			Receiving Medium:	LAND			
			Environmental Impact:	POSSIBLE			
SPL-5		300 Laurier Avenue<UNOFFICIAL> Ottawa	1857-727KVJ		4/12/2007	NATURAL GAS (METHANE)	0 other - see incident description
			Incident Summary:	TSSA: gas main struck, details unknown			
			Incident Cause:	Pipe Or Hose Leak			
			Incident Reason:	Unknown - Reason not determined			
			Nature of Impact:	Air Pollution; Human Health/Safety			
			Receiving Medium:	Air			
			Environmental Impact:	Not Anticipated			

Ontario Spills

Map Key	Company	Address	Ref No.	Incident Dt	MOE Reported Dt	Contaminant Name	Contaminant Quantity
SPL-6		in front of 300 Laurier Avenue<UNOFFICIAL> Ottawa	2068-69ELAE	2/8/2005	2/8/2005	HYDRAULIC OIL	

Incident Summary: Waste Management-25 L Hydraulic Oil to CB
Incident Cause:
Incident Reason:
Nature of Impact:
Receiving Medium: Water
Environmental Impact: Possible

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-1		Ottawa	7137421				OTTAWA-CARLETON	OTTAWA CITY

Easting Nad83: 445513
Northing Nad83: 5029677
Zone: 18
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 11/9/2009
Primary Water Use:
Secondary Water Use:
Well Depth:
Pump Rate:
Static Water Level:
Flow Rate:
Clear/Cloudy:
Specific Capacity:
Final Well Status: Abandoned-Other
Construction Method:
Flowing (y/n):
Elevation (m): 72.39051
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock:
Water Type:
Casing Material:

Thickness	Original Depth	Material Colour	Material

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-2		Ottawa	7130914				OTTAWA-CARLETON	OTTAWA CITY

Easting Nad83: 445506
Northing Nad83: 5029676
Zone: 18
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 7/25/2009
Primary Water Use: Monitoring
Secondary Water Use:
Well Depth: 6.1 m
Pump Rate:
Static Water Level: 6.8 m
Flow Rate:
Clear/Cloudy:
Specific Capacity:
Final Well Status: Test Hole
Construction Method: Geoprobe
Flowing (y/n):
Elevation (m): 72.333915
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock:
Water Type:
Casing Material: PLASTIC, PLASTIC, PLASTIC, PLASTIC, PLASTIC, PLASTIC

Thickness	Original Depth	Material Colour	Material
0.1 m	0.1 m		OTHER
0.3 m	0.4 m	GREY	SAND, GRAVEL, FILL
0.1 m	0.5 m	BROWN	SAND, FILL
1 m	1.5 m	BROWN	CLAY, FILL, SANDY
3.3 m	4.8 m	GREY	CLAY, SILTY, SAND
1.3 m	6.1 m	BLACK	SHALE

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-3		lot 41 Ottawa	7139448	041		C	OTTAWA-CARLETON	OTTAWA CITY

Easting Nad83: 445484
Northing Nad83: 5029688
Zone: 18
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 12/21/2009
Primary Water Use: Monitoring
Secondary Water Use:
Well Depth: 11.3 m
Pump Rate:
Static Water Level:
Flow Rate:
Clear/Cloudy:
Specific Capacity:
Final Well Status: Test Hole
Construction Method: Air Precussion
Flowing (y/n):
Elevation (m): 72.088226
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock:
Water Type:
Casing Material: PLASTIC, PLASTIC, PLASTIC, PLASTIC, PLASTIC, PLASTIC

Thickness	Original Depth	Material Colour	Material
0.6 m	0.6 m	BROWN	SAND, FILL
0.6 m	1.2 m	BROWN	SAND, GRAVEL, FILL
1.8 m	3 m	BROWN	CLAY, WATER-BEARING, SILTY
1.3 m	4.3 m	GREY	CLAY, WATER-BEARING
1.2 m	5.5 m	GREY	SILT, CLAYEY
0.5 m	6 m	GREY	CLAY, SANDY
5.3 m	11.3 m	BROWN	SHALE, DRY

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-4		Ottawa	7121702				OTTAWA-CARLETON	OTTAWA CITY

Easting Nad83: 445456
Northing Nad83: 5029774
Zone: 18
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 8/14/2008
Primary Water Use: Monitoring
Secondary Water Use:
Well Depth: 30.76 m
Pump Rate:
Static Water Level: 7 m m m m
Flow Rate:
Clear/Cloudy:
Specific Capacity:
Final Well Status: Test Hole
Construction Method: Diamond
Flowing (y/n):
Elevation (m): 71.114791
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock:
Water Type:
Casing Material: PLASTIC, PLASTIC, PLASTIC, PLASTIC, PLASTIC

Thickness	Original Depth	Material Colour	Material
0.15 m	0.15 m		OTHER
1.6 m	1.75 m	GREY	SAND, GRAVEL, SILTY
0.87 m	2.62 m	GREY	CLAY, SILTY
3.32 m	5.94 m	GREY	SAND, CLAY, SILTY
1.38 m	7.32 m	GREY	SAND, CLAY, SHALE
23.44 m	30.76 m	BLACK	SHALE, ROCK, LIMESTONE

Appendix: Ontario Database Descriptions

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

Provincial Government Source Databases:

Abandoned Aggregate Inventory **Up to Sept 2002** **AAGR**

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

Aggregate Inventory **Up to Jun 2010** **AGR**

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. Please note that the database is only referenced by lot\concession and city/town location. The database provides information regarding the registered owner/operator, location, status, licence type, and maximum tonnage.

Abandoned Mines Information System **1800-2005** **AMIS**

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

Borehole **1875-Sept 2010** **BORE**

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

Certificates of Approval **1985-Jun 2011** **CA**

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status.

TSSA Commercial Fuel Oil Tanks **1948-Aug 2010** **CFOT**

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

Coal Gasification Plants and Coal Tar Sites **April 1987 and November 1988*** **COAL**

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

Compliance and Convictions **1989-Jun 2011** **CONV**

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

Drill Holes **1886-2005** **DRL**

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

Environmental Registry **1994-Jun 2011** **EBR**

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, licence, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes things like; Approval for discharge into the natural environment other than water (i.e. Air), Permit to Take Water (PTTW), Certificate of Property Use (CPU), Approval for a waste disposal site, Order for preventative measures.(EPA s. 18), Order for conformity with Act for waste disposal sites.(EPA s. 44), Order for remedial work.(EPA s. 17) and many more.

TSSA Fuel Storage Tanks **Current to Jun 2011** **FST**

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

Ontario Regulation 347 Waste Generators Summary **1986-Oct 2010** **GEN**

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

Mineral Occurrences **1846-Nov 2010** **MNR**

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

Non-Compliance Reports **1992(water only), 1994-2009** **NCPL**

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

Ontario Oil and Gas Wells **1800-Jun 2011** **OOGW**

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

Ontario Inventory of PCB Storage Sites **1987-Oct 2004** **OPCB**

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

Pesticide Register **1988-Mar 2011** **PES**

The Ontario Ministry of Environment maintains a database of all manufacturers and vendors of registered pesticides.

Private and Retail Fuel Storage Tanks **1989-1996*** **PRT**

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

Ontario Regulation 347 Waste Receivers Summary **1986-2008** **REC**

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

Record of Site Condition **1997-Sept 2001, Oct 2004-Jun 2011** **RSC**

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use, such as residential, proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up. Information available includes Registration Number, Filing Owner, Property Address, Filing Date and Municipality.

Ontario Spills **1988-Nov 2010** **SPL**

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

Wastewater Discharger Registration Database **1990-2009** **SRDS**

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

Waste Disposal Sites - MOE CA Inventory **1970-Jun 2011** **WDS**

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. For more current information for Waste Disposal Sites please see the EBR database, which will include information such as 'Approval for a waste disposal site (EPA s.27)' and 'Approval for use of a former waste disposal site (EPA s.46)'.

Waste Disposal Sites - MOE 1991 Historical Approval Inventory **Up to Oct 1990*** **WDSH**

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

Water Well Information System **1955-Mar 2011** **WWIS**

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

Federal Government Source Databases: Diagram Identifier:

Environmental Effects Monitoring **1992-2007*** **EEM**

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

Environmental Issues Inventory System **1992-2001*** **EIIS**

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

Federal Convictions **1988-Jun 2007** **FCON**

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

Contaminated Sites on Federal Land **June 2000-May 2011** **FCS**

The Treasury Board of Canada Secretariat maintains an inventory of all known contaminated sites held by various Federal departments and agencies. This inventory does not include properties owned by Crown corporations, but does contain non-federal sites for which the Government of Canada has accepted some or all financial responsibility. All sites have been classified through a system developed by the Canadian Council of Ministers of the Environment. The database provides information on company name, location, site ID #, property use, classification, current status, contaminant type and plan of action for site remediation.

Fisheries & Oceans Fuel Tanks **1964-Sept 2003** **FOFT**

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

Indian & Northern Affairs Fuel Tanks **1950-Aug 2003** **IAFT**

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

National Analysis of Trends in Emergencies System (NATES) **1974-1994*** **NATE**

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

National Defence & Canadian Forces Fuel Tanks **Up to May 2001*** **NDFT**

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

National Defence & Canadian Forces Spills **Mar 1999-Aug 2010** **NDSP**

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

National Defence & Canadian Forces Waste Disposal Sites **2001-April 2007** **NDWD**

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

National Environmental Emergencies System (NEES) **1974-2003** **NEES**

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

National PCB Inventory **1988-2008** **NPCB**

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. All federal out-of-service PCB containing equipment and all PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites.

National Pollutant Release Inventory **1993-2009** **NPRI**

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

Parks Canada Fuel Storage Tanks **1920-Jan 2005** **PCFT**

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

Transport Canada Fuel Storage Tanks **1970-March 2007** **TCFT**

With the provinces of BC, MB, NB, NF, ON, PE, and QC; Transport Canada currently owns and operates 90 fuel storage tanks. This inventory will also include The Pickering Lands, which refers to the 7,530 hectares (18,600 acres) of land in Pickering, Markham and Uxbridge - owned by the Government of Canada since 1972. Properties on this land has been leased by the government since 1975, falls under the Site Management Policy of Transport Canada, but administered by Public Works and Government Services Canada. Our inventory provides information on the site name, location, tank age, capacity and fuel type.

Private Source Databases:

Anderson's Waste Disposal Sites **1860s-Present** **ANDR**

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

Automobile Wrecking & Supplies 2001-Jun 2010 **AUWR**

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

Chemical Register 1992, 1999-Jun 2010 **CHEM**

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

ERIS Historical Searches 1999-Apr 2011 **EHS**

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

Canadian Mine Locations 1998-2009 **MINE**

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

Oil and Gas Wells Oct 2001-Jun 2011 **OGW**

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

Canadian Pulp and Paper 1999, 2002, 2004, 2005, 2009 **PAP**

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

Retail Fuel Storage Tanks 2000-Jun 2010 **RST**

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

Scott's Manufacturing Directory 1992-Mar 2011 **SCT**

Scott's Directories is a data bank containing information on over 70,000 manufacturers in Ontario. Even though Scott's listings are voluntary, it is the most comprehensive database of Ontario manufacturers available. Information concerning a company's address, plant size, and main products are included in this database. This database begins with 1992 information and is updated annually.

Anderson's Storage Tanks 1915-1953* **TANK**

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

APPENDIX D

Site Photographs

Photograph 1: Looking east at Site located at 96 Nepean Street in Ottawa, Ontario. 88 Nepean Street (red brick building) in background.

Photograph 2: Looking northwest at Site property.

Photograph 3: Looking west from Site property.

Photograph 4: Looking north towards Nepean Street from Site property.

APPENDIX E

Record of Boreholes

LIST OF ABBREVIATIONS

The abbreviations commonly employed on Records of Boreholes, on figures and in the text of the report are as follows:

I. SAMPLE TYPE

AS	Auger sample
BS	Block sample
CS	Chunk sample
DO	Drive open
DS	Denison type sample
FS	Foil sample
RC	Rock core
SC	Soil core
ST	Slotted tube
TO	Thin-walled, open
TP	Thin-walled, piston
WS	Wash sample
DT	Dual Tube sample

II. PENETRATION RESISTANCE

Standard Penetration Resistance (SPT), N:
The number of blows by a 63.5 kg. (140 lb.) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) drive open Sampler for a distance of 300 mm (12 in.)
DD- Diamond Drilling

Dynamic Penetration Resistance; N_d:
The number of blows by a 63.5 kg (140 lb.) hammer dropped 760 mm (30 in.) to drive Uncased a 50 mm (2 in.) diameter, 60^0 cone attached to "A" size drill rods for a distance of 300 mm (12 in.).

PH: Sampler advanced by hydraulic pressure
PM: Sampler advanced by manual pressure
WH: Sampler advanced by static weight of hammer
WR: Sampler advanced by weight of sampler and rod

Peizo-Cone Penetration Test (CPT):
An electronic cone penetrometer with a 60^0 conical tip and a projected end area of 10 cm^2 pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (Q_t), porewater pressure (PWP) and friction along a sleeve are recorded Electronically at 25 mm penetration intervals.

III. SOIL DESCRIPTION

(a) Cohesionless Soils

Density Index (Relative Density)	N Blows/300 mm Or Blows/ft.
Very loose	0 to 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very dense	over 50

(b) Cohesive Soils

Consistency	C_u or S_u Kpa	Psf
Very soft	0 to 12	0 to 250
Soft	12 to 25	250 to 500
Firm	25 to 50	500 to 1,000
Stiff	50 to 100	1,000 to 2,000
Very stiff	100 to 200	2,000 to 4,000
Hard	Over 200	Over 4,000

IV. SOIL TESTS

w	water content
w_p	plastic limited
w_1	liquid limit
C	consolidaiton (oedometer) test
CHEM	chemical analysis (refer to text)
CID	consolidated isotropically drained triaxial test[1]
CIU	consolidated isotropically undrained triaxial test with porewater pressure measurement[1]
D_R	relative density (specific gravity, G_s)
DS	direct shear test
M	sieve analysis for particle size
MH	combined sieve and hydrometer (H) analysis
MPC	modified Proctor compaction test
SPC	standard Proctor compaction test
OC	organic content test
SO_4	concentration of water-soluble sulphates
UC	unconfined compression test
UU	unconsolidated undrained triaxial test
V	field vane test (LV-laboratory vane test)
γ	unit weight

Note:
1. Tests which are anisotropically consolidated prior shear are shown as CAD, CAU.

LIST OF SYMBOLS

Unless otherwise stated, the symbols employed in the report are as follows:

I. GENERAL

π	= 3.1416
ln x, natural logarithm of x	
$\log_{10}$ x or log x,	logarithm of x to base 10
g	Acceleration due to gravity
t	time
F	factor of safety
V	volume
W	weight

II. STRESS AND STRAIN

γ	shear strain
Δ	change in, e.g. in stress: $\Delta\sigma'$
ε	linear strain
ε_v	volumetric strain
η	coefficient of viscosity
ν	Poisson's ratio
σ	total stress
σ'	effective stress ($\sigma' = \sigma''-u$)
σ'_{vo}	initial effective overburden stress
$\sigma_1\sigma_2\sigma_3$	principal stresses (major, intermediate, minor)
σ_{oct}	mean stress or octahedral stress = $(\sigma_1+\sigma_2+\sigma_3)/3$
τ	shear stress
u	porewater pressure
E	modulus of deformation
G	shear modulus of deformation
K	bulk modulus of compressibility

III. SOIL PROPERTIES

(a) Index Properties

$\rho(\gamma)$	bulk density (bulk unit weight*)
$\rho_d(\gamma_d)$	dry density (dry unit weight)
$\rho_w(\gamma_w)$	density (unit weight) of water
$\rho_s(\gamma_s)$	density (unit weight) of solid particles
γ'	unit weight of submerged soil ($\gamma'=\gamma-\gamma_w$)
D_R	relative density (specific gravity) of solid particles ($D_R= p_s/p_w$) formerly (G_s)
e	void ratio
n	porosity
S	degree of saturation

* Density symbol is p. Unit weight symbol is γ where γ=pg(i.e. mass density x acceleration due to gravity)

(a) Index Properties (cont'd.)

w	water content
w_1	liquid limit
w_p	plastic limit
I_p	plasticity Index=(w_1-w_p)
w_s	shrinkage limit
I_L	liquidity index=$(w-w_p)/I_p$
I_c	consistency index=$(w_1-w)/I_p$
e_{max}	void ratio in loosest state
e_{min}	void ratio in densest state
I_D	density index-$(e_{max}-e)/(e_{max}-e_{min})$ (formerly relative density)

(b) Hydraulic Properties

h	hydraulic head or potential
q	rate of flow
v	velocity of flow
i	hydraulic gradient
k	hydraulic conductivity (coefficient of permeability)
j	seepage force per unit volume

(c) Consolidation (one-dimensional)

C_c	compression index (normally consolidated range)
C_r	recompression index (overconsolidated range)
C_s	swelling index
C_a	coefficient of secondary consolidation
m_v	coefficient of volume change
c_v	coefficient of consolidation
T_v	time factor (vertical direction)
U	degree of consolidation
σ'_p	pre-consolidation pressure
OCR	Overconsolidation ratio=σ'_p/σ'_{vo}

(d) Shear Strength

$\tau_p\tau_r$	peak and residual shear strength
ϕ'	effective angle of internal friction
δ	angle of interface friction
μ	coefficient of friction=tan δ
c'	effective cohesion
c_u, s_u	undrained shear strength (ϕ=0 analysis)
p	mean total stress $(\sigma_1+\sigma_3)/2$
p'	mean effective stress $(\sigma'_1+\sigma'_3)/2$
q	$(\sigma_1-\sigma_3)/2$ or $(\sigma'_1-\sigma_3)/2$
q_u	compressive strength $(\sigma_1-\sigma_3)$
S_t	sensitivity

Notes: 1. $\tau=c'\sigma'\tan\phi'$

2. Shear strength=(Compressive strength)/2

PROJECT: 11-1121-0202

RECORD OF BOREHOLE: 11-1

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 7, 2011

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m; SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE		99.98							
0	Power Auger 200 mm Diam. (Hollow Stem)	ASPHALTIC CONCRETE		0.08							Flush Mount Protective Casing
		Compact brown sand, some gravel, with brick (FILL)			1	50 DO	10				
1				98.46							
		Very stiff grey brown SILTY CLAY (Weathered Crust)		1.52	2	50 DO	5				
2											
					3	50 DO		>96 >96			
3				96.93							
		Stiff grey SILTY CLAY		3.05	4	50 DO	2				Native Backfill and Bentonite Mix
4								⊕ ⊕ +			
					5	50 DO	WH				
5				94.42				⊕	+		
		Very loose dark brown to black SILTY SAND, some gravel, trace clay, with cobbles and boulders (GLACIAL TILL)		5.56							
6					6	50 DO	2				
				93.12							Bentonite Seal
7		Loose to dense black SILTY SAND, some gravel, trace clay, with cobbles and boulders (GLACIAL TILL)		6.86	7	50 DO	11				Silica Sand
					8	50 DO	9				38 mm Diam. PVC #10 Slot Screen
8											
					9	50 DO	32				Silica Sand
9											
					10	50 DO	44				Bentonite Seal
10				89.97	11	50 DO	>50				
		End of Borehole Auger Refusal		10.01							W.L. in Screen at Elev. 91.89 m on Sept. 23, 2011
11											
12											
13											
14											
15											

DEPTH SCALE

1 : 75

Golder Associates

LOGGED: JMC

CHECKED: CK

MIS-BHS 001 1111210202.GPJ GAL-MIS.GDT 11/17/11 JEM/PG

PROJECT: 11-1121-0202

RECORD OF BOREHOLE: 11-2

SHEET 1 OF 2

LOCATION: See Site Plan

BORING DATE: September 7, 2011

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		99.73							
0	Power Auger 200 mm Diam. (Hollow Stem)	ASPHALTIC CONCRETE		0.10							
		Compact brown sand, some gravel, trace silt, with brick (FILL)			1	50 DO	11				
1				98.02							Native Backfill and Bentonite Mix
		Very stiff grey brown SILTY CLAY (Weathered Crust)		1.71	2	50 DO	3				
2				97.32							
		Stiff grey SILTY CLAY		2.41	3	50 DO	2				
3											Bentonite Seal
					4	50 DO	1				Silica Sand
4											
5					5	50 DO	WH				38 mm Diam. PVC #10 Slot Screen 'B'
6				92.87							
		Stiff grey SILTY CLAY, some sand, trace gravel		6.86	6	50 DO	2				Bentonite Seal
7				92.41							Silica Sand
		Loose to compact dark brown to black SILTY SAND, some gravel, trace clay, with cobbles and boulders (GLACIAL TILL)		7.32	7	50 DO	4				
8											38 mm Diam. PVC #10 Slot Screen 'A'
					8	50 DO	10				
9											
					9	50 DO	7				
10				89.83							
		Compact to dense dark brown to black SILTY SAND, some gravel, trace clay, with cobbles and boulders (GLACIAL TILL)		9.90	10	50 DO	29				
					11	50 DO	36				
11				88.58							Bentonite Seal
		Highly weathered, thinly laminated to thinly bedded, black SHALE BEDROCK		11.15							
12	Rotary Drill NQ Core			87.94							
		Fresh, thinly laminated to thinly bedded, black SHALE BEDROCK		11.79	C1	NQ RC	DD				
					C2	NQ RC	DD				
13				86.42							
		End of Borehole		13.31							
14											W.L. in Screen at Elev. 91.42 m on Sept. 26, 2011
											Screen 'B' dry on Sept. 26, 2011
15											

DEPTH SCALE

1 : 75

Golder Associates

LOGGED: PH

CHECKED: CK

MIS-BHS 001 1111210202.GPJ GAL-MIS.GDT 11/17/11 JEM/PG

PROJECT: 11-1121-0202

RECORD OF DRILLHOLE: 11-2

SHEET 2 OF 2

LOCATION: See Site Plan

DRILLING DATE: September 7, 2011

DATUM: Local

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 850

DRILLING CONTRACTOR: Marathon Drilling

JN - Joint, FLT - Fault, SHR- Shear, VN - Vein, CJ - Conjugate
BD- Bedding, FO- Foliation, CO- Contact, OR- Orthogonal, CL - Cleavage
PL - Planar, CU- Curved, UN- Undulating, ST - Stepped, IR - Irregular
PO- Polished, K - Slickensided, SM- Smooth, Ro - Rough, MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	FLUSH	COLOUR % RETURN	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.3 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jr	Ja	Jn	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	
		GROUND SURFACE		88.58																	
12	Rotary Drill / NW Casing	Fresh to highly weathered, thinly laminated to thinly bedded, black SHALE BEDROCK		11.15																	
	Rotary Drill / NQ Core				C1																Bentonite Seal
13				86.42	C2																
		End of Drillhole		13.31																	W.L. in Screen at Elev. 91.42 m on Sept. 26, 2011
14																					Screen 'B' dry on Sept. 26, 2011
15																					
16																					
17																					
18																					
19																					
20																					
21																					
22																					
23																					
24																					
25																					
26																					

DEPTH SCALE
1 : 75

Golder Associates

LOGGED: PH
CHECKED: CK

MIS-RCK 004 1111210202.GPJ GAL-MISS.GDT 11/17/11 JEM/PG

PROJECT: 11-1121-0202

RECORD OF BOREHOLE: 11-3

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 20, 2011

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		100.04							
0	Power Auger 200 mm Diam. (Hollow Stem)	Inferred Fill Material		0.00							Flushmount Casing; Bentonite Seal
1											
2				97.75							
		Very stiff to stiff grey brown to grey SILTY CLAY (Weathered Crust)		2.29	1	50 DO	6				
3				96.99							
		Stiff grey SILTY CLAY, trace gravel, with sand seams		3.05	2	50 DO	2				Native Backfill
4					3	50 DO	2				
5					4	50 DO	3				
					5	50 DO	2				
6					6	50 DO	3				Bentonite Seal
7				93.03							Silica Sand
		Compact dark brown to black SILTY SAND, some gravel, trace clay, with cobbles, boulders, and shale fragments (GLACIAL TILL)		7.01	7	50 DO	17				
8					8	50 DO	15				
					9	50 DO	13				32 mm Diam. PVC #10 Slot Screen
9					10	50 DO	24				
10				90.13							
		Highly weathered SHALE BEDROCK		9.91	11	50 DO	>62				Silica Sand
				89.68							
		End of Borehole Auger Refusal		10.36							W.L. in Screen at Elev. 91.91 m on Sept. 23, 2011
11											
12											
13											
14											
15											

MIS-BHS 001 1111210202.GPJ GAL-MIS.GDT 11/17/11 JEM/PG

DEPTH SCALE

1 : 75

Golder Associates

LOGGED: PH

CHECKED: CK

PROJECT: 11-1121-0202

RECORD OF BOREHOLE: 11-4

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 20, 2011

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		100.05							
0	Power Auger 200 mm Diam. (Hollow Stem)	Inferred Fill Material		0.00							Flushmount Casing
1											Bentonite Seal
2				97.76							
		Very stiff to stiff grey brown to grey SILTY CLAY (Weathered Crust)		2.29	1	50 DO	5				
3				97.00							
		Stiff to firm grey SILTY CLAY, trace gravel, with sand seams		3.05	2	50 DO	2				
4					3	50 DO	WH				Native Backfill
5					4	50 DO	2				
					5	50 DO	WH				
6				93.42	6	50 DO	3				
		Loose to very dense dark brown to black SANDY SILT, some gravel, trace clay, with cobbles, boulders, and shale fragments (GLACIAL TILL)		6.63	7	50 DO	4				Bentonite Seal
7											Silica Sand
8					8	50 DO	8				32 mm Diam. PVC #10 Slot Screen
					9	50 DO	17				
9					10	50 DO	11				Silica Sand
10					11	50 DO	15				Caved Material
					12	50 DO	>61				
11				88.95							
		End of Borehole Sampler Refusal		11.10							W.L. in Screen at Elev. 92.00 m on Sept. 26, 2011
12											
13											
14											
15											

DEPTH SCALE

1 : 75

Golder Associates

LOGGED: PH

CHECKED: CK

MIS-BHS 001 1111210202.GPJ GAL-MIS.GDT 11/17/11 JEM/PG

PROJECT: 11-1121-0202

RECORD OF BOREHOLE: 11-5

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 25, 2011

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ●, rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		100.09							
0	Power Auger 200 mm Diam. (Hollow Stem)	Inferred Fill Material		0.00							Flushmount Casing
1											
2				97.80							
		Very stiff to stiff grey brown to grey SILTY CLAY (Weathered Crust)		2.29	1	50 DO	2				
3				97.04							
		Stiff to firm grey SILTY CLAY, trace gravel, with sand seams		3.05	2	50 DO	2				
4					3	50 DO	WH				Native Backfill
5					4	50 DO	WH				
					5	50 DO	WH				
6				93.72							
		Compact dark brown to black SILTY SAND, some gravel, trace clay, with cobbles, boulders, and shale fragments (GLACIAL TILL)		6.37	6	50 DO	2				
7					7	50 DO	17				Bentonite Seal / Silica Sand
8					8	50 DO	14				32 mm Diam. PVC #10 Slot Screen
				91.25	9	50 DO	27				
9		Highly Weathered SHALE BEDROCK		8.84							Silica Sand
					10	50 DO	25				
10											Bentonite Seal
				89.67	11	50 DO	33				
		End of Borehole Auger Refusal		10.42							W.L. in Screen at Elev. 91.91 m on Sept. 26, 2011
11											
12											
13											
14											
15											

DEPTH SCALE

1 : 75

Golder Associates

LOGGED: PH

CHECKED: CK

MIS-BHS 001 1111210202.GPJ GAL-MIS.GDT 11/17/11 JEM/PG

PROJECT: 11-1121-0202

RECORD OF BOREHOLE: 11-6

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 22, 2011

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ●, rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		100.20							
0	Power Auger 200 mm Diam. (Hollow Stem)	Inferred Fill Material		0.00							Flushmount Casing; Bentonite Seal
1											
2				97.91							
		Very stiff to stiff grey brown to grey SILTY CLAY (Weathered Crust)		2.29	1	50 DO	3				
3				97.15							
		Stiff to firm grey SILTY CLAY, trace gravel, with sand seams		3.05	2	50 DO	2				Native Backfill
4					3	50 DO	1				
5					4	50 DO	WH				
					5	50 DO	5				
6					6	50 DO	39				Bentonite Seal
				93.49							Silica Sand
7		Loose to dense dark brown to black SANDY SILT, some gravel, trace clay, with cobbles, boulders, and shale fragments (GLACIAL TILL)		6.71	7	50 DO	11				
8					8	50 DO	10				32 mm Diam. PVC #10 Slot Screen
9					9	50 DO	7				Silica Sand
					10	50 DO	16				
				90.51							Bentonite Seal
10		Highly weathered SHALE BEDROCK		9.69	11	50 DO	34				
				89.43	12	50 DO	>50				
		End of Borehole Sampler Refusal		10.77							
11											Screen dry on Sept. 26, 2011
12											
13											
14											
15											

DEPTH SCALE

1 : 75

Golder Associates

LOGGED: PH

CHECKED: CK

MIS-BHS 001 1111210202.GPJ GAL-MIS.GDT 11/17/11 JEM/PG

PROJECT: 11-1121-0202

RECORD OF BOREHOLE: 11-7

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 21, 2011

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		100.10							
0	Power Auger 200 mm Diam. (Hollow Stem)	Inferred Fill Material		0.00							Flushmount Casing
1											Bentonite Seal
2				97.81							
		Very stiff to stiff grey brown to grey SILTY CLAY (Weathered Crust)		2.29	1	50 DO	3				
3				97.05							
		Stiff to firm grey SILTY CLAY, trace gravel, with sand seams		3.05	2	50 DO	2				
4					3	50 DO	WH				Native Backfill
5					4	50 DO	WH				
					5	50 DO	WH				
6					6	50 DO	5				
7				92.88	7	50 DO	WH				Bentonite Seal / Silica Sand
		Compact dark brown to black SANDY SILT, some gravel, trace clay, with cobbles, boulders, and shale fragments (GLACIAL TILL)		7.22	8	50 DO	10				32 mm Diam. PVC #10 Slot Screen
8					9	50 DO	11				
9					10	50 DO	27				Silica Sand
10				90.10							Bentonite Seal
		Highly weathered SHALE BEDROCK		10.00	11	50 DO	32				
				89.48							
		End of Borehole Auger Refusal		10.62							W.L. in Screen at Elev. 91.96 m on Sept. 26, 2011
11											
12											
13											
14											
15											

DEPTH SCALE

1 : 75

Golder Associates

LOGGED: PH

CHECKED: CK

MIS-BHS 001 1111210202.GPJ GAL-MIS.GDT 11/17/11 JEM/PG

PROJECT: 11-1121-0202

RECORD OF BOREHOLE: 11-8

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 23, 2011

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE		100.29							
0	Power Auger 200 mm Diam. (Hollow Stem)	Inferred Fill Material		0.00							Flushmount Casing
											Bentonite Seal
1											
2				98.00							
		Sand, some gravel, trace silt (FILL)									
		Stiff grey brown SILTY CLAY (Weathered Crust)		2.38	1	50 DO	WH				
3				97.24							
		Stiff to firm grey SILTY CLAY, trace gravel, with cobbles and boulders		3.05	2	50 DO	WH				
											Native Backfill
4					3	50 DO	WH				
5					4	50 DO	WH				
					5	50 DO	WH				
6					6	50 DO	WH				
											Bentonite Seal
7				93.22							
		Loose to compact dark brown to black SILTY SAND, some gravel, trace clay, with cobbles and boulders (GLACIAL TILL)		7.07	7	50 DO	7				Silica Sand
8					8	50 DO	13				32 mm Diam. PVC #10 Slot Screen
					9	50 DO	7				
9											
					10	50 DO	4				Silica Sand
				90.61							
10		Highly weathered SHALE BEDROCK		9.68	11	50 DO	14				Bentonite Seal
				89.38	12	50 DO	>50				
11		End of Borehole Sampler Refusal		10.91							W.L. in Screen at Elev. 91.99 m on Sept. 26, 2011
12											
13											
14											
15											

DEPTH SCALE

1 : 75

Golder Associates

LOGGED: PH

CHECKED: CK

MIS-BHS 001 1111210202.GPJ GAL-MIS.GDT 11/17/11 JEM/PG

PROJECT: 11-1121-0202

RECORD OF BOREHOLE: 11-9

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 22, 2011

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE		100.31							
0	Power Auger 200 mm Diam. (Hollow Stem)	Inferred Fill Material		0.00							Flushmount Casing
											Bentonite Seal
1											
2				98.02							
		Very stiff to stiff grey brown to grey SILTY CLAY (Weathered Crust)		2.29	1	50 DO	2				
3				97.19							
		Stiff grey SILTY CLAY, trace gravel, with sand seams		3.12	2	50 DO	WH				
											Native Backfill
4					3	50 DO	WH				
					4	50 DO	2				
5											
					5	50 DO	WH				
6					6	50 DO	PH				
											Bentonite Seal
7					7	50 DO	PH				Silica Sand
				92.39	8	50 DO	PH				
8		Compact dark brown to black SILTY SAND, some gravel, trace clay, with cobbles and boulders (GLACIAL TILL)		7.92	9	50 DO	PH				▽
					10	50 DO	16				
9				91.32							32 mm Diam. PVC #10 Slot Screen
		Highly weathered SHALE BEDROCK		8.99	11	50 DO	17				
10					12	50 DO	18				
											Silica Sand
											Bentonite Seal
11					13	50 DO	28				Silica Sand
				88.88							
		End of Borehole Auger Refusal		11.43							W.L. in Screen at Elev. 91.94 m on Sept. 26, 2011
12											
13											
14											
15											

DEPTH SCALE

1 : 75

Golder Associates

LOGGED: PH

CHECKED: CK

MIS-BHS 001 1111210202.GPJ GAL-MIS.GDT 11/17/11 JEM/PG

APPENDIX F

Soil and Groundwater Analytical Results

Table 1: Soil Analytical Results

Monitoring Well			BH 11-3	BH 11-3	BH 11-3	BH 11-4	BH 11-4	BH 11-4	BH 11-5
Sampling Date			20/09/2011	20/09/2011	20/09/2011	20/09/2011	20/09/2011	20/09/2011	25/09/2011
Sample ID			BH11-3 SA6	Field duplicate - BH11-3 SA6 DUP	BH11-3 SA7	BH11-4 SA4	BH11-4 SA6	BH11-4 SA8	BH11-5 SA 2
Depth		MOE Table 3 (1)	6.10-6.71	6.10-6.71	6.86-7.47	4.57-5.18	6.10-6.71	7.62-8.23	3.05-3.66
General Soil Type			Silty clay	Silty clay	Till	Silty clay	Silty clay	Till	Silty clay
BTEX & F1 Hydrocarbons									
Benzene	ug/g	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	ug/g	2.3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	ug/g	2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
o-Xylene	ug/g	NV	<0.02	<0.02	0.03	<0.02	<0.02	0.04	<0.02
p+m-Xylene	ug/g	NV	<0.04	<0.04	0.08	<0.04	<0.04	0.12	<0.04
Total Xylenes	ug/g	3.1	<0.04	<0.04	0.11	<0.04	<0.04	0.17	<0.04
F1 (C6-C10)	ug/g	55	<10	<10	31	<10	<10	24	<10
F1 (C6-C10) - BTEX	ug/g	NV	<10	<10	31	<10	<10	24	<10
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	98	<10	<10	20	<10	<10	10	<10
F3 (C16-C34 Hydrocarbons)	ug/g	300	<10	<10	22	<10	<10	<10	<10
F4 (C34-C50 Hydrocarbons)	ug/g	2800	<10	<10	<10	<10	<10	<10	<10

1 - Ontario Ministry of the Environment 2011. Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011). Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition [Residential/Parkland/Institutional Property Use, coarse grained].

Bold and Shaded Exceeds Table 3 standard

NV - No value

Table 1: Soil Analytical Results

Monitoring Well			BH 11-5	BH 11-5	BH 11-6	BH 11-6	BH 11-6	BH 11-6
Sampling Date			25/09/2011	25/09/2011	21/09/2011	22/09/2011	22/09/2011	22/09/2011
Sample ID			Field duplicate - BH11-5 SA2 - DUP	BH11-5 SA 11	BH11-6 SA2	BH11-6 SA8	Field duplicate - BH11-6 SA8 DUP	BH11-6 SA11
Depth		MOE Table 3 (1)	3.05-3.66	9.91-10.42	3.05-3.66	7.62-8.23	7.62-8.23	9.91-10.52
General Soil Type			Silty clay	Weathered shale	Silty clay	Till	Till	Weathered shale
BTEX & F1 Hydrocarbons								
Benzene	ug/g	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	ug/g	2.3	<0.02	0.08	<0.02	0.12	0.04	0.18
Ethylbenzene	ug/g	2	<0.02	0.03	<0.02	0.04	<0.02	0.10
o-Xylene	ug/g	NV	<0.02	0.16	<0.02	0.23	0.09	0.59
p+m-Xylene	ug/g	NV	<0.04	0.55	<0.04	0.71	0.27	1.8
Total Xylenes	ug/g	3.1	<0.04	0.72	<0.04	0.94	0.37	2.4
F1 (C6-C10)	ug/g	55	<10	**61**	<10	55	37	**200**
F1 (C6-C10) - BTEX	ug/g	NV	<10	60	<10	54	36	200
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	98	<10	67	<10	62	74	62
F3 (C16-C34 Hydrocarbons)	ug/g	300	<10	52	<10	54	63	46
F4 (C34-C50 Hydrocarbons)	ug/g	2800	<10	<10	<10	<10	<10	<10

1 - Ontario Ministry of the Environment 2011. Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011). Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition [Residential/Parkland/Institutional Property Use, coarse grained].

Bold and Shaded Exceeds Table 3 standard

NV - No value

Table 1: Soil Analytical Results

Monitoring Well			BH 11-7	BH 11-7	BH 11-8	BH 11-8	BH 11-9	BH 11-9	BH 11-9
Sampling Date			21/09/2011	21/09/2011	23/09/2011	23/09/2011	22/09/2011	22/09/2011	23/09/2011
Sample ID			BH11-7 SA3	BH11-7 SA8	BH11-8 SA 4	BH11-8 SA 6	BH11-9 SA3	BH11-9 SA5	BH11-9 SA 11
Depth		MOE Table 3 [(1)]	3.81-4.42	7.62-8.23	4.57-5.18	6.10-6.71	3.81-4.42	5.33-5.94	9.14-9.75
General Soil Type			Silty clay	Weathered shale	Silty clay	Silty clay	Silty clay	Silty clay	Weathered shale
BTEX & F1 Hydrocarbons									
Benzene	ug/g	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	ug/g	2.3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	ug/g	2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
o-Xylene	ug/g	NV	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05
p+m-Xylene	ug/g	NV	<0.04	0.05	<0.04	<0.04	<0.04	<0.04	0.14
Total Xylenes	ug/g	3.1	<0.04	0.05	<0.04	<0.04	<0.04	<0.04	0.19
F1 (C6-C10)	ug/g	55	<10	32	<10	<10	<10	<10	35
F1 (C6-C10) - BTEX	ug/g	NV	<10	32	<10	<10	<10	<10	35
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	98	<10	<10	<10	<10	<10	<10	40
F3 (C16-C34 Hydrocarbons)	ug/g	300	<10	<10	<10	<10	<10	<10	42
F4 (C34-C50 Hydrocarbons)	ug/g	2800	<10	<10	<10	<10	<10	<10	<10

1 - Ontario Ministry of the Environment 2011. Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011). Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition [Residential/Parkland/Institutional Property Use, coarse grained].

Bold and Shaded Exceeds Table 3 standard

NV - No value

Table 2: Groundwater Analytical Results

Monitoring Well			MW 11-1	MW 11-1	MW 11-1	MW 11-2A	MW 11-2B	MW 11-2B	MW 11-3
Sampling Date			07/09/2011	07/09/2011	23/09/2011	07/09/2011	07/09/2011	26/09/2011	23/09/2011
Sample ID		MOE Table 3 [(1)]	11-1	Field duplicate of 11-1	11-1	11-2A	11-2B	11-2	11-3
BTEX & F1 Hydrocarbons									
Benzene	ug/L	44	0.1	0.1	<0.20	<0.1	<0.1	<0.20	<0.20
Toluene	ug/L	18000	1.0	1.0	0.65	0.3	0.4	0.30	<0.20
Ethylbenzene	ug/L	2300	0.2	0.3	<0.20	<0.1	<0.1	<0.20	<0.20
o-Xylene	ug/L	NV	2.2	1.2	0.68	0.2	0.2	<0.20	<0.20
p+m-Xylene	ug/L	NV	1.1	2.2	1.7	<0.1	<0.1	<0.40	<0.40
Total Xylenes	ug/L	4200	3.3	3.4	2.4	0.2	0.2	<0.40	<0.40
F1 (C6-C10)	ug/L	750	<25	<25	51	<25	<25	<25	<25
F1 (C6-C10) - BTEX	ug/L	NV	<25	<25	48	<25	<25	<25	<25
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/L	150	<100	<100	<100	<100	<100	**160**	<100
F3 (C16-C34 Hydrocarbons)	ug/L	500	<100	<100	<100	150	370	400	<100
F4 (C34-C50 Hydrocarbons)	ug/L	500	<100	<100	<100	100	240	110	<100

1 - Ontario Ministry of the Environment 2011. Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011). Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition [Groundwater, coarse grained].

Bold and Shaded Exceeds Table 3 standard

NV - No value

Table 2: Groundwater Analytical Results

Monitoring Well			MW 11-4	MW 11-5	MW 11-7	MW 11-8	MW 11-9
Sampling Date			26/09/2011	26/09/2011	26/09/2011	26/09/2011	26/09/2011
Sample ID		MOE Table 3 (1)	11-4	11-5	11-7	11-8	11-9
BTEX & F1 Hydrocarbons							
Benzene	ug/L	44	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	ug/L	18000	<0.20	0.33	<0.20	<0.20	<0.20
Ethylbenzene	ug/L	2300	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	ug/L	NV	<0.20	0.34	<0.20	<0.20	<0.20
p+m-Xylene	ug/L	NV	<0.40	0.99	<0.40	<0.40	<0.40
Total Xylenes	ug/L	4200	<0.40	1.3	<0.40	<0.40	<0.40
F1 (C6-C10)	ug/L	750	<25	30	<25	<25	<25
F1 (C6-C10) - BTEX	ug/L	NV	<25	28	<25	<25	<25
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	150	150	**170**	<100	**300**	<100
F3 (C16-C34 Hydrocarbons)	ug/L	500	110	110	120	210	<100
F4 (C34-C50 Hydrocarbons)	ug/L	500	<100	210	100	130	<100

1 - Ontario Ministry of the Environment 2011. Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011). Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition [Groundwater, coarse grained].

Bold and Shaded Exceeds Table 3 standard

NV - No value

APPENDIX G

Laboratory Certificates of Analyses

Your Project #: 11-1122-0202
Site Location: NEPEAN ST.
Your C.O.C. #: 38294

Attention: Sully Sullivan
Golder Associates Ltd
32 Steacie Dr
Kanata, ON
K2K 2A9

Report Date: 2011/09/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1D6975
Received: 2011/09/07, 14:30

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2011/09/07	2011/09/07	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2011/09/07	2011/09/07	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	2	2011/09/08	2011/09/08	CAM SOP-00447	EPA 6020
MOISTURE	1	N/A	2011/09/08	CAM SOP-00445	McKeague 2nd ed 1978
Volatile Organic Compounds in Soil	1	2011/09/07	2011/09/08	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.

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

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

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

../2

Maxxam Job #: B1D6975
Report Date: 2011/09/08

Golder Associates Ltd
Client Project #: 11-1122-0202
Site Location: NEPEAN ST.
Sampler Initials: JC

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
Email: JClement@maxxam.ca
Phone# (613) 274-3549

==========

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 #: B1D6975
Report Date: 2011/09/08

Golder Associates Ltd
Client Project #: 11-1122-0202
Site Location: NEPEAN ST.
Sampler Initials: JC

RESULTS OF ANALYSES OF SOIL

Maxxam ID		KU5281		
Sampling Date		2011/09/07 12:00		
	Units	**BH11-1 SA-9**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	9.2	0.2	2606604

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		KU5279	KU5280		
Sampling Date		2011/09/07 09:00	2011/09/07 09:00		
	Units	**BH11-1 SA-1**	**BH11-2 SA-1**	**RDL**	**QC Batch**
Metals					
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	0.2	2607483
Acid Extractable Arsenic (As)	ug/g	2	<1	1	2607483
Acid Extractable Barium (Ba)	ug/g	98	30	0.5	2607483
Acid Extractable Beryllium (Be)	ug/g	0.4	<0.2	0.2	2607483
Acid Extractable Boron (B)	ug/g	<5	<5	5	2607483
Acid Extractable Cadmium (Cd)	ug/g	0.2	<0.1	0.1	2607483
Acid Extractable Chromium (Cr)	ug/g	23	18	1	2607483
Acid Extractable Cobalt (Co)	ug/g	4.4	4.1	0.1	2607483
Acid Extractable Copper (Cu)	ug/g	9.5	6.9	0.5	2607483
Acid Extractable Lead (Pb)	ug/g	76	35	1	2607483
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	0.8	0.5	2607483
Acid Extractable Nickel (Ni)	ug/g	10	10	0.5	2607483
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	0.5	2607483
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	0.2	2607483
Acid Extractable Thallium (Tl)	ug/g	0.08	0.05	0.05	2607483
Acid Extractable Uranium (U)	ug/g	0.51	0.57	0.05	2607483
Acid Extractable Vanadium (V)	ug/g	27	18	5	2607483
Acid Extractable Zinc (Zn)	ug/g	110	29	5	2607483
Acid Extractable Mercury (Hg)	ug/g	0.08	<0.05	0.05	2607483

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D6975
Report Date: 2011/09/08

Golder Associates Ltd
Client Project #: 11-1122-0202
Site Location: NEPEAN ST.
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		KU5281		
Sampling Date		2011/09/07 12:00		
	Units	**BH11-1 SA-9**	**RDL**	**QC Batch**
Volatile Organics				
Acetone (2-Propanone)	ug/g	<0.5	0.5	2606701
Benzene	ug/g	<0.02	0.02	2606701
Bromodichloromethane	ug/g	<0.05	0.05	2606701
Bromoform	ug/g	<0.05	0.05	2606701
Bromomethane	ug/g	<0.05	0.05	2606701
Carbon Tetrachloride	ug/g	<0.05	0.05	2606701
Chlorobenzene	ug/g	<0.05	0.05	2606701
Chloroform	ug/g	<0.05	0.05	2606701
Dibromochloromethane	ug/g	<0.05	0.05	2606701
1,2-Dichlorobenzene	ug/g	<0.05	0.05	2606701
1,3-Dichlorobenzene	ug/g	<0.05	0.05	2606701
1,4-Dichlorobenzene	ug/g	<0.05	0.05	2606701
Dichlorodifluoromethane (FREON 12)	ug/g	<0.05	0.05	2606701
1,1-Dichloroethane	ug/g	<0.05	0.05	2606701
1,2-Dichloroethane	ug/g	<0.05	0.05	2606701
1,1-Dichloroethylene	ug/g	<0.05	0.05	2606701
cis-1,2-Dichloroethylene	ug/g	<0.05	0.05	2606701
trans-1,2-Dichloroethylene	ug/g	<0.05	0.05	2606701
1,2-Dichloropropane	ug/g	<0.05	0.05	2606701
cis-1,3-Dichloropropene	ug/g	<0.05	0.05	2606701
trans-1,3-Dichloropropene	ug/g	<0.05	0.05	2606701
Ethylbenzene	ug/g	0.05	0.02	2606701
Ethylene Dibromide	ug/g	<0.05	0.05	2606701
Hexane	ug/g	0.33	0.05	2606701
Methylene Chloride(Dichloromethane)	ug/g	<0.05	0.05	2606701
Methyl Isobutyl Ketone	ug/g	<0.5	0.5	2606701
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.5	0.5	2606701
Methyl t-butyl ether (MTBE)	ug/g	<0.05	0.05	2606701
Styrene	ug/g	<0.05	0.05	2606701
1,1,1,2-Tetrachloroethane	ug/g	<0.05	0.05	2606701
1,1,2,2-Tetrachloroethane	ug/g	<0.05	0.05	2606701
Tetrachloroethylene	ug/g	<0.05	0.05	2606701
Toluene	ug/g	0.07	0.02	2606701
1,1,1-Trichloroethane	ug/g	<0.05	0.05	2606701
1,1,2-Trichloroethane	ug/g	<0.05	0.05	2606701

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D6975
Report Date: 2011/09/08

Golder Associates Ltd
Client Project #: 11-1122-0202
Site Location: NEPEAN ST.
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		KU5281		
Sampling Date		2011/09/07 12:00		
	Units	**BH11-1 SA-9**	**RDL**	**QC Batch**
Trichloroethylene	ug/g	<0.05	0.05	2606701
Vinyl Chloride	ug/g	<0.02	0.02	2606701
p+m-Xylene	ug/g	0.30	0.02	2606701
o-Xylene	ug/g	0.11	0.02	2606701
Xylene (Total)	ug/g	0.41	0.02	2606701
Trichlorofluoromethane (FREON 11)	ug/g	<0.05	0.05	2606701
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	93		2606701
D4-1,2-Dichloroethane	%	101		2606701
D8-Toluene	%	102		2606701

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		KU5281		
Sampling Date		2011/09/07 12:00		
	Units	**BH11-1 SA-9**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/g	17	10	2606624
F1 (C6-C10) - BTEX	ug/g	16	10	2606624
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	34	10	2606544
F3 (C16-C34 Hydrocarbons)	ug/g	36	10	2606544
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	2606544
Reached Baseline at C50	ug/g	YES		2606544
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	102		2606624
4-Bromofluorobenzene	%	97		2606624
D10-Ethylbenzene	%	107		2606624
D4-1,2-Dichloroethane	%	96		2606624
o-Terphenyl	%	80		2606544

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D6975
Report Date: 2011/09/08

Golder Associates Ltd
Client Project #: 11-1122-0202
Site Location: NEPEAN ST.
Sampler Initials: JC

Test Summary

Maxxam ID KU5279 **Collected** 2011/09/07
Sample ID BH11-1 SA-1 **Shipped**
Matrix Soil **Received** 2011/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	2607483	2011/09/08	2011/09/08	VIVIANA CANZONIERI

Maxxam ID KU5280 **Collected** 2011/09/07
Sample ID BH11-2 SA-1 **Shipped**
Matrix Soil **Received** 2011/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	2607483	2011/09/08	2011/09/08	VIVIANA CANZONIERI

Maxxam ID KU5281 **Collected** 2011/09/07
Sample ID BH11-1 SA-9 **Shipped**
Matrix Soil **Received** 2011/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2606624	2011/09/07	2011/09/07	PAUL RUBINATO
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2606544	2011/09/07	2011/09/07	LYNDSEY HART
MOISTURE	BAL	2606604	N/A	2011/09/08	HABIBA ESSAK
Volatile Organic Compounds in Soil	P&T/MS	2606701	2011/09/07	2011/09/08	PAUL RUBINATO

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D6975
Report Date: 2011/09/08

Golder Associates Ltd
Client Project #: 11-1122-0202
Site Location: NEPEAN ST.
Sampler Initials: JC

Package 1	13.7°C

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

GENERAL COMMENTS

Custody seal was not present on the cooler.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D6975
Report Date: 2011/09/08

Golder Associates Ltd
Client Project #: 11-1122-0202
Site Location: NEPEAN ST.
Sampler Initials: JC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2606544	o-Terphenyl	2011/09/07	83	30 - 130	77	30 - 130	81	%		
2606544	F2 (C10-C16 Hydrocarbons)	2011/09/07	106	60 - 130	103	60 - 130	<10	ug/g	0.4	50
2606544	F3 (C16-C34 Hydrocarbons)	2011/09/07	106	60 - 130	103	60 - 130	<10	ug/g	6.5	50
2606544	F4 (C34-C50 Hydrocarbons)	2011/09/07	106	60 - 130	103	60 - 130	<10	ug/g	9.3	50
2606604	Moisture	2011/09/08							10.2	50
2606624	1,4-Difluorobenzene	2011/09/07			96	60 - 140	96	%		
2606624	1,4-Difluorobenzene DUP	2011/09/07			96	60 - 140				
2606624	4-Bromofluorobenzene	2011/09/07			111	60 - 140	85	%		
2606624	4-Bromofluorobenzene DUP	2011/09/07			112	60 - 140				
2606624	D10-Ethylbenzene	2011/09/07			99	30 - 130	93	%		
2606624	D10-Ethylbenzene DUP	2011/09/07			82	30 - 130				
2606624	D4-1,2-Dichloroethane	2011/09/07			93	60 - 140	94	%		
2606624	D4-1,2-Dichloroethane DUP	2011/09/07			93	60 - 140				
2606624	F1 (C6-C10)	2011/09/07			82	60 - 140	<10	ug/g	2.9	50
2606624	F1 (C6-C10) DUP	2011/09/07			84	60 - 140				
2606624	F1 (C6-C10) - BTEX	2011/09/07					<10	ug/g		
2606701	4-Bromofluorobenzene	2011/09/07			94	60 - 140	99	%		
2606701	4-Bromofluorobenzene DUP	2011/09/08			92	60 - 140				
2606701	D4-1,2-Dichloroethane	2011/09/07			108	60 - 140	104	%		
2606701	D4-1,2-Dichloroethane DUP	2011/09/08			108	60 - 140				
2606701	D8-Toluene	2011/09/07			100	60 - 140	103	%		
2606701	D8-Toluene DUP	2011/09/08			99	60 - 140				
2606701	Acetone (2-Propanone)	2011/09/07			128	60 - 140	<0.5	ug/g	14.9	50
2606701	Acetone (2-Propanone) DUP	2011/09/08			110	60 - 140				
2606701	Benzene	2011/09/07			87	60 - 140	<0.02	ug/g	8.0	50
2606701	Benzene DUP	2011/09/08			94	60 - 140				
2606701	Bromodichloromethane	2011/09/07			90	60 - 140	<0.05	ug/g	10.4	50
2606701	Bromodichloromethane DUP	2011/09/08			100	60 - 140				
2606701	Bromoform	2011/09/07			83	60 - 140	<0.05	ug/g	5.0	50
2606701	Bromoform DUP	2011/09/08			88	60 - 140				
2606701	Bromomethane	2011/09/07			85	60 - 140	<0.05	ug/g	25.6	50
2606701	Bromomethane DUP	2011/09/08			109	60 - 140				
2606701	Carbon Tetrachloride	2011/09/07			100	60 - 140	<0.05	ug/g	9.4	50
2606701	Carbon Tetrachloride DUP	2011/09/08			110	60 - 140				
2606701	Chlorobenzene	2011/09/07			81	60 - 140	<0.05	ug/g	11.1	50
2606701	Chlorobenzene DUP	2011/09/08			91	60 - 140				
2606701	Chloroform	2011/09/07			89	60 - 140	<0.05	ug/g	13.0	50
2606701	Chloroform DUP	2011/09/08			102	60 - 140				
2606701	Dibromochloromethane	2011/09/07			85	60 - 140	<0.05	ug/g	8.5	50
2606701	Dibromochloromethane DUP	2011/09/08			93	60 - 140				

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D6975
Report Date: 2011/09/08

Golder Associates Ltd
Client Project #: 11-1122-0202
Site Location: NEPEAN ST.
Sampler Initials: JC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2606701	1,2-Dichlorobenzene	2011/09/07			82	60 - 140	<0.05	ug/g	12.2	50
2606701	1,2-Dichlorobenzene DUP	2011/09/08			93	60 - 140				
2606701	1,3-Dichlorobenzene	2011/09/07			85	60 - 140	<0.05	ug/g	8.0	50
2606701	1,3-Dichlorobenzene DUP	2011/09/08			92	60 - 140				
2606701	1,4-Dichlorobenzene	2011/09/07			84	60 - 140	<0.05	ug/g	15.7	50
2606701	1,4-Dichlorobenzene DUP	2011/09/08			99	60 - 140				
2606701	Dichlorodifluoromethane (FREON 12)	2011/09/07			83	60 - 140	<0.05	ug/g	8.6	50
2606701	Dichlorodifluoromethane (FREON 12) DUP	2011/09/08			91	60 - 140				
2606701	1,1-Dichloroethane	2011/09/07			91	60 - 140	<0.05	ug/g	13.3	50
2606701	1,1-Dichloroethane DUP	2011/09/08			104	60 - 140				
2606701	1,2-Dichloroethane	2011/09/07			89	60 - 140	<0.05	ug/g	12.3	50
2606701	1,2-Dichloroethane DUP	2011/09/08			101	60 - 140				
2606701	1,1-Dichloroethylene	2011/09/07			82	60 - 140	<0.05	ug/g	41.3	50
2606701	1,1-Dichloroethylene DUP	2011/09/08			124	60 - 140				
2606701	cis-1,2-Dichloroethylene	2011/09/07			86	60 - 140	<0.05	ug/g	10.5	50
2606701	cis-1,2-Dichloroethylene DUP	2011/09/08			95	60 - 140				
2606701	trans-1,2-Dichloroethylene	2011/09/07			87	60 - 140	<0.05	ug/g	11.6	50
2606701	trans-1,2-Dichloroethylene DUP	2011/09/08			98	60 - 140				
2606701	1,2-Dichloropropane	2011/09/07			90	60 - 140	<0.05	ug/g	10.3	50
2606701	1,2-Dichloropropane DUP	2011/09/08			100	60 - 140				
2606701	cis-1,3-Dichloropropene	2011/09/07			86	60 - 140	<0.05	ug/g	7.5	50
2606701	cis-1,3-Dichloropropene DUP	2011/09/08			93	60 - 140				
2606701	trans-1,3-Dichloropropene	2011/09/07			91	60 - 140	<0.05	ug/g	9.0	50
2606701	trans-1,3-Dichloropropene DUP	2011/09/08			97	60 - 140				
2606701	Ethylbenzene	2011/09/07			95	60 - 140	<0.02	ug/g	12.5	50
2606701	Ethylbenzene DUP	2011/09/08			108	60 - 140				
2606701	Ethylene Dibromide	2011/09/07			84	60 - 140	<0.05	ug/g	10.1	50
2606701	Ethylene Dibromide DUP	2011/09/08			92	60 - 140				
2606701	Hexane	2011/09/07			81	60 - 140	<0.05	ug/g	8.1	50
2606701	Hexane DUP	2011/09/08			88	60 - 140				
2606701	Methylene Chloride(Dichloromethane)	2011/09/07			94	60 - 140	<0.05	ug/g	12.3	50
2606701	Methylene Chloride(Dichloromethane) DUP	2011/09/08			107	60 - 140				
2606701	Methyl Isobutyl Ketone	2011/09/07			88	60 - 140	<0.5	ug/g	9.8	50
2606701	Methyl Isobutyl Ketone DUP	2011/09/08			97	60 - 140				
2606701	Methyl Ethyl Ketone (2-Butanone)	2011/09/07			89	60 - 140	<0.5	ug/g	10.2	50
2606701	Methyl Ethyl Ketone (2-Butanone) DUP	2011/09/08			99	60 - 140				
2606701	Methyl t-butyl ether (MTBE)	2011/09/07			82	60 - 140	<0.05	ug/g	11.0	50
2606701	Methyl t-butyl ether (MTBE) DUP	2011/09/08			92	60 - 140				
2606701	Styrene	2011/09/07			85	60 - 140	<0.05	ug/g	9.1	50
2606701	Styrene DUP	2011/09/08			93	60 - 140				

Maxxam Job #: B1D6975
Report Date: 2011/09/08

Golder Associates Ltd
Client Project #: 11-1122-0202
Site Location: NEPEAN ST.
Sampler Initials: JC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2606701	1,1,1,2-Tetrachloroethane	2011/09/07			87	60 - 140	<0.05	ug/g	10.6	50
2606701	1,1,1,2-Tetrachloroethane DUP	2011/09/08			97	60 - 140				
2606701	1,1,2,2-Tetrachloroethane	2011/09/07			75	60 - 140	<0.05	ug/g	6.5	50
2606701	1,1,2,2-Tetrachloroethane DUP	2011/09/08			80	60 - 140				
2606701	Tetrachloroethylene	2011/09/07			82	60 - 140	<0.05	ug/g	11.4	50
2606701	Tetrachloroethylene DUP	2011/09/08			92	60 - 140				
2606701	Toluene	2011/09/07			83	60 - 140	<0.02	ug/g	12.2	50
2606701	Toluene DUP	2011/09/08			94	60 - 140				
2606701	1,1,1-Trichloroethane	2011/09/07			91	60 - 140	<0.05	ug/g	9.6	50
2606701	1,1,1-Trichloroethane DUP	2011/09/08			101	60 - 140				
2606701	1,1,2-Trichloroethane	2011/09/07			83	60 - 140	<0.05	ug/g	11.6	50
2606701	1,1,2-Trichloroethane DUP	2011/09/08			93	60 - 140				
2606701	Trichloroethylene	2011/09/07			89	60 - 140	<0.05	ug/g	7.7	50
2606701	Trichloroethylene DUP	2011/09/08			97	60 - 140				
2606701	Vinyl Chloride	2011/09/07			81	60 - 140	<0.02	ug/g	10.7	50
2606701	p+m-Xylene	2011/09/07			82	60 - 140	<0.02	ug/g	11.4	50
2606701	p+m-Xylene DUP	2011/09/08			92	60 - 140				
2606701	o-Xylene	2011/09/07			99	60 - 140	<0.02	ug/g	7.7	50
2606701	o-Xylene DUP	2011/09/08			107	60 - 140				
2606701	Trichlorofluoromethane (FREON 11)	2011/09/07			114	60 - 140	<0.05	ug/g	8.5	50
2606701	Trichlorofluoromethane (FREON 11) DUP	2011/09/08			124	60 - 140				
2606701	Xylene (Total)	2011/09/07					<0.02	ug/g		
2607483	Acid Extractable Antimony (Sb)	2011/09/08	83	75 - 125	97	75 - 125	<0.2	ug/g	NC	30
2607483	Acid Extractable Arsenic (As)	2011/09/08	96	75 - 125	96	75 - 125	<1	ug/g	NC	30
2607483	Acid Extractable Barium (Ba)	2011/09/08	NC	75 - 125	93	75 - 125	<0.5	ug/g	7.9	30
2607483	Acid Extractable Beryllium (Be)	2011/09/08	92	75 - 125	90	75 - 125	<0.2	ug/g	NC	30
2607483	Acid Extractable Boron (B)	2011/09/08	86	75 - 125	86	75 - 125	<5	ug/g	NC	30
2607483	Acid Extractable Cadmium (Cd)	2011/09/08	95	75 - 125	96	75 - 125	<0.1	ug/g	15.8	30
2607483	Acid Extractable Chromium (Cr)	2011/09/08	100	75 - 125	100	75 - 125	<1	ug/g	3.7	30
2607483	Acid Extractable Cobalt (Co)	2011/09/08	95	75 - 125	96	75 - 125	<0.1	ug/g	2.2	30
2607483	Acid Extractable Copper (Cu)	2011/09/08	NC	75 - 125	101	75 - 125	<0.5	ug/g	2.6	30
2607483	Acid Extractable Lead (Pb)	2011/09/08	104	75 - 125	101	75 - 125	<1	ug/g	13.5	30
2607483	Acid Extractable Molybdenum (Mo)	2011/09/08	94	75 - 125	94	75 - 125	<0.5	ug/g	NC	30
2607483	Acid Extractable Nickel (Ni)	2011/09/08	99	75 - 125	100	75 - 125	<0.5	ug/g	0.2	30
2607483	Acid Extractable Selenium (Se)	2011/09/08	92	75 - 125	97	75 - 125	<0.5	ug/g	NC	30
2607483	Acid Extractable Silver (Ag)	2011/09/08	94	75 - 125	94	75 - 125	<0.2	ug/g	NC	30
2607483	Acid Extractable Thallium (Tl)	2011/09/08	94	75 - 125	100	75 - 125	<0.05	ug/g	NC	30
2607483	Acid Extractable Uranium (U)	2011/09/08	107	75 - 125	105	75 - 125	<0.05	ug/g	9.4	30
2607483	Acid Extractable Vanadium (V)	2011/09/08	102	75 - 125	99	75 - 125	<5	ug/g	NC	30

Maxxam Job #: B1D6975
Report Date: 2011/09/08

Golder Associates Ltd
Client Project #: 11-1122-0202
Site Location: NEPEAN ST.
Sampler Initials: JC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2607483	Acid Extractable Zinc (Zn)	2011/09/08	NC	75 - 125	104	75 - 125	<5	ug/g	6.3	30
2607483	Acid Extractable Mercury (Hg)	2011/09/08	132(1)	75 - 125	96	75 - 125	<0.05	ug/g		

N/A = Not Applicable
RPD = Relative Percent Difference
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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B1D6975

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

CRISTINA CARRIERE, Scientific Services

STEVE ROBERTS, Lab Supervisor, Ottawa

==========

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 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam 6740 Campobello Road, Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

38294 Page 1 of 1

INVOICE INFORMATION	REPORT INFORMATION (if differs from invoice)	PROJECT INFORMATION	MAXXAM JOB NUMBER
Company Name: GOLDER	Company Name:	Quotation #:	
Contact Name: Shilo	Contact Name:	P.O. #:	CHAIN OF CUSTODY #
Address: 32 Steacie Drive KANATA	Address:	Project #: 11-1122-0202	00
Phone: 592-9600 Fax:	Phone: Fax:	Project Name: Nepean Street	
Email: bsullivan@golder.com	Email:	Location: Nepean Street	
		Sampled By: JC & PH	

REGULATORY CRITERIA

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

- [ ] MISA
- [ ] PWQO
- [ ] Reg. 558
- Reg. 153 (circled)
  - [ ] Table 1
  - [ ] Table 2
  - [x] Table 3
  - [ ] Table 6
  - [ ] Residential / Parkland
  - [x] Industrial / Commercial
  - [x] Medium / Fine
  - [ ] Coarse
- Sewer Use
  - [ ] Sanitary
  - [ ] Storm
- Municipality:
- Other (specify):
- Report Criteria on C of A? [ ]

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

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water? (Y / N)	Metals Field Filtered? (Y / N)	ANALYSIS REQUESTED: Metals ICPMS	BTEX	PHC F1-F4	VOC	# of Cont.	COMMENTS / TAT COMMENTS
1	BH11-1 SA-1	Sept. 7/11	9am	Soil	N	N	✓				2	
2	BH11-2 SA-1	Sept 7/11	9am	Soil	N	N	✓				2	
3	BH11-1 SA-9	"	12am	Soil	N	N		✓	✓	✓	4	
4												
5												
6												
7												
8												
9												
10												
11												
12												

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:
- [ ] 5 to 7 Working Days

Rush TAT: Rush Confirmation #: (call Lab for #)
- [x] 1 day
- [ ] 2 days
- [ ] 3 days

DATE Required: Thursday
TIME Required: PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

7-Sep-11 14:30
JULIE CLEMENT
B1D6975
JOF OTT-011

REC'D IN OTTAWA

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time
B.G. Sullivan	Josh Freeman	2011/09/07	14:30

JARS USED AND NOT SUBMITTED

Laboratory Use Only
Temperature (°C) on Receipt: 13/15/13

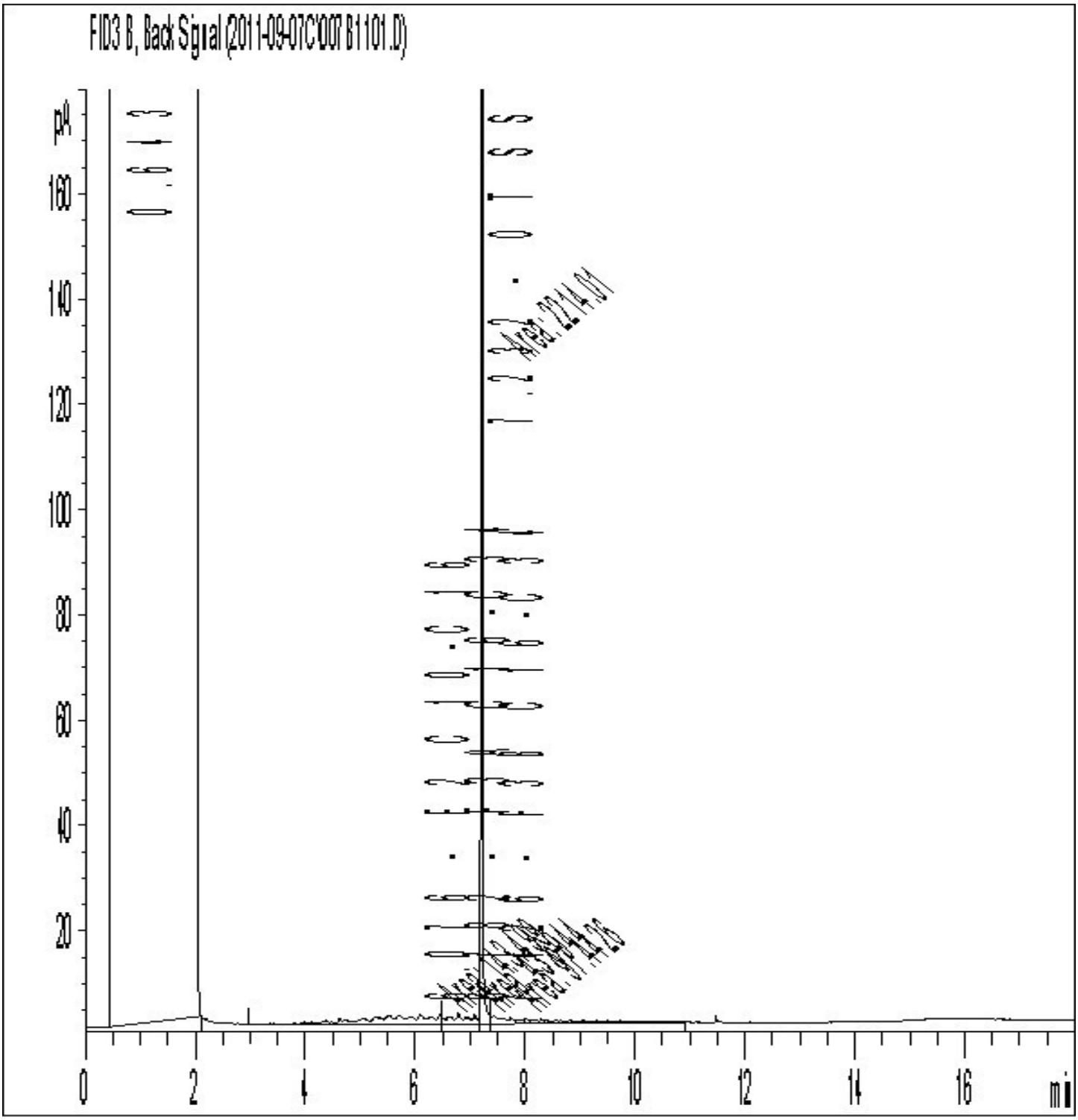
*MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

COC-1004 (03/10) - ENV. ENG.

Report Date: 2011/09/08
Maxxam Job #: B1D6975
Maxxam Sample: KU5281

Golder Associates Ltd
Client Project #: 11-1122-0202
Project name: NEPEAN ST.
Client ID: BH11-1 SA-9

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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Your Project #: 1011210202
Your C.O.C. #: 38321

Attention: Sully Sullivan
Golder Associates Ltd
32 Steacie Dr
Kanata, ON
K2K 2A9

Report Date: 2011/09/09

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1D7346
Received: 2011/09/07, 18:15

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2011/09/08	OTT SOP-00002	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2011/09/09	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	2011/09/08	2011/09/08	OTT SOP-00001	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water	1	2011/09/08	2011/09/09	OTT SOP-00001	CCME Hydrocarbons
Volatile Organic Compounds in Water	4	N/A	2011/09/09	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.

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

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

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
Email: JClement@maxxam.ca
Phone# (613) 274-3549

==========

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: 1

Maxxam Job #: B1D7346
Report Date: 2011/09/09

Golder Associates Ltd
Client Project #: 1011210202

Sampler Initials: JR

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		KU6609	KU6610	KU6611	KU6612		
Sampling Date		2011/09/07	2011/09/07	2011/09/07	2011/09/07		
	Units	**11-1**	**11-2A**	**11-2B**	**11-11**	**RDL**	**QC Batch**
Volatile Organics							
Dichlorodifluoromethane (FREON 12)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	2606709
Hexane	ug/L	<0.5	<0.5	<0.5	0.7	0.5	2606709
Acetone (2-Propanone)	ug/L	<10	18	16	11	10	2606709
Benzene	ug/L	0.1	<0.1	<0.1	0.1	0.1	2606709
Bromodichloromethane	ug/L	<0.1	0.5	0.2	<0.1	0.1	2606709
Bromoform	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
Bromomethane	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	2606709
Carbon Tetrachloride	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
Chlorobenzene	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
Chloroform	ug/L	<0.1	4.1	2.2	<0.1	0.1	2606709
Dibromochloromethane	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
1,2-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
1,3-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
1,4-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
1,1-Dichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
1,2-Dichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
1,1-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
cis-1,2-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
trans-1,2-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
1,2-Dichloropropane	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
cis-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
trans-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
Ethylbenzene	ug/L	0.2	<0.1	<0.1	0.3	0.1	2606709
Ethylene Dibromide	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
Methylene Chloride(Dichloromethane)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	2606709
Methyl Isobutyl Ketone	ug/L	<5	<5	<5	<5	5	2606709
Methyl Ethyl Ketone (2-Butanone)	ug/L	<5	<5	<5	<5	5	2606709
Methyl t-butyl ether (MTBE)	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
Styrene	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
1,1,1,2-Tetrachloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
1,1,2,2-Tetrachloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
Tetrachloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
Toluene	ug/L	1.0	0.3	0.4	1.0	0.2	2606709
1,1,1-Trichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
1,1,2-Trichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D7346
Report Date: 2011/09/09

Golder Associates Ltd
Client Project #: 1011210202

Sampler Initials: JR

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		KU6609	KU6610	KU6611	KU6612		
Sampling Date		2011/09/07	2011/09/07	2011/09/07	2011/09/07		
	Units	**11-1**	**11-2A**	**11-2B**	**11-11**	**RDL**	**QC Batch**
Trichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2606709
Vinyl Chloride	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2606709
p+m-Xylene	ug/L	2.2	0.2	0.2	2.2	0.1	2606709
o-Xylene	ug/L	1.1	<0.1	<0.1	1.2	0.1	2606709
Xylene (Total)	ug/L	3.3	0.2	0.2	3.4	0.1	2606709
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	110	97	82	99		2606709
D4-1,2-Dichloroethane	%	122	117	113	125		2606709
D8-Toluene	%	98	102	94	95		2606709

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		KU6609	KU6610	KU6611	KU6612		
Sampling Date		2011/09/07	2011/09/07	2011/09/07	2011/09/07		
	Units	**11-1**	**11-2A**	**11-2B**	**11-11**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
F1 (C6-C10)	ug/L	<25	<25	<25	<25	25	2607881
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	25	2607881
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	100	2606789
F3 (C16-C34 Hydrocarbons)	ug/L	<100	150	370	<100	100	2606789
F4 (C34-C50 Hydrocarbons)	ug/L	<100	100	240	<100	100	2606789
Reached Baseline at C50	ug/L	YES	YES	YES	YES		2606789
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	83	97	95	112		2607881
4-Bromofluorobenzene	%	103	79	93	76		2607881
D10-Ethylbenzene	%	104	102	100	105		2607881
D4-1,2-Dichloroethane	%	111	104	102	121		2607881
o-Terphenyl	%	120	116	120	112		2606789

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D7346
Report Date: 2011/09/09

Golder Associates Ltd
Client Project #: 1011210202

Sampler Initials: JR

Test Summary

Maxxam ID KU6609 **Collected** 2011/09/07
Sample ID 11-1 **Shipped**
Matrix Water **Received** 2011/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2607881	N/A	2011/09/08	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2606789	2011/09/08	2011/09/08	LYNDSEY HART
Volatile Organic Compounds in Water	P&T/MS	2606709	N/A	2011/09/09	PAUL RUBINATO

Maxxam ID KU6610 **Collected** 2011/09/07
Sample ID 11-2A **Shipped**
Matrix Water **Received** 2011/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2607881	N/A	2011/09/09	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2606789	2011/09/08	2011/09/08	LYNDSEY HART
Volatile Organic Compounds in Water	P&T/MS	2606709	N/A	2011/09/09	PAUL RUBINATO

Maxxam ID KU6611 **Collected** 2011/09/07
Sample ID 11-2B **Shipped**
Matrix Water **Received** 2011/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2607881	N/A	2011/09/09	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2606789	2011/09/08	2011/09/09	LYNDSEY HART
Volatile Organic Compounds in Water	P&T/MS	2606709	N/A	2011/09/09	PAUL RUBINATO

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D7346
Report Date: 2011/09/09

Golder Associates Ltd
Client Project #: 1011210202

Sampler Initials: JR

Test Summary

Maxxam ID	KU6612	**Collected**	2011/09/07
Sample ID	11-11	**Shipped**	
Matrix	Water	**Received**	2011/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2607881	N/A	2011/09/08	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2606789	2011/09/08	2011/09/08	LYNDSEY HART
Volatile Organic Compounds in Water	P&T/MS	2606709	N/A	2011/09/09	PAUL RUBINATO

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D7346
Report Date: 2011/09/09

Golder Associates Ltd
Client Project #: 1011210202

Sampler Initials: JR

Package 1	11.7°C

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

GENERAL COMMENTS

Custody seal was not present on the cooler.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D7346
Report Date: 2011/09/09

Golder Associates Ltd
Client Project #: 1011210202

Sampler Initials: JR

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2606709	4-Bromofluorobenzene	2011/09/07			94	70 - 130	99	%		
2606709	4-Bromofluorobenzene DUP	2011/09/08			92	70 - 130				
2606709	D4-1,2-Dichloroethane	2011/09/07			108	70 - 130	104	%		
2606709	D4-1,2-Dichloroethane DUP	2011/09/08			108	70 - 130				
2606709	D8-Toluene	2011/09/07			100	70 - 130	103	%		
2606709	D8-Toluene DUP	2011/09/08			99	70 - 130				
2606709	Dichlorodifluoromethane (FREON 12)	2011/09/07			83	60 - 140	<0.5	ug/L	8.6	40
2606709	Dichlorodifluoromethane (FREON 12) DUP	2011/09/08			91	60 - 140				
2606709	Hexane	2011/09/07			81	70 - 130	<0.5	ug/L	8.1	40
2606709	Hexane DUP	2011/09/08			88	70 - 130				
2606709	Acetone (2-Propanone)	2011/09/07			128	60 - 140	<10	ug/L	14.9	40
2606709	Acetone (2-Propanone) DUP	2011/09/08			110	60 - 140				
2606709	Benzene	2011/09/07			87	70 - 130	<0.1	ug/L	8.0	40
2606709	Benzene DUP	2011/09/08			94	70 - 130				
2606709	Bromodichloromethane	2011/09/07			90	70 - 130	<0.1	ug/L	10.4	40
2606709	Bromodichloromethane DUP	2011/09/08			100	70 - 130				
2606709	Bromoform	2011/09/07			83	70 - 130	<0.2	ug/L	5.0	40
2606709	Bromoform DUP	2011/09/08			88	70 - 130				
2606709	Bromomethane	2011/09/07			85	60 - 140	<0.5	ug/L	25.6	40
2606709	Bromomethane DUP	2011/09/08			109	60 - 140				
2606709	Carbon Tetrachloride	2011/09/07			100	70 - 130	<0.1	ug/L	9.4	40
2606709	Carbon Tetrachloride DUP	2011/09/08			110	70 - 130				
2606709	Chlorobenzene	2011/09/07			81	70 - 130	<0.1	ug/L	11.1	40
2606709	Chlorobenzene DUP	2011/09/08			91	70 - 130				
2606709	Chloroform	2011/09/07			89	70 - 130	<0.1	ug/L	13.0	40
2606709	Chloroform DUP	2011/09/08			102	70 - 130				
2606709	Dibromochloromethane	2011/09/07			85	70 - 130	<0.2	ug/L	8.5	40
2606709	Dibromochloromethane DUP	2011/09/08			93	70 - 130				
2606709	1,2-Dichlorobenzene	2011/09/07			82	70 - 130	<0.2	ug/L	12.2	40
2606709	1,2-Dichlorobenzene DUP	2011/09/08			93	70 - 130				
2606709	1,3-Dichlorobenzene	2011/09/07			85	70 - 130	<0.2	ug/L	8.0	40
2606709	1,3-Dichlorobenzene DUP	2011/09/08			92	70 - 130				
2606709	1,4-Dichlorobenzene	2011/09/07			84	70 - 130	<0.2	ug/L	15.7	40
2606709	1,4-Dichlorobenzene DUP	2011/09/08			99	70 - 130				
2606709	1,1-Dichloroethane	2011/09/07			91	70 - 130	<0.1	ug/L	13.3	40
2606709	1,1-Dichloroethane DUP	2011/09/08			104	70 - 130				
2606709	1,2-Dichloroethane	2011/09/07			89	70 - 130	<0.2	ug/L	12.3	40
2606709	1,2-Dichloroethane DUP	2011/09/08			101	70 - 130				
2606709	1,1-Dichloroethylene	2011/09/07			82	70 - 130	<0.1	ug/L	41.3(1)	40
2606709	1,1-Dichloroethylene DUP	2011/09/08			124	70 - 130				

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1D7346
Report Date: 2011/09/09

Golder Associates Ltd
Client Project #: 1011210202

Sampler Initials: JR

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2606709	cis-1,2-Dichloroethylene	2011/09/07			86	70 - 130	<0.1	ug/L	10.5	40
2606709	cis-1,2-Dichloroethylene DUP	2011/09/08			95	70 - 130				
2606709	trans-1,2-Dichloroethylene	2011/09/07			87	70 - 130	<0.1	ug/L	11.6	40
2606709	trans-1,2-Dichloroethylene DUP	2011/09/08			98	70 - 130				
2606709	1,2-Dichloropropane	2011/09/07			90	70 - 130	<0.1	ug/L	10.3	40
2606709	1,2-Dichloropropane DUP	2011/09/08			100	70 - 130				
2606709	cis-1,3-Dichloropropene	2011/09/07			86	70 - 130	<0.2	ug/L	7.5	40
2606709	cis-1,3-Dichloropropene DUP	2011/09/08			93	70 - 130				
2606709	trans-1,3-Dichloropropene	2011/09/07			91	70 - 130	<0.2	ug/L	9.0	40
2606709	trans-1,3-Dichloropropene DUP	2011/09/08			97	70 - 130				
2606709	Ethylbenzene	2011/09/07			95	70 - 130	<0.1	ug/L	12.5	40
2606709	Ethylbenzene DUP	2011/09/08			108	70 - 130				
2606709	Ethylene Dibromide	2011/09/07			84	70 - 130	<0.2	ug/L	10.1	40
2606709	Ethylene Dibromide DUP	2011/09/08			92	70 - 130				
2606709	Methylene Chloride(Dichloromethane)	2011/09/07			94	70 - 130	<0.5	ug/L	12.3	40
2606709	Methylene Chloride(Dichloromethane) DUP	2011/09/08			107	70 - 130				
2606709	Methyl Isobutyl Ketone	2011/09/07			88	70 - 130	<5	ug/L	9.8	40
2606709	Methyl Isobutyl Ketone DUP	2011/09/08			97	70 - 130				
2606709	Methyl Ethyl Ketone (2-Butanone)	2011/09/07			89	60 - 140	<5	ug/L	10.2	40
2606709	Methyl Ethyl Ketone (2-Butanone) DUP	2011/09/08			99	60 - 140				
2606709	Methyl t-butyl ether (MTBE)	2011/09/07			82	70 - 130	<0.2	ug/L	11.0	40
2606709	Methyl t-butyl ether (MTBE) DUP	2011/09/08			92	70 - 130				
2606709	Styrene	2011/09/07			85	70 - 130	<0.2	ug/L	9.1	40
2606709	Styrene DUP	2011/09/08			93	70 - 130				
2606709	1,1,1,2-Tetrachloroethane	2011/09/07			87	70 - 130	<0.1	ug/L	10.6	40
2606709	1,1,1,2-Tetrachloroethane DUP	2011/09/08			97	70 - 130				
2606709	1,1,2,2-Tetrachloroethane	2011/09/07			75	70 - 130	<0.2	ug/L	6.5	40
2606709	1,1,2,2-Tetrachloroethane DUP	2011/09/08			80	70 - 130				
2606709	Tetrachloroethylene	2011/09/07			82	70 - 130	<0.1	ug/L	11.4	40
2606709	Tetrachloroethylene DUP	2011/09/08			92	70 - 130				
2606709	Toluene	2011/09/07			83	70 - 130	<0.2	ug/L	12.2	40
2606709	Toluene DUP	2011/09/08			94	70 - 130				
2606709	1,1,1-Trichloroethane	2011/09/07			91	70 - 130	<0.1	ug/L	9.6	40
2606709	1,1,1-Trichloroethane DUP	2011/09/08			101	70 - 130				
2606709	1,1,2-Trichloroethane	2011/09/07			83	70 - 130	<0.2	ug/L	11.6	40
2606709	1,1,2-Trichloroethane DUP	2011/09/08			93	70 - 130				
2606709	Trichloroethylene	2011/09/07			89	70 - 130	<0.1	ug/L	7.7	40
2606709	Trichloroethylene DUP	2011/09/08			97	70 - 130				
2606709	Vinyl Chloride	2011/09/07			81	70 - 130	<0.2	ug/L	10.7	40
2606709	p+m-Xylene	2011/09/07			82	70 - 130	<0.1	ug/L	11.4	40

Maxxam Job #: B1D7346
Report Date: 2011/09/09

Golder Associates Ltd
Client Project #: 1011210202

Sampler Initials: JR

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2606709	p+m-Xylene DUP	2011/09/08			92	70 - 130				
2606709	o-Xylene	2011/09/07			99	70 - 130	<0.1	ug/L	7.7	40
2606709	o-Xylene DUP	2011/09/08			107	70 - 130				
2606709	Xylene (Total)	2011/09/07					<0.1	ug/L		
2606789	o-Terphenyl	2011/09/08	89	30 - 130	114	30 - 130	114	%		
2606789	F2 (C10-C16 Hydrocarbons)	2011/09/08	73	60 - 130	93	60 - 130	<100	ug/L	NC	50
2606789	F3 (C16-C34 Hydrocarbons)	2011/09/08	73	60 - 130	93	60 - 130	<100	ug/L	NC	50
2606789	F4 (C34-C50 Hydrocarbons)	2011/09/08	73	60 - 130	93	60 - 130	<100	ug/L	NC	50
2607881	1,4-Difluorobenzene	2011/09/08	97	70 - 130	97	70 - 130	123	%		
2607881	4-Bromofluorobenzene	2011/09/08	106	70 - 130	94	70 - 130	103	%		
2607881	D10-Ethylbenzene	2011/09/08	108	70 - 130	101	70 - 130	101	%		
2607881	D4-1,2-Dichloroethane	2011/09/08	107	70 - 130	90	70 - 130	105	%		
2607881	F1 (C6-C10)	2011/09/08	93	70 - 130	93	70 - 130	<25	ug/L	NC	40
2607881	F1 (C6-C10) - BTEX	2011/09/08					<25	ug/L	NC	40

N/A = Not Applicable
RPD = Relative Percent Difference
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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B1D7346

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

PAUL RUBINATO, Analyst, Maxxam Analytics

STEVE ROBERTS, Lab Supervisor, Ottawa

==========

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 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam 6740 Campobello Road, Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

38321 Page 1 of 1

INVOICE INFORMATION	REPORT INFORMATION (if differs from invoice)	PROJECT INFORMATION	MAXXAM JOB NUMBER
Company Name: Golder Associates	Company Name:	Quotation #:	
Contact Name: Sally Sullivan	Contact Name:	P.O. #:	CHAIN OF CUSTODY #
Address: 32 Steacie dr Kanata On	Address:	Project #: 1011210207	00
Phone: 613-592-9600 Fax:	Phone: Fax:	Project Name:	
Email:	Email:	Location:	
		Sampled By: Joya Rombouts	

REGULATORY CRITERIA

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

- ☐ MISA
- ☐ PWQO
- ☐ Reg. 558
- Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6
- ☐ Residential / Parkland ☐ Industrial / Commercial ☐ Medium / Fine ☐ Coarse
- Sewer Use: ☐ Sanitary ☐ Storm
- Municipality:

Other (specify): Report Criteria on C of A? ☐

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

ANALYSIS REQUESTED (Please be specific)

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT: ☐ 5 to 7 Working Days

Rush TAT: Rush Confirmation #: (call Lab for #)

☒ 1 day ☐ 2 days ☐ 3 days

DATE Required: Friday Sept 9th, 2011

TIME Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water? (Y / N)	Metals Field Filtered? (Y / N)	VOC's Btex F1-F4	# of Cont.	COMMENTS / TAT COMMENTS
1	11-1	Sept 7, 2011		GW	N	N	✓✓	8	
2	11-2A						✓✓		
3	11-2B						✓✓		
4	11-11						✓✓		
5									
6									
7									
8									
9									
10									
11									
12									

7-Sep-11 18:15
JULIE CLEMENT
B1D7346

REC'D IN OTTAWA

No custody seals

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	# JARS USED AND NOT SUBMITTED	Laboratory Use Only
Rombouts/Joya Rombouts	Josh Freeman	2011/09/07	18:15		Temperature (°C) on Receipt 4/2/11 JF 14/11/10
	Free				

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

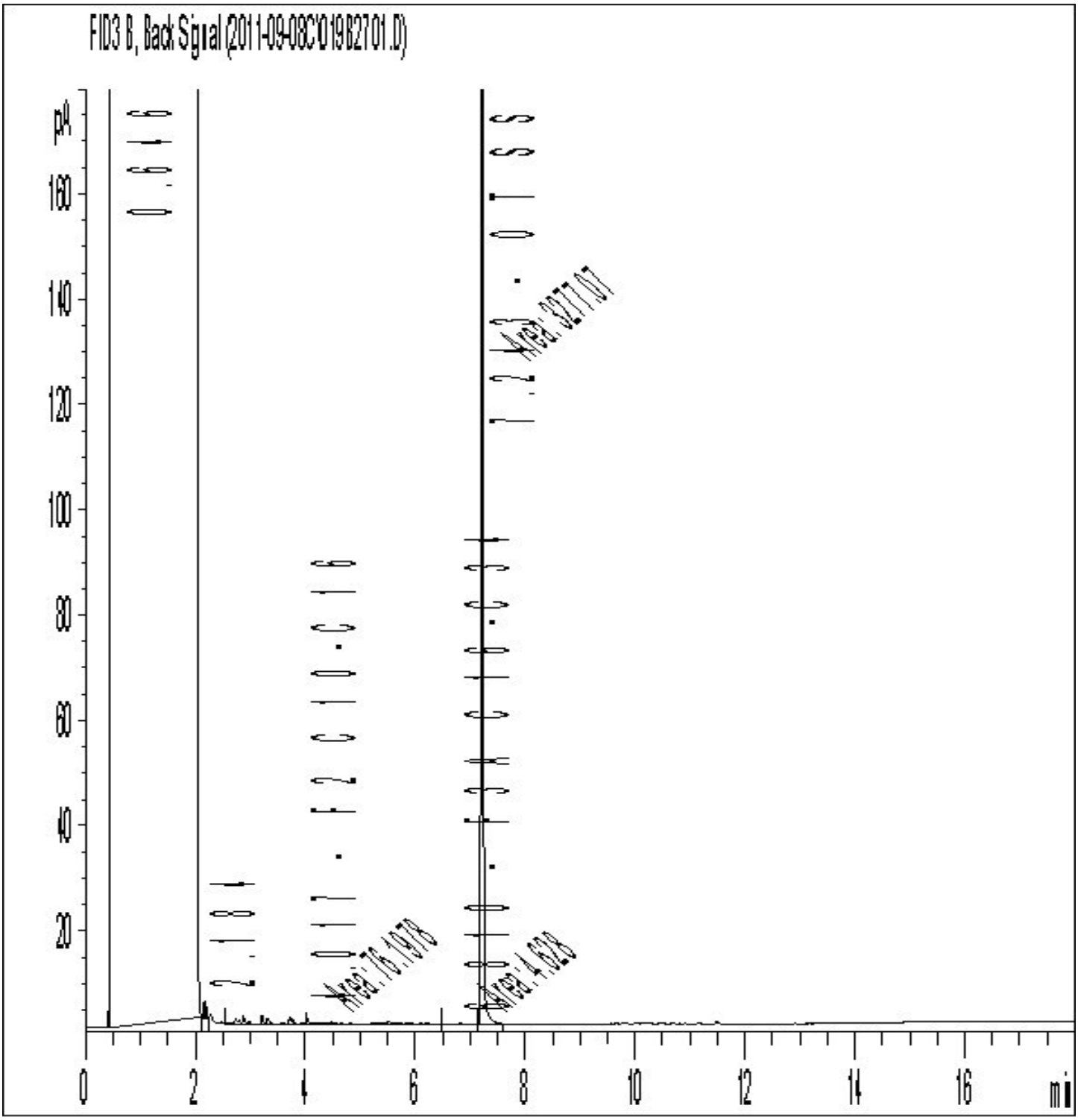
COC-1004 (03/10) - ENV. ENG.

Report Date: 2011/09/09
Maxxam Job #: B1D7346
Maxxam Sample: KU6609

Golder Associates Ltd
Client Project #: 1011210202

Client ID: 11-1

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.

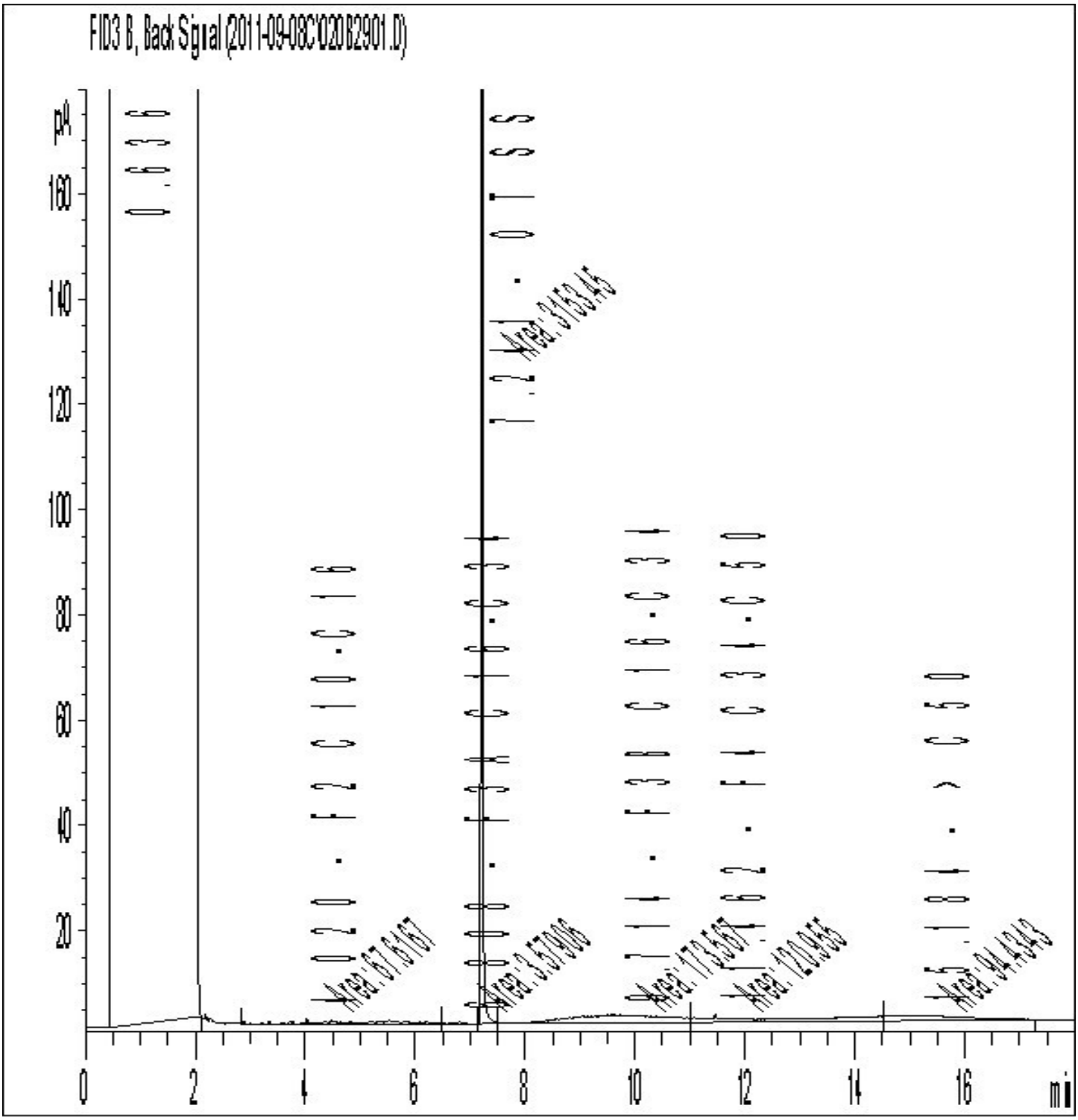
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/09
Maxxam Job #: B1D7346
Maxxam Sample: KU6610

Golder Associates Ltd
Client Project #: 1011210202

Client ID: 11-2A

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.

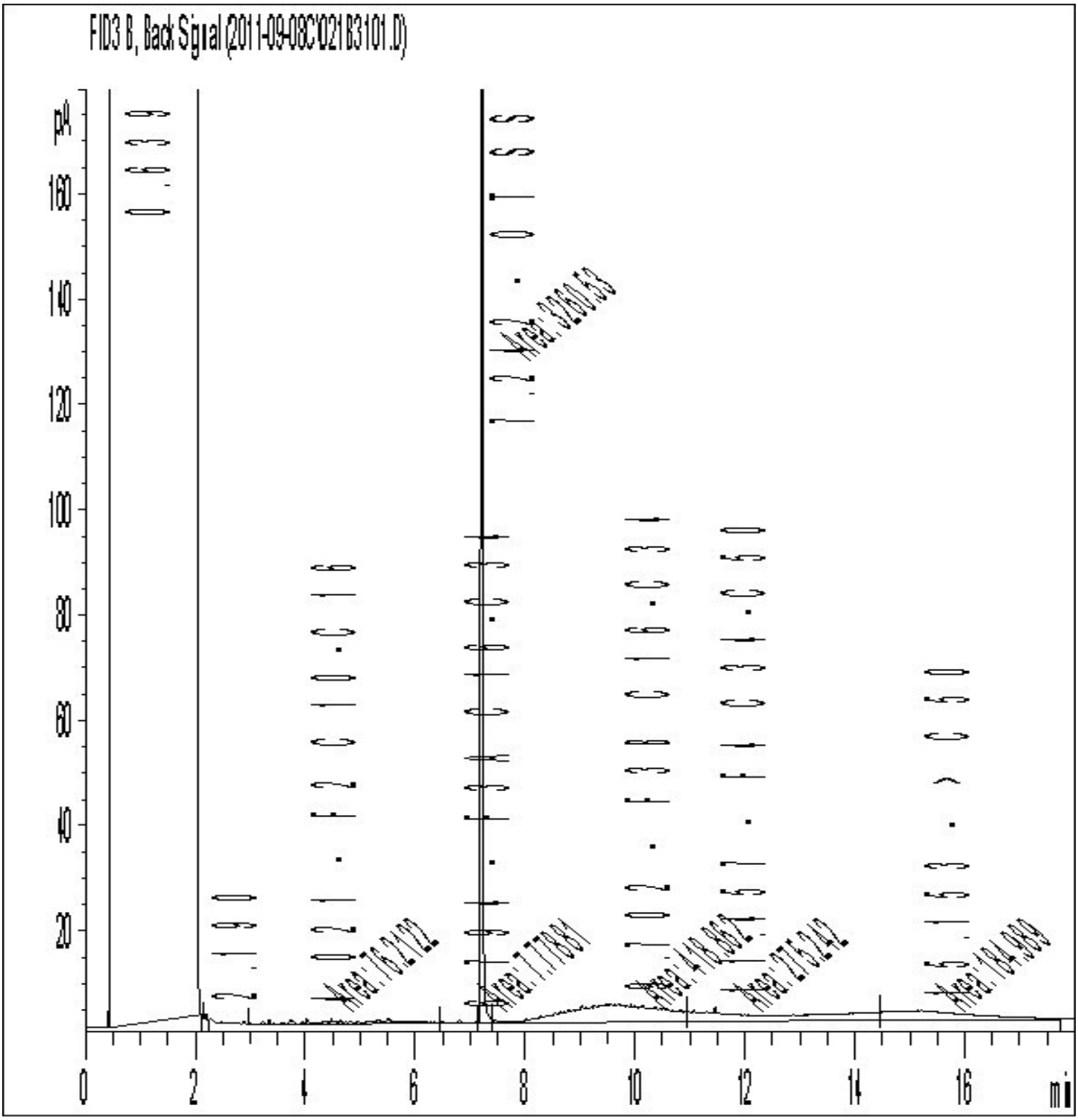
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/09
Maxxam Job #: B1D7346
Maxxam Sample: KU6611

Golder Associates Ltd
Client Project #: 1011210202

Client ID: 11-2B

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.

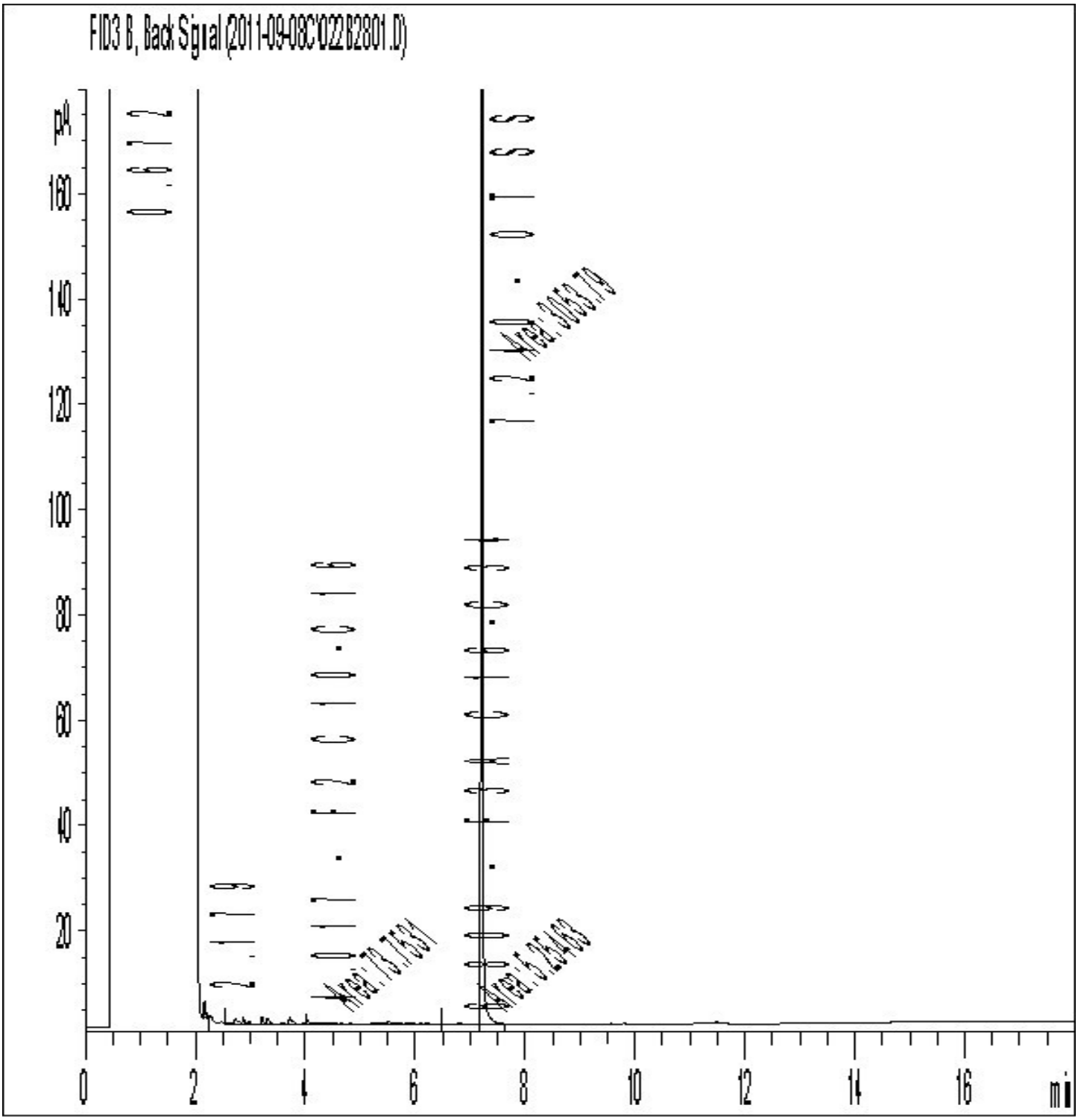
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/09
Maxxam Job #: B1D7346
Maxxam Sample: KU6612

Golder Associates Ltd
Client Project #: 1011210202

Client ID: 11-11

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 Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Success Through Science®

Your Project #: 11-1121-0202
Your C.O.C. #: E0652011

Attention: Andrea Catley
Golder Associates Ltd
32 Steacie Dr
Kanata, ON
K2K 2A9

Report Date: 2011/09/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1E6350
Received: 2011/09/22, 11:00

Sample Matrix: Soil
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Soil	9	2011/09/23	2011/09/24	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	4	2011/09/22	2011/09/22	OTT SOP-00001	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	5	2011/09/22	2011/09/23	OTT SOP-00001	CCME CWS
MOISTURE	9	N/A	2011/09/23	CAM SOP-00445	McKeague 2nd ed 1978

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.

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

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

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
Email: JClement@maxxam.ca
Phone# (613) 274-3549

==========

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: 1

Maxxam Job #: B1E6350
Report Date: 2011/09/26

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

RESULTS OF ANALYSES OF SOIL

Maxxam ID		KZ2975	KZ2976	KZ2977	KZ2978	KZ2979	KZ2980	KZ2981	KZ2982	KZ3909		
Sampling Date		2011/09/20	2011/09/20	2011/09/20	2011/09/20	2011/09/20	2011/09/21	2011/09/21	2011/09/21	2011/09/20		
	Units	**BH11-3 SA6**	**BH11-3 SA7**	**BH11-4 SA4**	**BH11-4 SA6**	**BH11-4 SA8**	**BH11-6 SA2**	**BH11-7 SA3**	**BH11-7 SA8**	**BH11-3 SA6 DUP**	**RDL**	**QC Batch**
Inorganics												
Moisture	%	22	9.9	32	17	10	45	40	10	22	0.2	2621942

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		KZ2975	KZ2976	KZ2977	KZ2978	KZ2979	KZ2980	KZ2981	KZ2982	KZ3909		
Sampling Date		2011/09/20	2011/09/20	2011/09/20	2011/09/20	2011/09/20	2011/09/21	2011/09/21	2011/09/21	2011/09/20		
	Units	**BH11-3 SA6**	**BH11-3 SA7**	**BH11-4 SA4**	**BH11-4 SA6**	**BH11-4 SA8**	**BH11-6 SA2**	**BH11-7 SA3**	**BH11-7 SA8**	**BH11-3 SA6 DUP**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons												
Benzene	ug/g	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	2624519
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	2624519
Ethylbenzene	ug/g	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	2624519
o-Xylene	ug/g	<0.02	0.03	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	0.02	2624519
p+m-Xylene	ug/g	<0.04	0.08	<0.04	<0.04	0.12	<0.04	<0.04	0.05	<0.04	0.04	2624519
Total Xylenes	ug/g	<0.04	0.11	<0.04	<0.04	0.17	<0.04	<0.04	0.05	<0.04	0.04	2624519
F1 (C6-C10)	ug/g	<10	31	<10	<10	24	<10	<10	32	<10	10	2624519
F1 (C6-C10) - BTEX	ug/g	<10	31	<10	<10	24	<10	<10	32	<10	10	2624519
F2-F4 Hydrocarbons												
F2 (C10-C16 Hydrocarbons)	ug/g	<10	20	<10	<10	10	<10	<10	<10	<10	10	2621941
F3 (C16-C34 Hydrocarbons)	ug/g	<10	22	<10	<10	<10	<10	<10	<10	<10	10	2621941
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	2621941
Reached Baseline at C50	ug/g	YES	YES	YES	YES	YES	YES	YES	YES	YES		2621941
Surrogate Recovery (%)												
1,4-Difluorobenzene	%	105	105	105	106	107	106	105	105	105		2624519
4-Bromofluorobenzene	%	84	106	79	82	100	83	76	103	81		2624519
D10-Ethylbenzene	%	87	102	90	87	98	88	85	101	83		2624519
D4-1,2-Dichloroethane	%	105	100	102	103	101	102	103	100	105		2624519
o-Terphenyl	%	67	88	88	82	85	79	78	81	87		2621941

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E6350
Report Date: 2011/09/26

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Test Summary

Maxxam ID KZ2975 **Collected** 2011/09/20
Sample ID BH11-3 SA6 **Shipped**
Matrix Soil **Received** 2011/09/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2624519	2011/09/23	2011/09/24	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2621941	2011/09/22	2011/09/22	LYNDSEY HART
MOISTURE	BAL	2621942	N/A	2011/09/23	LYNDSEY HART

Maxxam ID KZ2976 **Collected** 2011/09/20
Sample ID BH11-3 SA7 **Shipped**
Matrix Soil **Received** 2011/09/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2624519	2011/09/23	2011/09/24	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2621941	2011/09/22	2011/09/22	LYNDSEY HART
MOISTURE	BAL	2621942	N/A	2011/09/23	LYNDSEY HART

Maxxam ID KZ2977 **Collected** 2011/09/20
Sample ID BH11-4 SA4 **Shipped**
Matrix Soil **Received** 2011/09/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2624519	2011/09/23	2011/09/24	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2621941	2011/09/22	2011/09/22	LYNDSEY HART
MOISTURE	BAL	2621942	N/A	2011/09/23	LYNDSEY HART

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E6350
Report Date: 2011/09/26

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Test Summary

Maxxam ID KZ2978 **Collected** 2011/09/20
Sample ID BH11-4 SA6 **Shipped**
Matrix Soil **Received** 2011/09/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2624519	2011/09/23	2011/09/24	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2621941	2011/09/22	2011/09/22	LYNDSEY HART
MOISTURE	BAL	2621942	N/A	2011/09/23	LYNDSEY HART

Maxxam ID KZ2979 **Collected** 2011/09/20
Sample ID BH11-4 SA8 **Shipped**
Matrix Soil **Received** 2011/09/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2624519	2011/09/23	2011/09/24	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2621941	2011/09/22	2011/09/23	LYNDSEY HART
MOISTURE	BAL	2621942	N/A	2011/09/23	LYNDSEY HART

Maxxam ID KZ2980 **Collected** 2011/09/21
Sample ID BH11-6 SA2 **Shipped**
Matrix Soil **Received** 2011/09/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2624519	2011/09/23	2011/09/24	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2621941	2011/09/22	2011/09/23	LYNDSEY HART
MOISTURE	BAL	2621942	N/A	2011/09/23	LYNDSEY HART

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E6350
Report Date: 2011/09/26

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Test Summary

Maxxam ID KZ2981 **Collected** 2011/09/21
Sample ID BH11-7 SA3 **Shipped**
Matrix Soil **Received** 2011/09/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2624519	2011/09/23	2011/09/24	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2621941	2011/09/22	2011/09/23	LYNDSEY HART
MOISTURE	BAL	2621942	N/A	2011/09/23	LYNDSEY HART

Maxxam ID KZ2982 **Collected** 2011/09/21
Sample ID BH11-7 SA8 **Shipped**
Matrix Soil **Received** 2011/09/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2624519	2011/09/23	2011/09/24	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2621941	2011/09/22	2011/09/23	LYNDSEY HART
MOISTURE	BAL	2621942	N/A	2011/09/23	LYNDSEY HART

Maxxam ID KZ3909 **Collected** 2011/09/20
Sample ID BH11-3 SA6 DUP **Shipped**
Matrix Soil **Received** 2011/09/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2624519	2011/09/23	2011/09/24	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2621941	2011/09/22	2011/09/23	LYNDSEY HART
MOISTURE	BAL	2621942	N/A	2011/09/23	LYNDSEY HART

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E6350
Report Date: 2011/09/26

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Package 1	16.7°C

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

GENERAL COMMENTS

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E6350
Report Date: 2011/09/26

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2621941	o-Terphenyl	2011/09/22	82	30 - 130	86	30 - 130	89	%		
2621941	F2 (C10-C16 Hydrocarbons)	2011/09/22	96	50 - 130	99	70 - 130	<10	ug/g	NC	50
2621941	F3 (C16-C34 Hydrocarbons)	2011/09/22	96	50 - 130	99	70 - 130	<10	ug/g	NC	50
2621941	F4 (C34-C50 Hydrocarbons)	2011/09/22	96	50 - 130	99	70 - 130	<10	ug/g	NC	50
2621942	Moisture	2011/09/23							5.6	50
2624519	1,4-Difluorobenzene	2011/09/23	103	60 - 140	105	60 - 140	106	%		
2624519	4-Bromofluorobenzene	2011/09/23	109	60 - 140	104	60 - 140	79	%		
2624519	D10-Ethylbenzene	2011/09/23	92	30 - 130	106	30 - 130	95	%		
2624519	D4-1,2-Dichloroethane	2011/09/23	104	60 - 140	101	60 - 140	105	%		
2624519	Benzene	2011/09/23	75	60 - 140	82	60 - 140	<0.02	ug/g	NC	50
2624519	Toluene	2011/09/23	64	60 - 140	91	60 - 140	<0.02	ug/g	NC	50
2624519	Ethylbenzene	2011/09/23	90	60 - 140	93	60 - 140	<0.02	ug/g	NC	50
2624519	o-Xylene	2011/09/23	94	60 - 140	94	60 - 140	<0.02	ug/g	NC	50
2624519	p+m-Xylene	2011/09/23	84	60 - 140	90	60 - 140	<0.04	ug/g	NC	50
2624519	F1 (C6-C10)	2011/09/23	100	60 - 140	102	60 - 140	<10	ug/g		
2624519	Total Xylenes	2011/09/23					<0.04	ug/g	NC	50
2624519	F1 (C6-C10) - BTEX	2011/09/23					<10	ug/g		

N/A = Not Applicable
RPD = Relative Percent Difference
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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B1E6350

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

PAUL RUBINATO, Analyst, Maxxam Analytics

==========

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 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Analytics 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Golder Associates	Company Name:		Quotation #		
Contact Name:	Andrea Catley	Contact Name:		P.O. #:		
Address:	32 Steacie Drive, Ottawa, ON K2K 2A9	Address:		Project #:	11-1121-0202	CHAIN OF CUSTODY # :
				Project Name:		EO652011
Phone:	613-592-9600 Fax: 613-592-9601	Phone:	Fax: 613-592-9601	Location:		
Email:	acatley@golder.com	Email:		Sampled By:	Phil Hulan	

REGULATORY CRITERIA

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

- ☐ MISA
- ☐ PWQO
- ☐ Reg. 558
- Reg. 153: ☐ Table 1, ☐ Table 2, ☑ Table 3, ☐ Table 6
- ☑ Residential / Parkland, ☐ Industrial / Commercial, ☐ Medium / Fine, ☐ Coarse
- Sewer Use: ☐ Sanitary, ☐ Storm
- Municipality:
- Other (specify):
- Report Criteria on C of A ? ☐

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.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	PHCs F1-F4 and BTEX	# of Cont.	COMMENTS / TAT COMMENTS
1	BH11-3 SA6	Sept 20/11		Soil			X		Please run a duplicate on this sample
2	BH11-3 SA7	Sept 20/11		Soil			X		
3	BH11-4 SA4	Sept 20/11		Soil			X		
4	BH11-4 SA6	Sept 20/11		Soil			X		
5	BH11-4 SA8	Sept 20/11		Soil			X		
6	BH11-6 SA2	Sept 21/11		Soil			X		
7	BH11-7 SA3	Sept 21/11		Soil			X		
8	BH11-7 SA8	Sept 21/11		Soil			X		
9									
10									
11									
12									

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☐ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☑ 2 days ☐ 3 days

DATE Required:
TIME Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

22-Sep-11 11:00
JULIE CLEMENT
B1E6350

REC'D IN OTTAWA

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	# JARS USED AND NOT SUBMITTED	Laboratory Use Only
Andrea Catley	Shawn Colbert	Sept 22/11	11:00am		Temperature (°C) on Receipt 17/17/16

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

White: Maxxam Yellow: Mail Pink: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

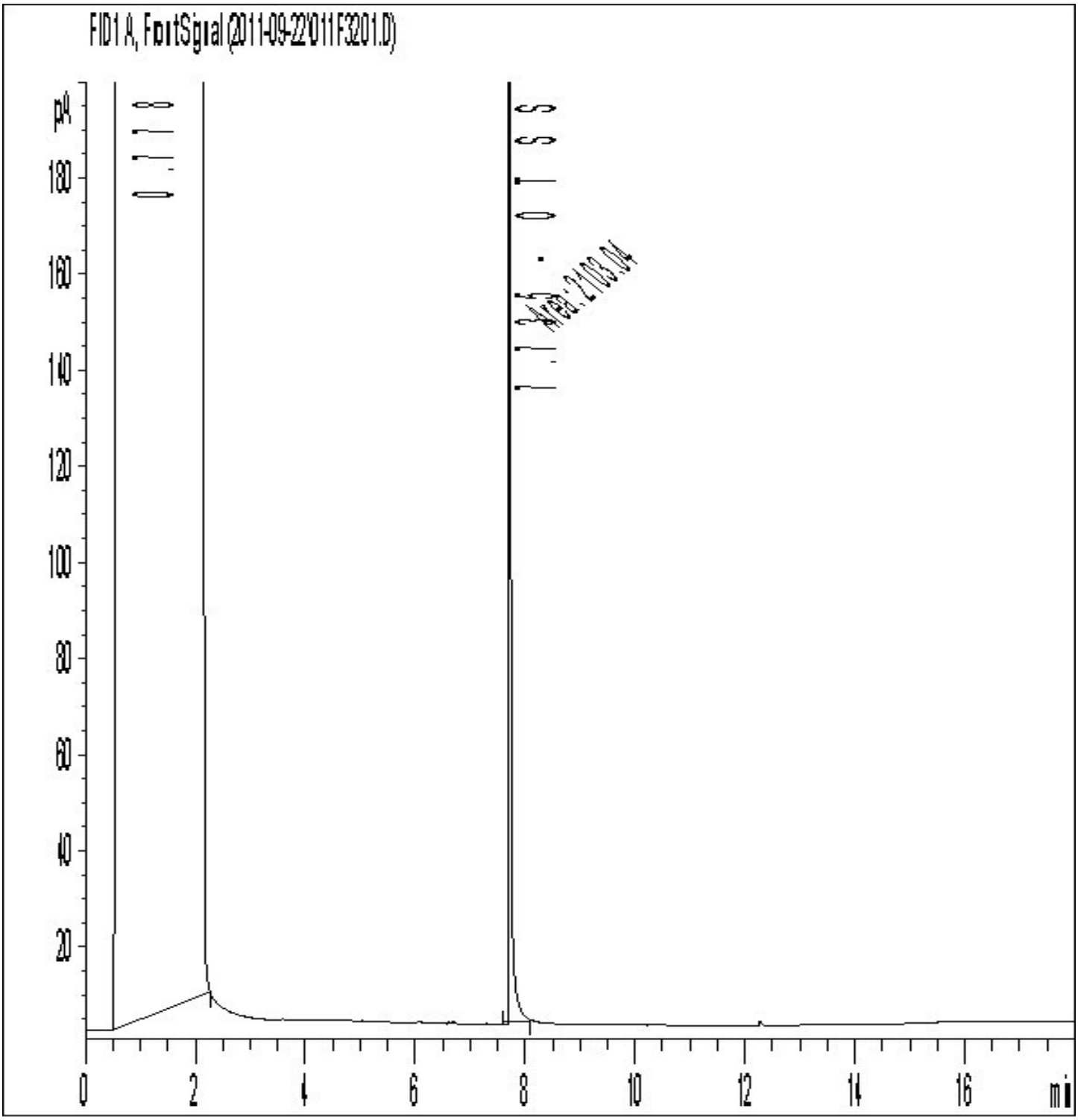
ON ICE

Report Date: 2011/09/26
Maxxam Job #: B1E6350
Maxxam Sample: KZ2975

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-3 SA6

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.

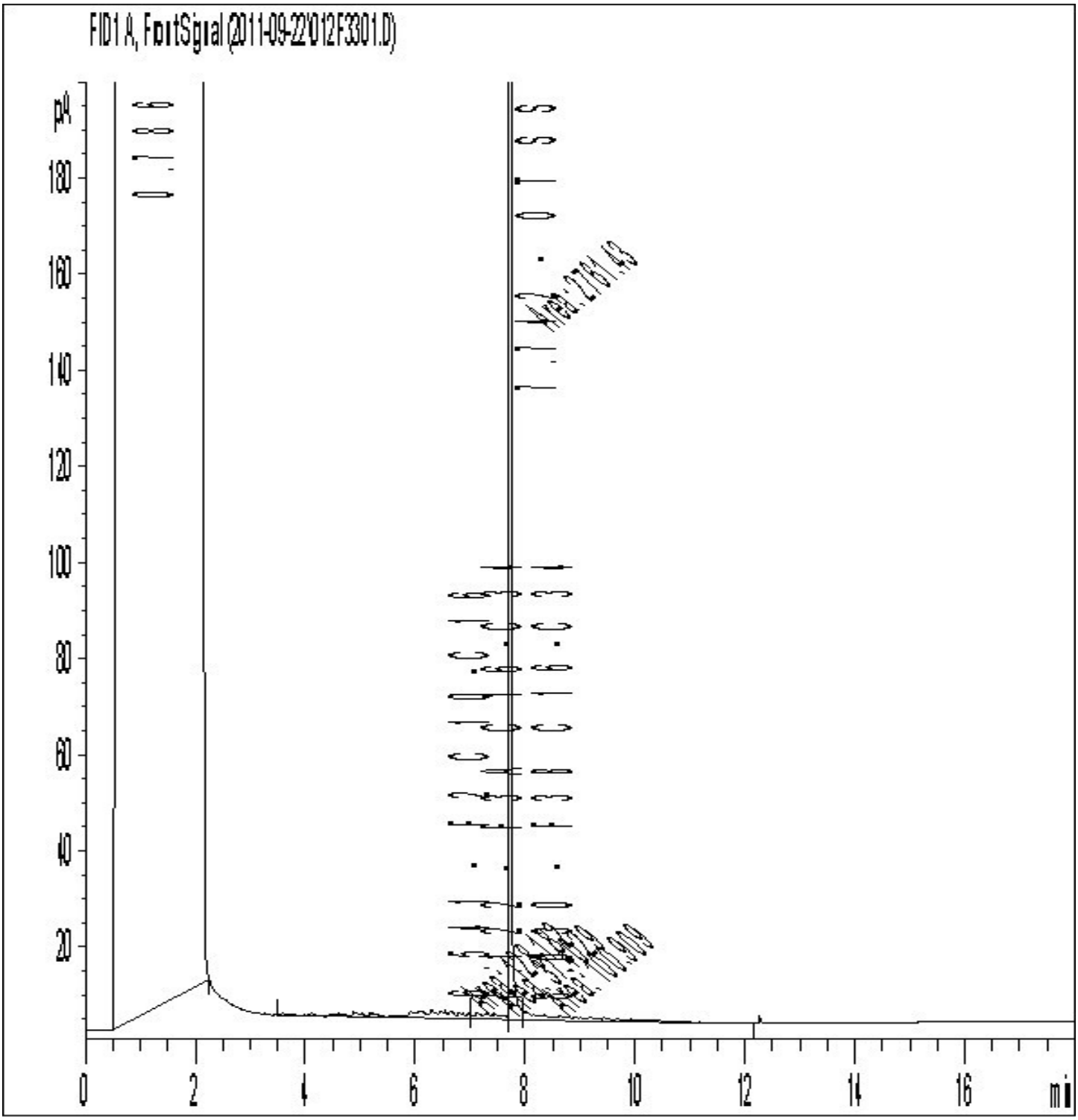
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/26
Maxxam Job #: B1E6350
Maxxam Sample: KZ2976

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-3 SA7

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.

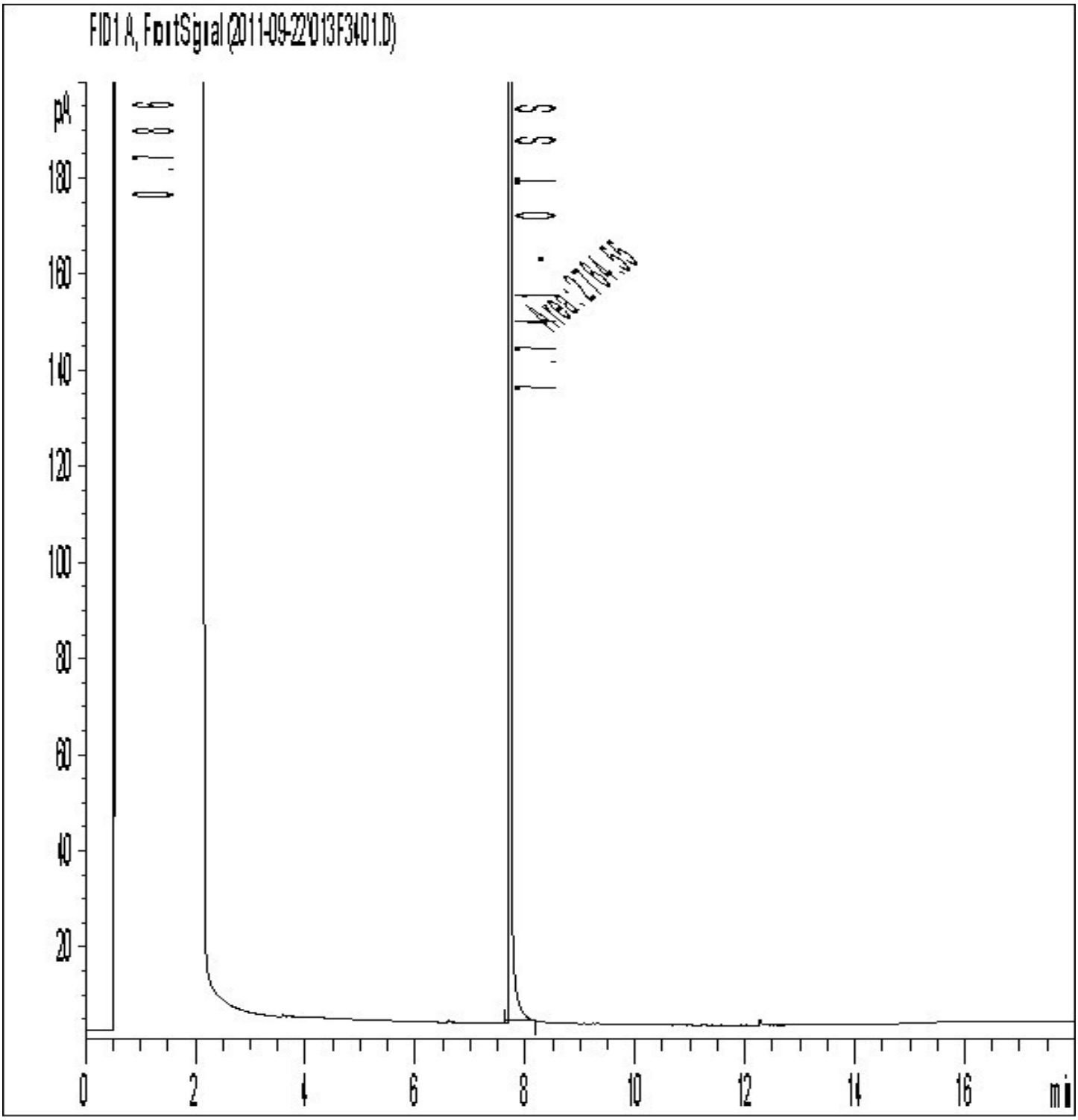
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/26
Maxxam Job #: B1E6350
Maxxam Sample: KZ2977

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-4 SA4

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.

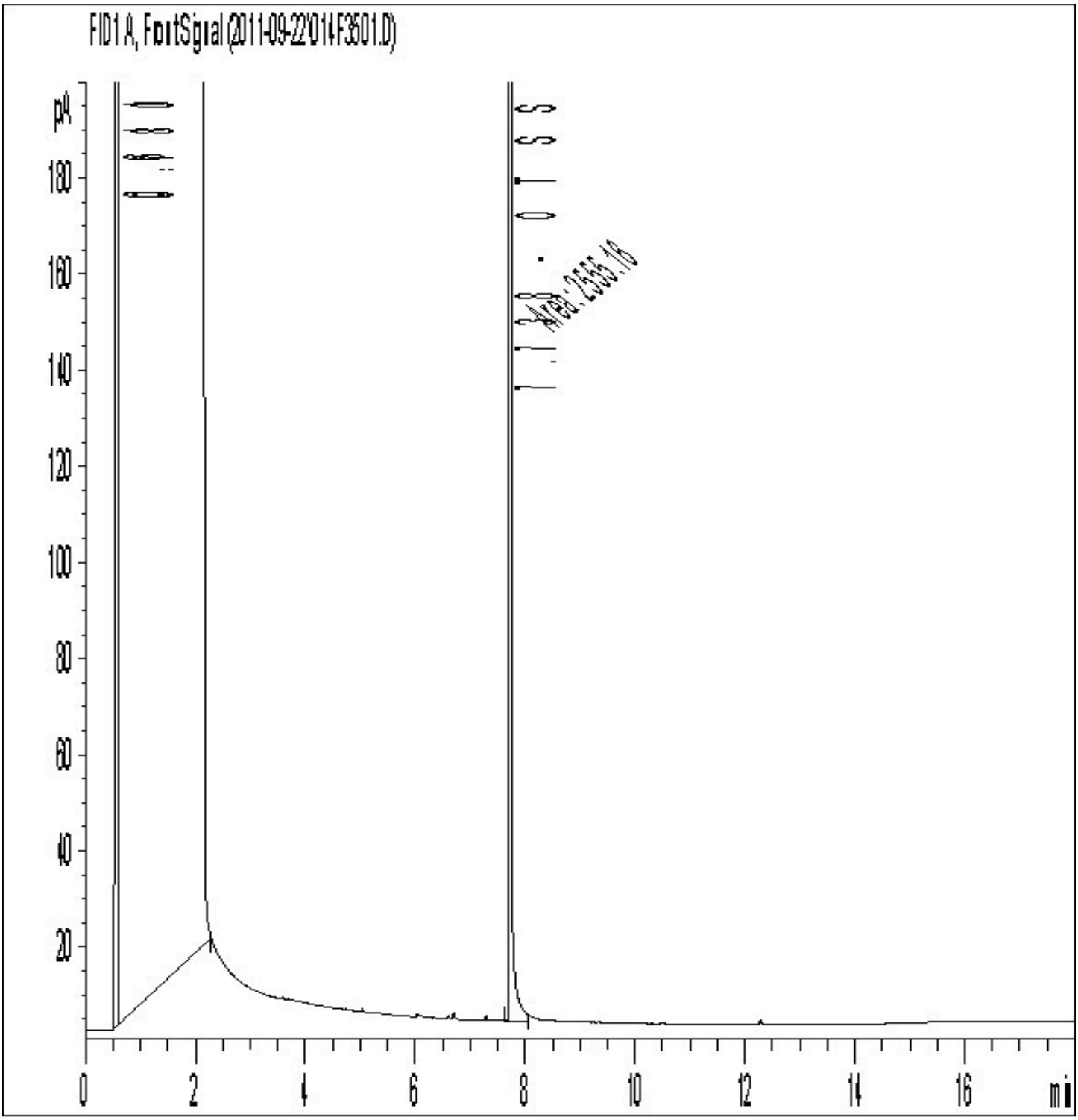
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/26
Maxxam Job #: B1E6350
Maxxam Sample: KZ2978

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-4 SA6

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.

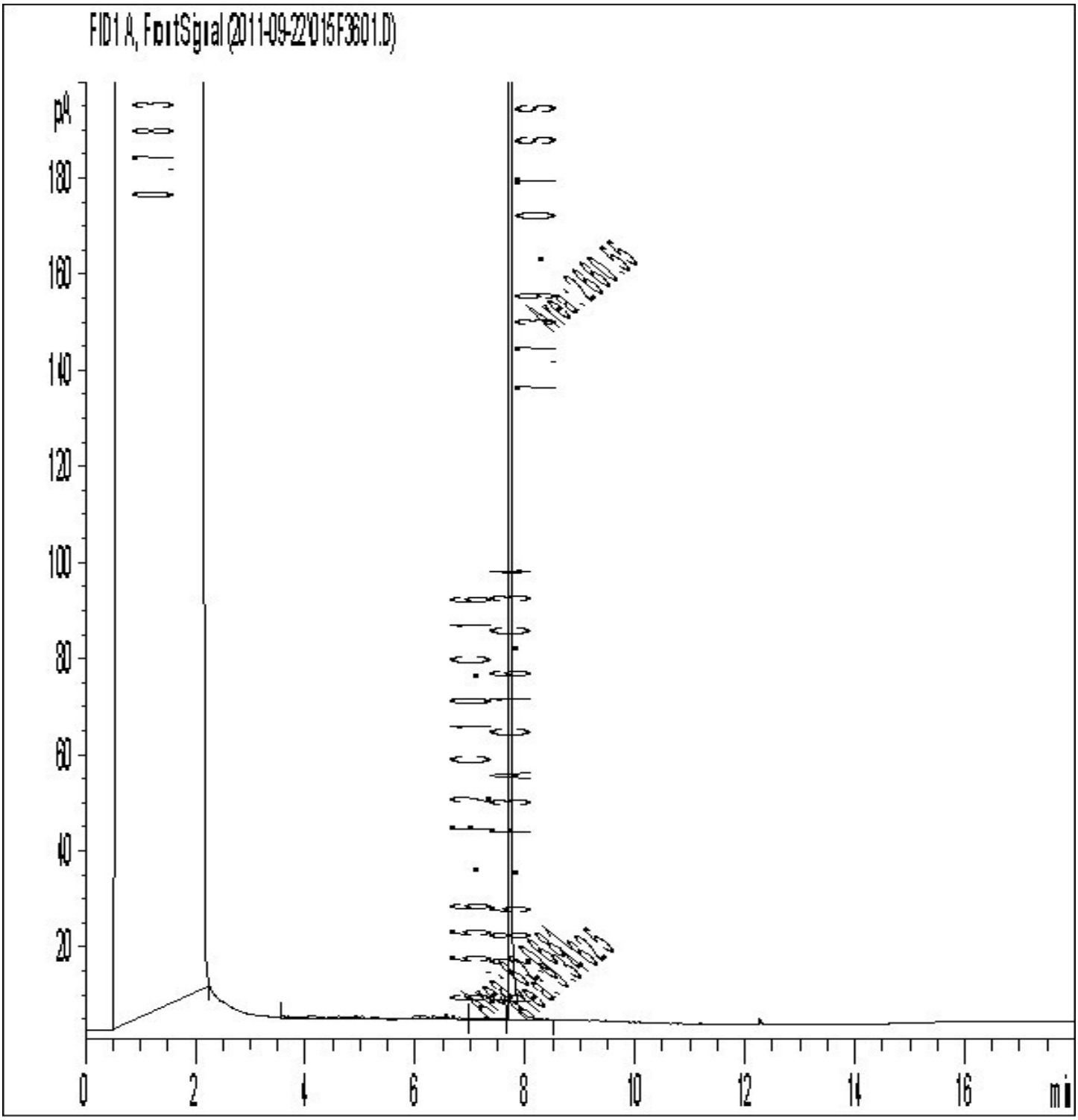
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/26
Maxxam Job #: B1E6350
Maxxam Sample: KZ2979

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-4 SA8

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.

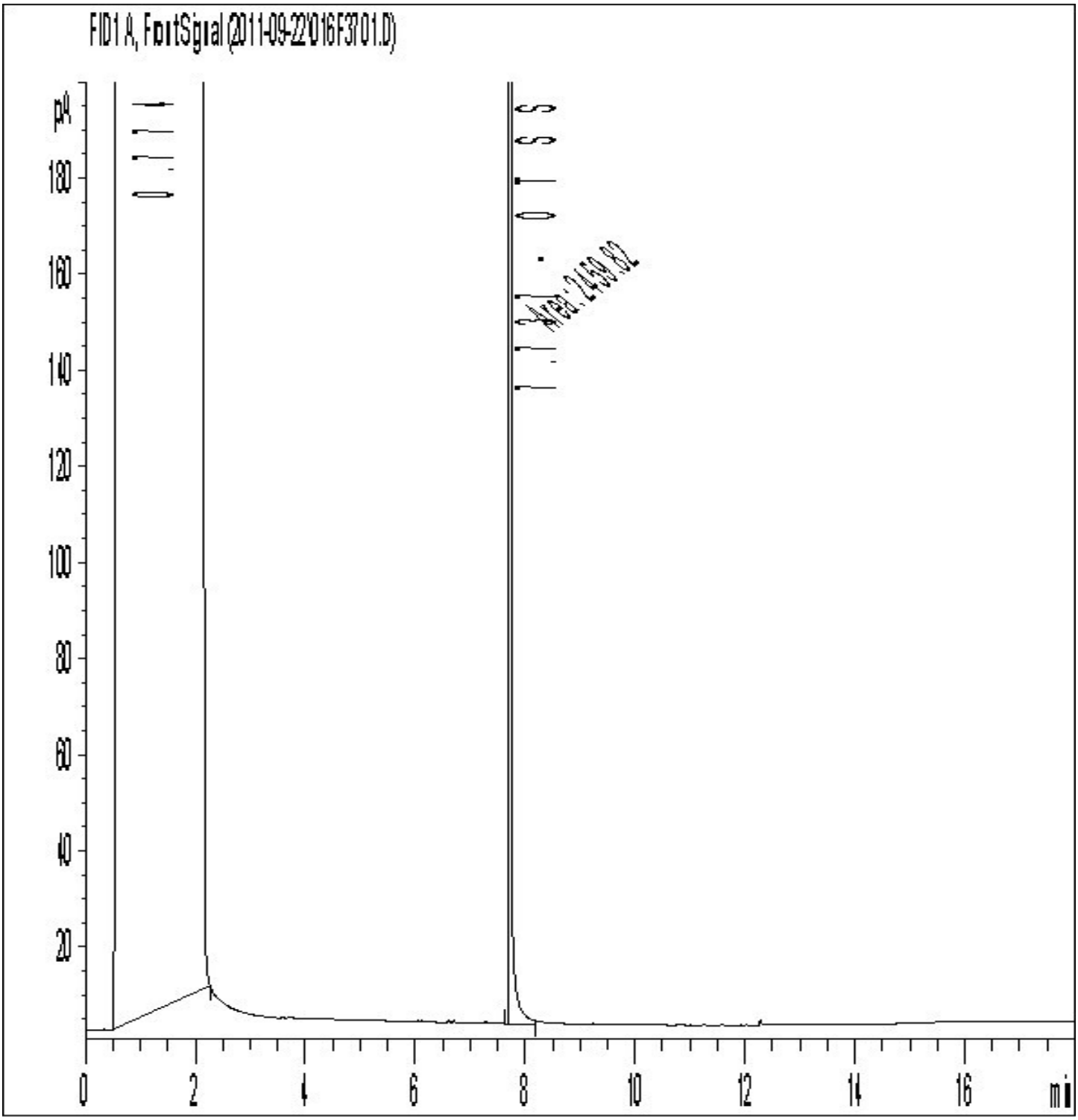
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/26
Maxxam Job #: B1E6350
Maxxam Sample: KZ2980

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-6 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.

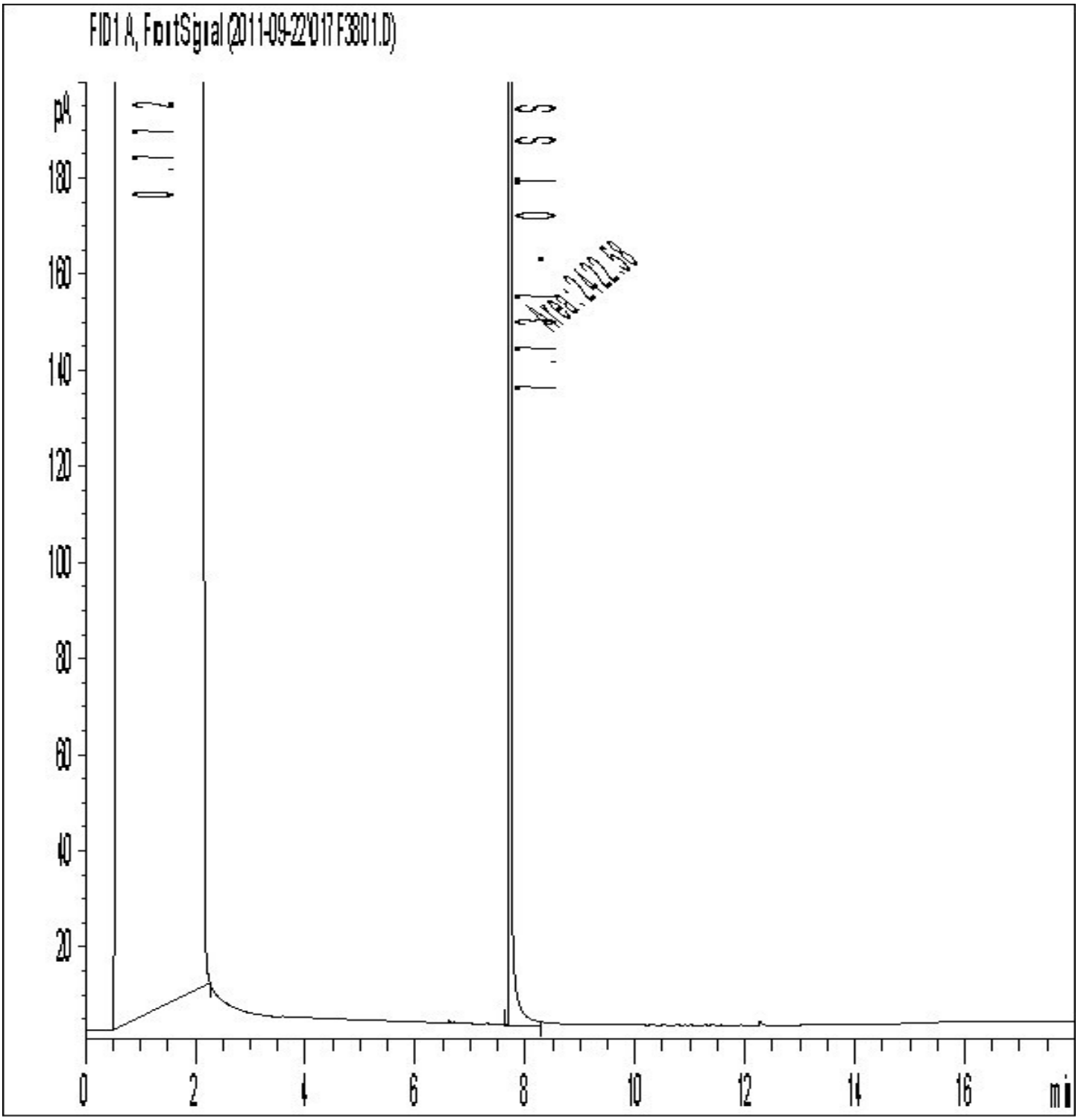
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/26
Maxxam Job #: B1E6350
Maxxam Sample: KZ2981

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-7 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.

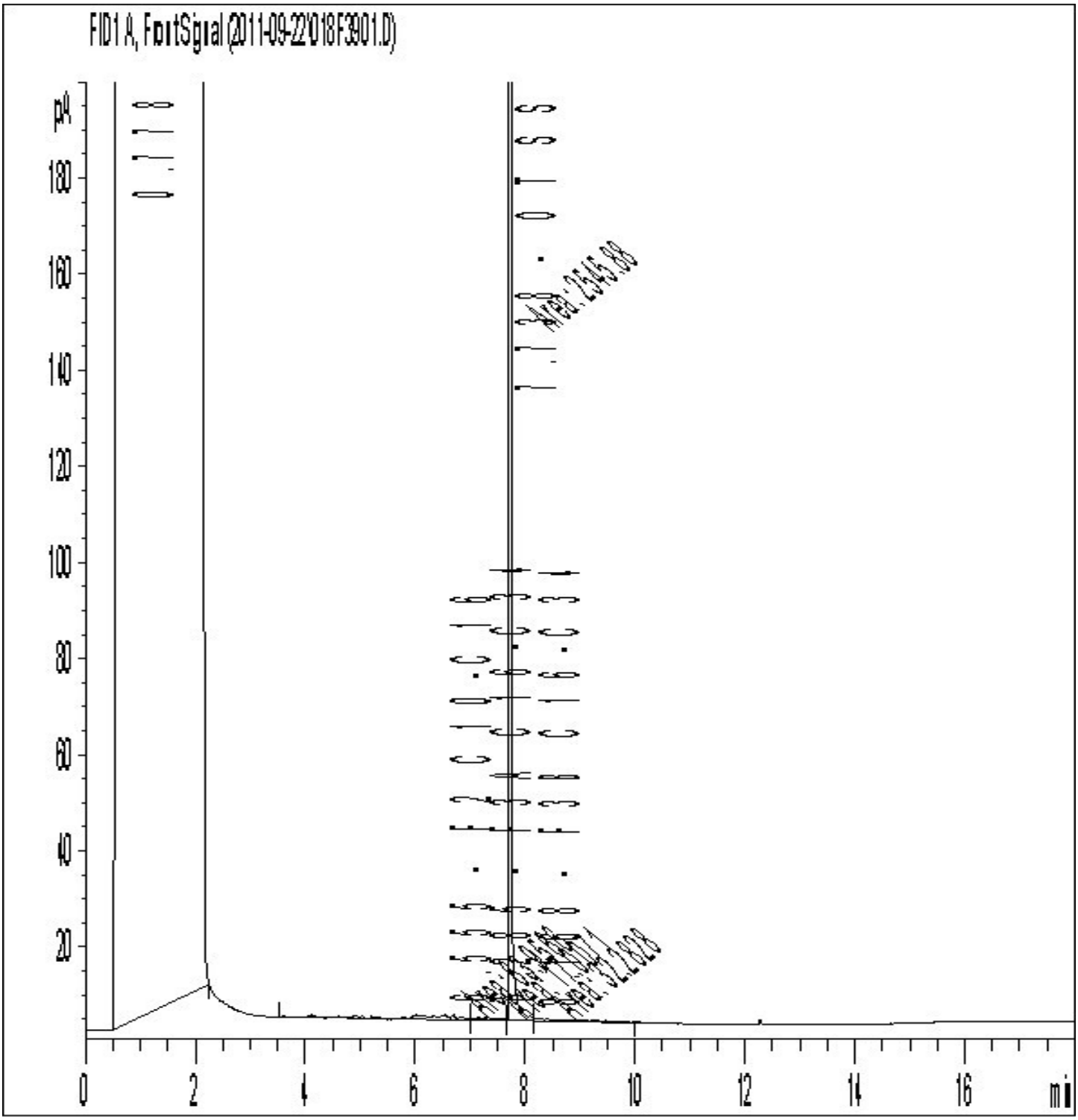
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/26
Maxxam Job #: B1E6350
Maxxam Sample: KZ2982

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-7 SA8

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.

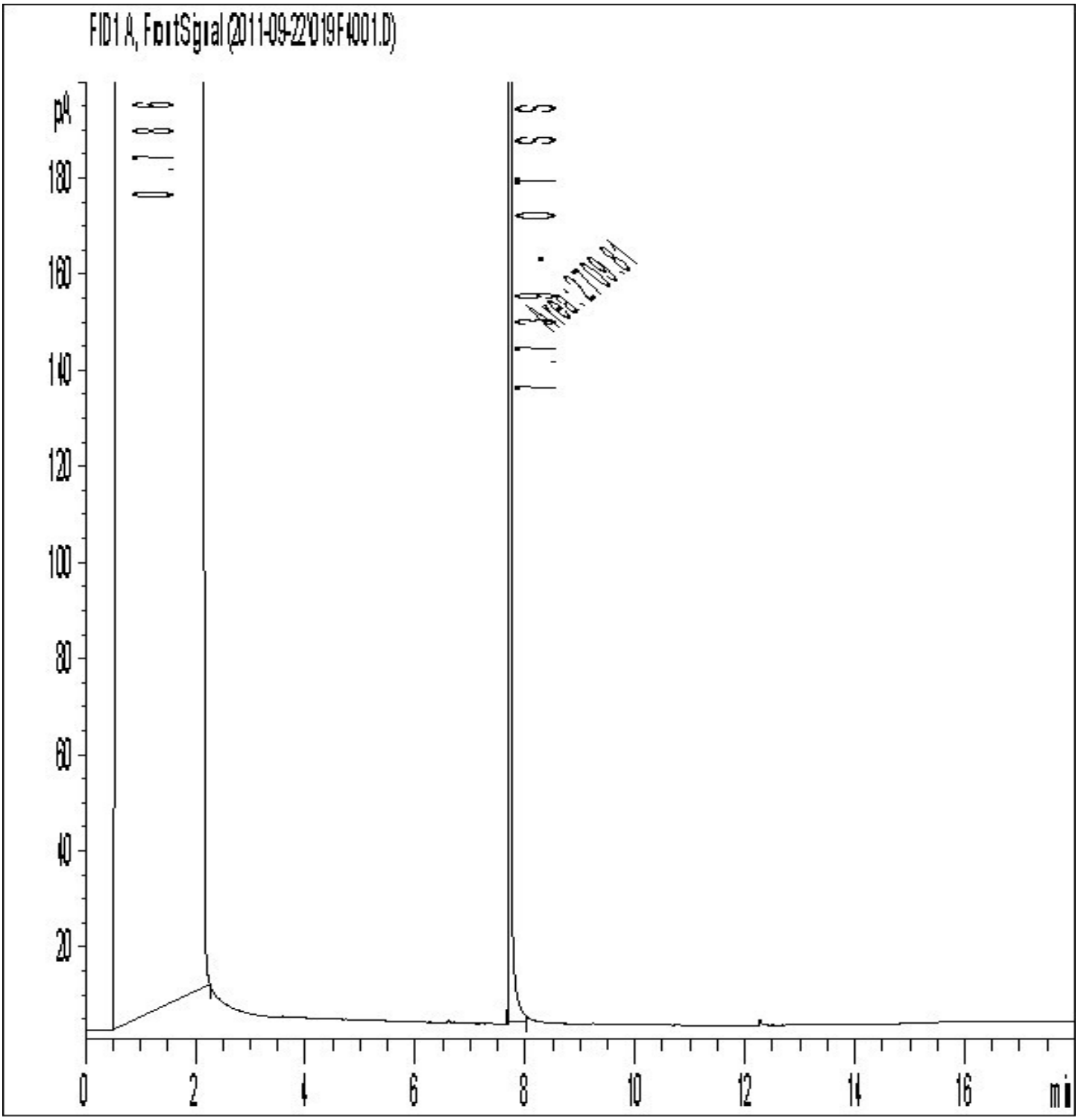
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/26
Maxxam Job #: B1E6350
Maxxam Sample: KZ3909

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-3 SA6 DUP

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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Your Project #: 11-1121-0202
Your C.O.C. #: EO652011, 38336

Attention: Andrea Catley
Golder Associates Ltd
32 Steacie Dr
Kanata, ON
K2K 2A9

Report Date: 2011/09/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1E7207
Received: 2011/09/23, 10:30

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Soil	5	2011/09/26	2011/09/26	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	5	2011/09/26	2011/09/27	OTT SOP-00001	CCME CWS
MOISTURE	5	N/A	2011/09/27	CAM SOP-00445	McKeague 2nd ed 1978

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.

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

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

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
Email: JClement@maxxam.ca
Phone# (613) 274-3549

==========

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: 1

Maxxam Job #: B1E7207
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

RESULTS OF ANALYSES OF SOIL

Maxxam ID		KZ7685	KZ7686	KZ7687	KZ7688	KZ7689		
Sampling Date		2011/09/22	2011/09/22	2011/09/22	2011/09/22	2011/09/22		
	Units	**BH11-6 SA8**	**BH11-6 SA8 DUP**	**BH11-6 SA11**	**BH11-9 SA3**	**BH11-9 SA5**	**RDL**	**QC Batch**
Inorganics								
Moisture	%	8.1	8.5	7.4	37	36	0.2	2626442

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		KZ7685	KZ7686	KZ7687	KZ7688	KZ7689		
Sampling Date		2011/09/22	2011/09/22	2011/09/22	2011/09/22	2011/09/22		
	Units	**BH11-6 SA8**	**BH11-6 SA8 DUP**	**BH11-6 SA11**	**BH11-9 SA3**	**BH11-9 SA5**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	2626650
Toluene	ug/g	0.12	0.04	0.18	<0.02	<0.02	0.02	2626650
Ethylbenzene	ug/g	0.04	<0.02	0.10	<0.02	<0.02	0.02	2626650
o-Xylene	ug/g	0.23	0.09	0.59	<0.02	<0.02	0.02	2626650
p+m-Xylene	ug/g	0.71	0.27	1.8	<0.04	<0.04	0.04	2626650
Total Xylenes	ug/g	0.94	0.37	2.4	<0.04	<0.04	0.04	2626650
F1 (C6-C10)	ug/g	55	37	200	<10	<10	10	2626650
F1 (C6-C10) - BTEX	ug/g	54	36	200	<10	<10	10	2626650
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	62	74	62	<10	<10	10	2626429
F3 (C16-C34 Hydrocarbons)	ug/g	54	63	46	<10	<10	10	2626429
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	<10	10	2626429
Reached Baseline at C50	ug/g	YES	YES	YES	YES	YES		2626429
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	104	103	108	103	104		2626650
4-Bromofluorobenzene	%	106	111	117	99	85		2626650
D10-Ethylbenzene	%	108	97	120	89	89		2626650
D4-1,2-Dichloroethane	%	96	94	93	91	101		2626650
o-Terphenyl	%	78	76	75	80	79		2626429

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E7207
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Test Summary

Maxxam ID KZ7685 **Collected** 2011/09/22
Sample ID BH11-6 SA8 **Shipped**
Matrix Soil **Received** 2011/09/23

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/26	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2626429	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2626442	N/A	2011/09/27	HABIBA ESSAK

Maxxam ID KZ7686 **Collected** 2011/09/22
Sample ID BH11-6 SA8 DUP **Shipped**
Matrix Soil **Received** 2011/09/23

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/26	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2626429	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2626442	N/A	2011/09/27	HABIBA ESSAK

Maxxam ID KZ7687 **Collected** 2011/09/22
Sample ID BH11-6 SA11 **Shipped**
Matrix Soil **Received** 2011/09/23

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/26	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2626429	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2626442	N/A	2011/09/27	HABIBA ESSAK

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E7207
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Test Summary

Maxxam ID KZ7688 **Collected** 2011/09/22
Sample ID BH11-9 SA3 **Shipped**
Matrix Soil **Received** 2011/09/23

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/26	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2626429	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2626442	N/A	2011/09/27	HABIBA ESSAK

Maxxam ID KZ7689 **Collected** 2011/09/22
Sample ID BH11-9 SA5 **Shipped**
Matrix Soil **Received** 2011/09/23

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/26	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2626429	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2626442	N/A	2011/09/27	HABIBA ESSAK

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E7207
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Package 1	16.7°C
Package 2	18.3°C

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

GENERAL COMMENTS

Custody seal was not present on the cooler.

PETROLEUM HYDROCARBONS (CCME)

Petroleum Hydro. CCME F1 & BTEX in Soil: Matrix Spiked recoveries were not calculated because of high concentration of target compounds in the parent sample.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E7207
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2626429	o-Terphenyl	2011/09/26	80	30 - 130	73	30 - 130	77	%		
2626429	F2 (C10-C16 Hydrocarbons)	2011/09/26	71	50 - 130	91	70 - 130	<10	ug/g	17.5	50
2626429	F3 (C16-C34 Hydrocarbons)	2011/09/26	71	50 - 130	91	70 - 130	<10	ug/g	10.7	50
2626429	F4 (C34-C50 Hydrocarbons)	2011/09/26	71	50 - 130	91	70 - 130	<10	ug/g	NC	50
2626442	Moisture	2011/09/27							9.0	50
2626650	1,4-Difluorobenzene	2011/09/26	102	60 - 140	103	60 - 140	104	%		
2626650	4-Bromofluorobenzene	2011/09/26	102	60 - 140	105	60 - 140	88	%		
2626650	D10-Ethylbenzene	2011/09/26	109	30 - 130	111	30 - 130	102	%		
2626650	D4-1,2-Dichloroethane	2011/09/26	99	60 - 140	97	60 - 140	108	%		
2626650	Benzene	2011/09/27	85	60 - 140	83	60 - 140	<0.02	ug/g	31.5	50
2626650	Toluene	2011/09/27	88	60 - 140	94	60 - 140	<0.02	ug/g	NC	50
2626650	Ethylbenzene	2011/09/27	85	60 - 140	95	60 - 140	<0.02	ug/g	NC	50
2626650	o-Xylene	2011/09/27	NC	60 - 140	98	60 - 140	<0.02	ug/g	NC	50
2626650	p+m-Xylene	2011/09/27	NC	60 - 140	91	60 - 140	<0.04	ug/g	NC	50
2626650	F1 (C6-C10)	2011/09/27	NC	60 - 140	70	60 - 140	<10	ug/g	NC	50
2626650	Total Xylenes	2011/09/27					<0.04	ug/g	NC	50
2626650	F1 (C6-C10) - BTEX	2011/09/27					<10	ug/g	NC	50

N/A = Not Applicable
RPD = Relative Percent Difference
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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B1E7207

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

PAUL RUBINATO, Analyst, Maxxam Analytics

==========

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 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Analytics 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Golder Associates	Company Name:		Quotation #:		
Contact Name:	Andrea Catley	Contact Name:		P.O. #:		
Address:	32 Steacie Drive, Ottawa, ON K2K 2A9	Address:		Project #:	11-1121-0202	CHAIN OF CUSTODY # :
Phone:	613-592-9600 Fax: 613-592-9601	Phone:	Fax: 613-592-9601	Project Name:		EO652011
Email:	acatley@golder.com	Email:		Location:		
				Sampled By:	Phil Hulan	

REGULATORY CRITERIA

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

☐ MISA ☐ PWQO ☐ Reg. 558

Reg. 153: ☐ Table 1 ☐ Table 2 ☑ Table 3 ☐ Table 6

☑ Residential / Parkland ☐ Industrial / Commercial ☐ Medium / Fine ☐ Coarse

Sewer Use: ☐ Sanitary ☐ Storm

Municipality:

Other (specify):

Report Criteria on C of A ? ☐

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

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	PHCs F1-F4 and BTEX	# of Cont.	COMMENTS / TAT COMMENTS
1	BH11-6 SA8	Sept 22/11		Soil			X		Please run a duplicate on this sample
2	BH11-6 SA11	Sept 22/11		Soil			X		
3	BH11-9 SA3	Sept 22/11		Soil			X		
4	BH11-9 SA5	Sept 22/11		Soil			X		
5									
6									
7									
8									
9									
10									
11									
12									

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☐ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)

☐ 1 day ☑ 2 days ☐ 3 days

DATE Required:

TIME Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

22-Sep-11 17:35
JULIE CLEMENT
B1E7207
JOF OTT-011

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
Andrea Catley	Josh Freeman	Sept 23/11	10:30
Andrea Catley		2011/09/23	

 # JARS USED AND NOT SUBMITTED

Laboratory Use Only
Temperature (°C) on Receipt: 17/17/16

ON ICE

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

White: Maxxam Yellow: Mail Pink: Client

Maxxam 6740 Campobello Road, Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

38336 Page ____ of ____

INVOICE INFORMATION	REPORT INFORMATION (if differs from invoice)	PROJECT INFORMATION	MAXXAM JOB NUMBER
Company Name: Golder Associate	Company Name:	Quotation #:	
Contact Name: Andrea Catley	Contact Name: SAME	P.O. #:	CHAIN OF CUSTODY #
Address: 32 Steacie Drive Kanata, ON K2K2A9	Address:	Project #: 11-1121-0202	00
Phone: (613) 592-9600 Fax:	Phone: Fax:	Project Name: Claridge/Upper St./OTT	
Email:	Email:	Location:	
		Sampled By: P. Hulan	

REGULATORY CRITERIA

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

- MISA
- PWQO
- Reg. 558
- Reg. 153: Table 1 / Table 2 / Table 3 / Table 6; Residential / Parkland / Industrial / Commercial / Medium / Fine / Coarse
- Sewer Use: Sanitary / Storm; Municipality: ____
- Other (specify): ____ Report Criteria on C of A? ☐

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.)	Regulated Drinking Water? (Y / N)	Metals Field Filtered? (Y / N)	# of Cont.	COMMENTS / TAT COMMENTS
1	11-9 SA1	Sept 22/11						Hold until further notice Will be contacted by Andrea Catley
2	11-9 SA2							
3	11-9 SA3							
4	11-9 SA4							
5	11-9 SA5							
6	11-9 SA7							
7	11-9 SA8							
8	11-6 SA8	Sept 22/11						
9	11-6 SA9							
10	11-6 SA10							
11	11-6 SA11							
12								

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:
☐ 5 to 7 Working Days

Rush TAT: Rush Confirmation #: ____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days

DATE Required: ____

TIME Required: ____

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

REC'D IN OTTAWA

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time
	Josh Freeman	2011/09/22	17:35

JARS USED AND NOT SUBMITTED

Laboratory Use Only
Temperature (°C) on Receipt: 19/17/19

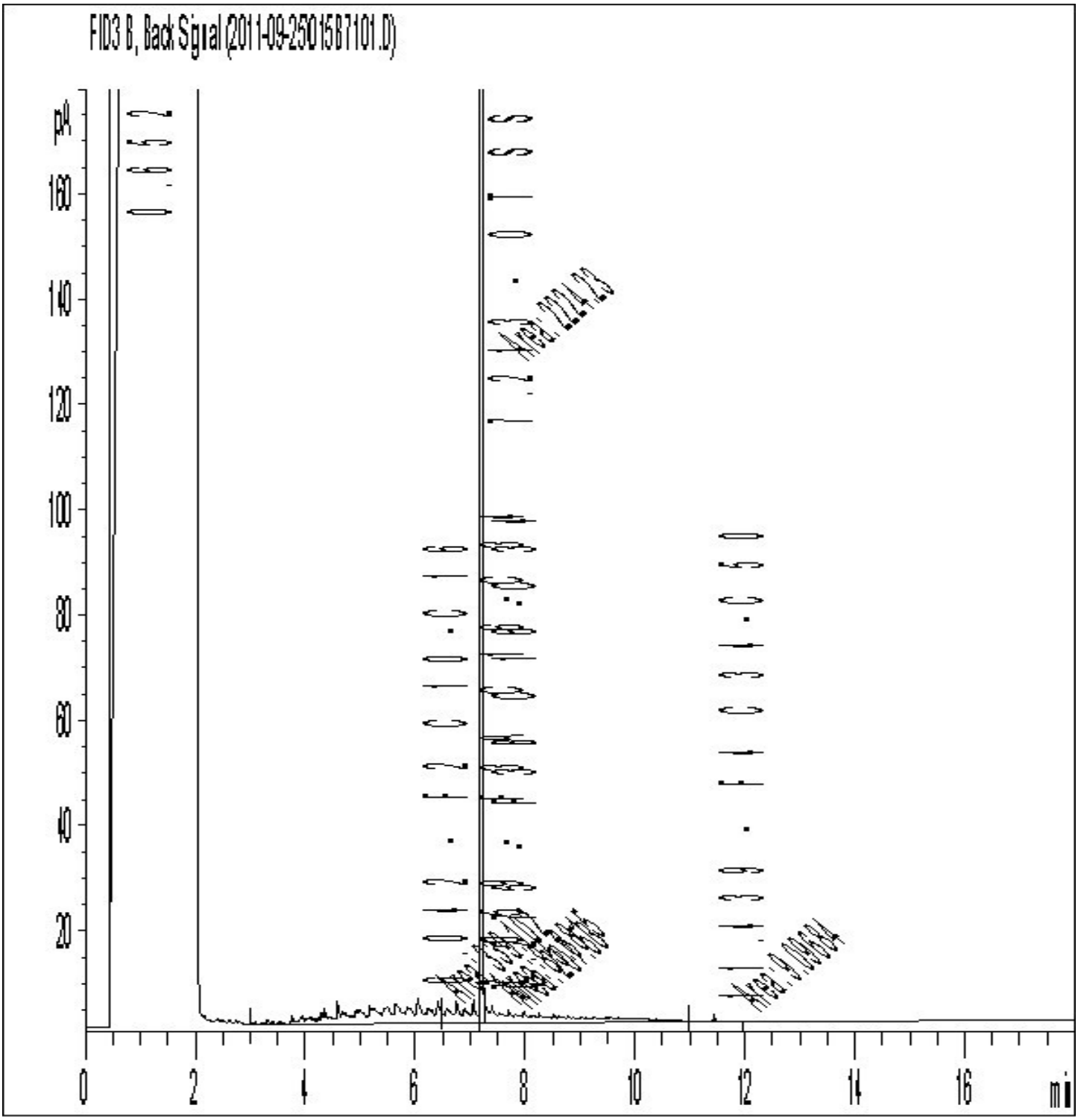
*MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS

Report Date: 2011/09/27
Maxxam Job #: B1E7207
Maxxam Sample: KZ7685

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-6 SA8

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.

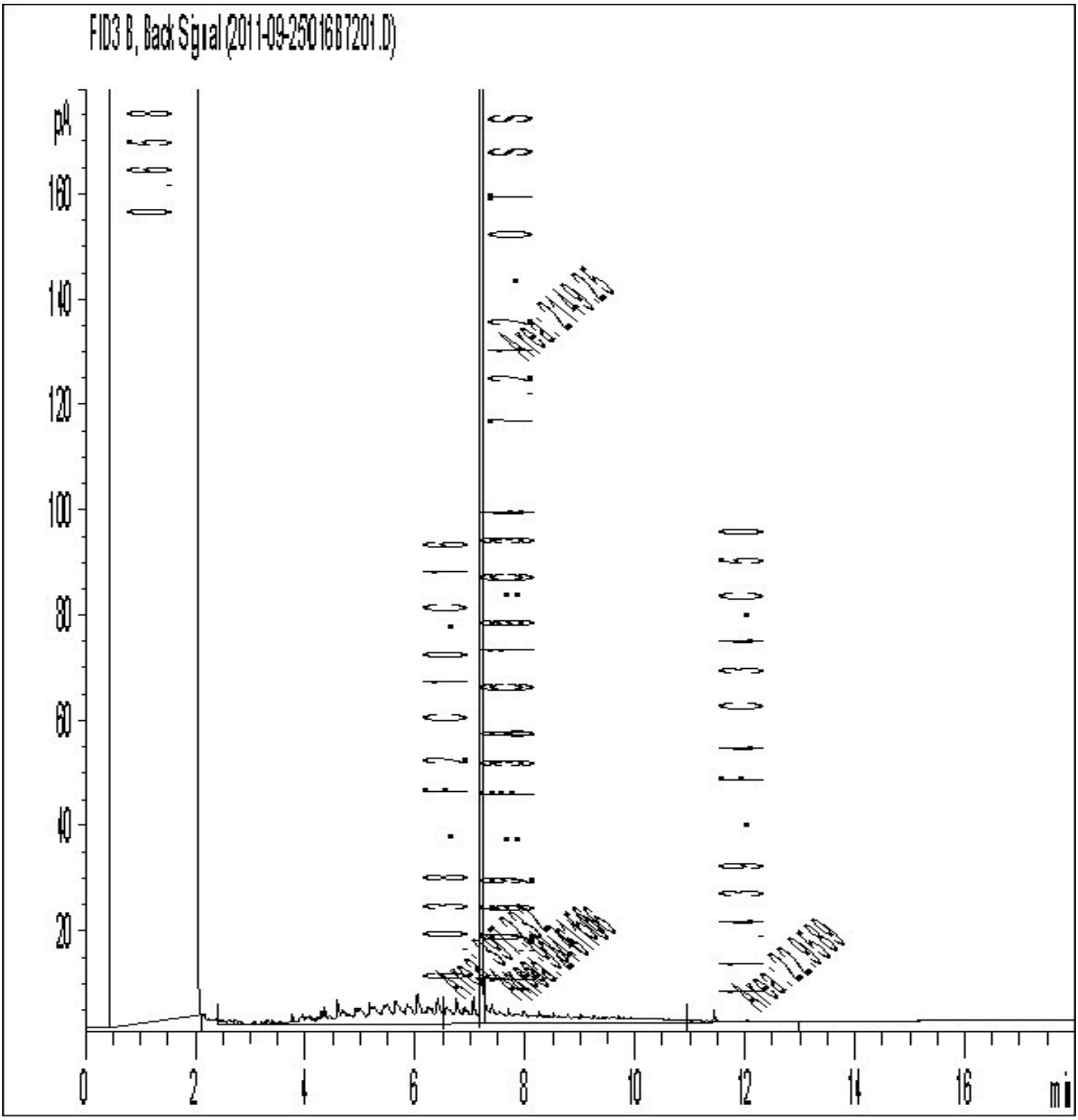
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/27
Maxxam Job #: B1E7207
Maxxam Sample: KZ7686

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-6 SA8 DUP

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



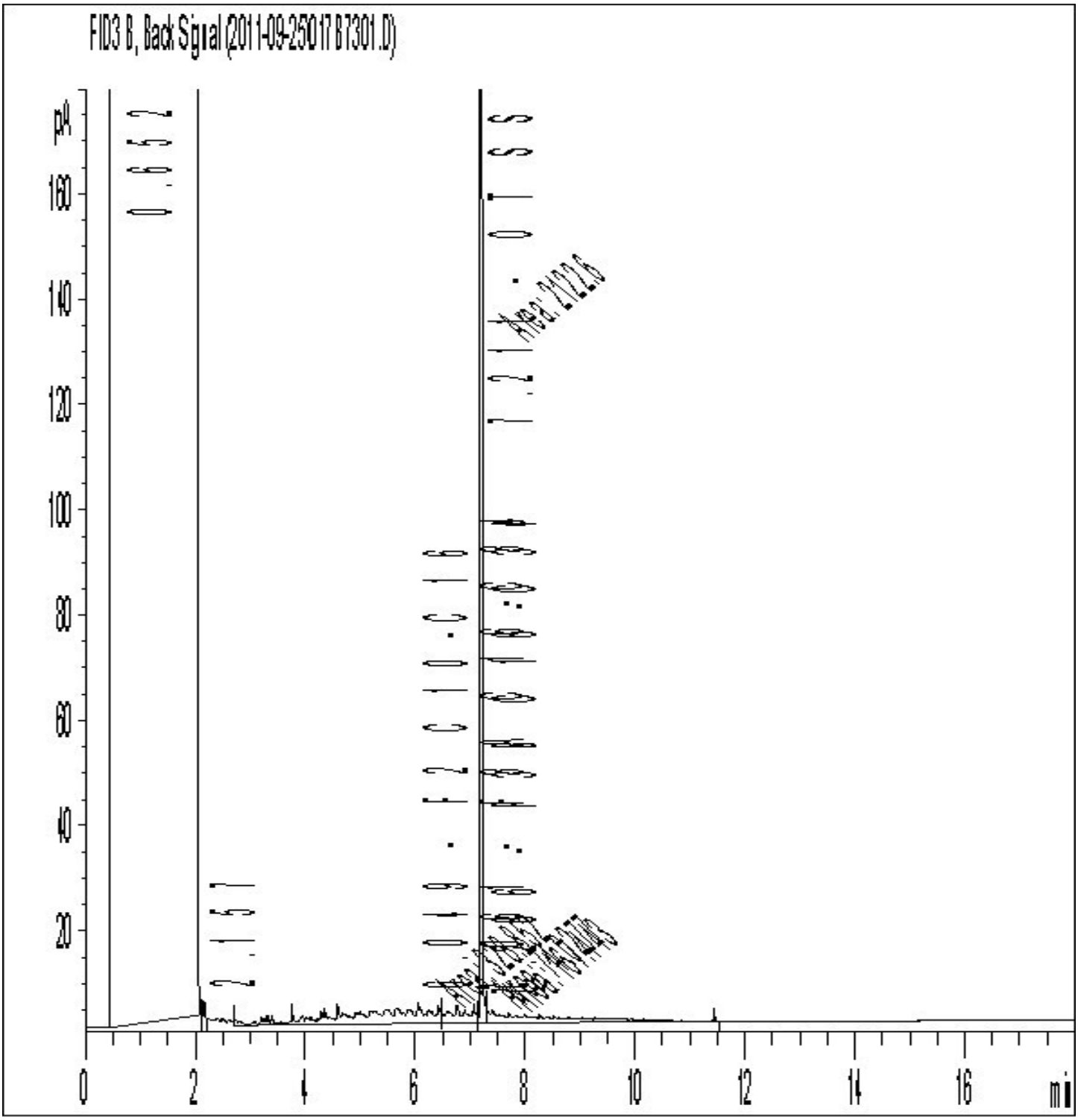
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2011/09/27
Maxxam Job #: B1E7207
Maxxam Sample: KZ7687

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-6 SA11

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.

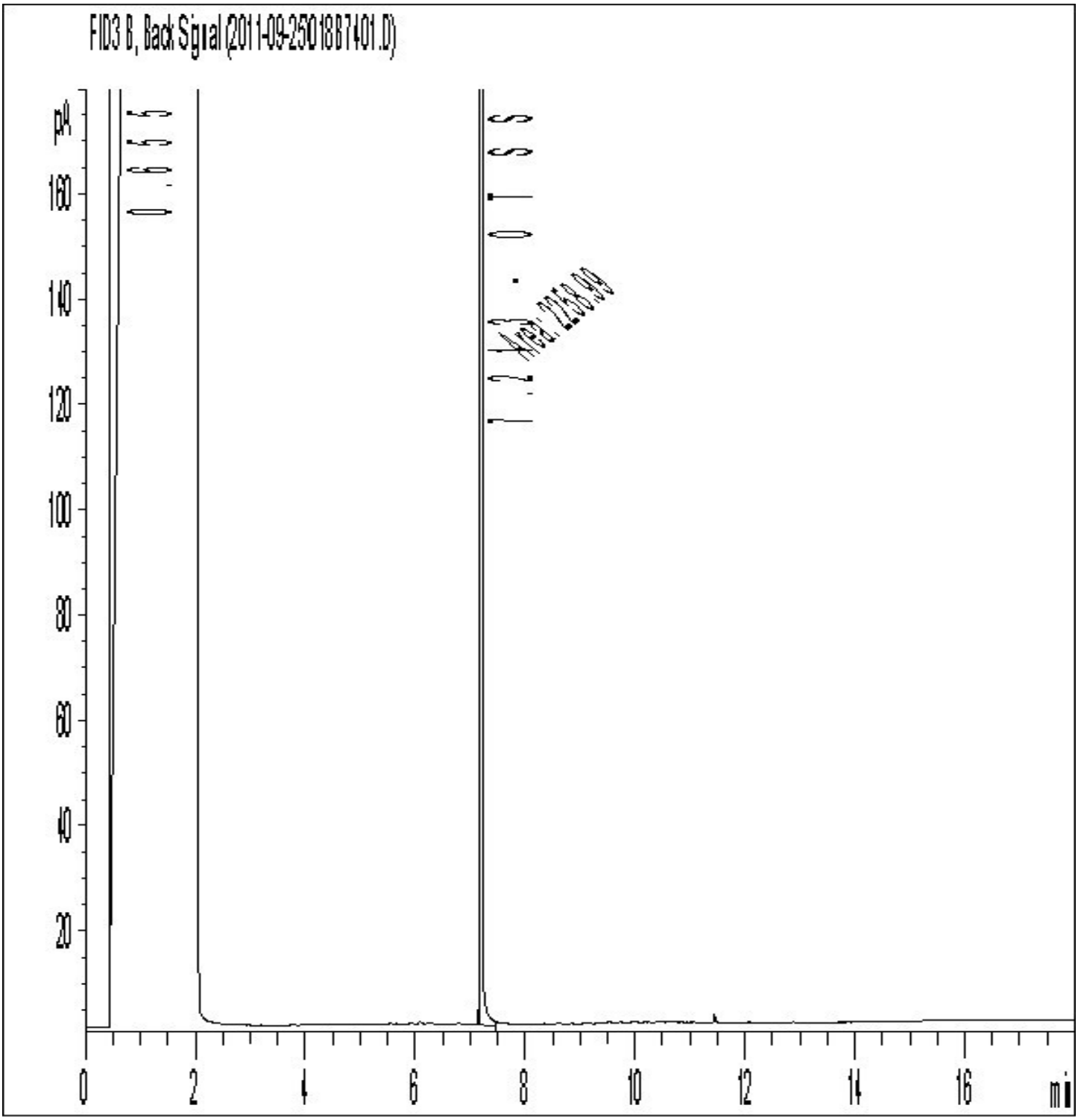
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/27
Maxxam Job #: B1E7207
Maxxam Sample: KZ7688

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-9 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.

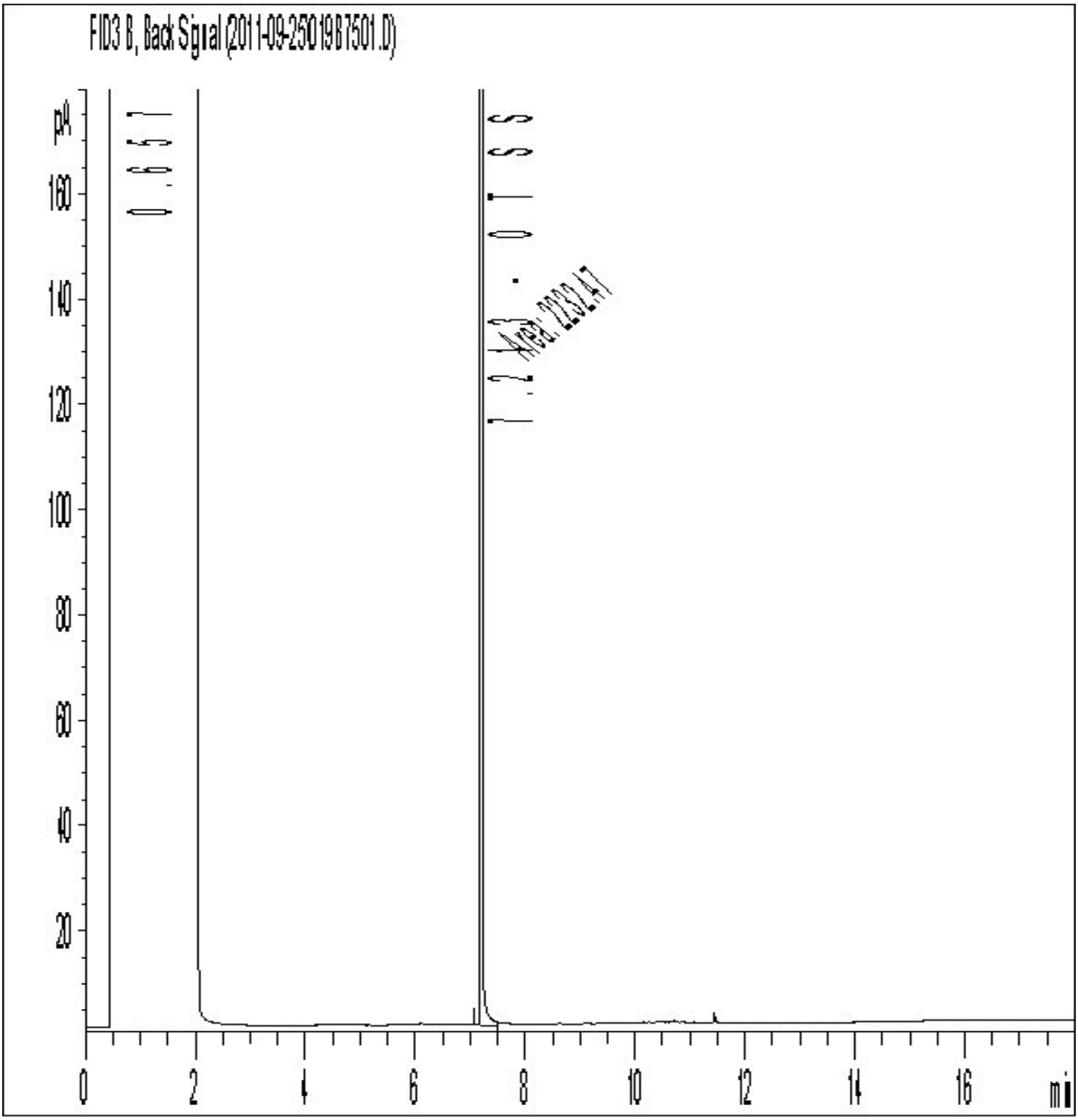
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/27
Maxxam Job #: B1E7207
Maxxam Sample: KZ7689

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-9 SA5

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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Your Project #: 11-1121-0202
Your C.O.C. #: 0038337

Attention: Andrea Catley
Golder Associates Ltd
32 Steacie Dr
Kanata, ON
K2K 2A9

Report Date: 2011/09/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1E7548
Received: 2011/09/23, 14:30

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2011/09/27	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	2011/09/26	2011/09/26	OTT SOP-00001	CCME Hydrocarbons

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.

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

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

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
Email: JClement@maxxam.ca
Phone# (613) 274-3549

==========

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: 1

Maxxam Job #: B1E7548
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: JD

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		KZ9369	KZ9369	KZ9370		
Sampling Date		2011/09/23	2011/09/23	2011/09/23		
	Units	**BH11-1**	**BH11-1 Lab-Dup**	**BH11-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons						
Benzene	ug/L	<0.20	<0.20	<0.20	0.20	2627203
Toluene	ug/L	0.65	0.57	<0.20	0.20	2627203
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	0.20	2627203
o-Xylene	ug/L	0.68	0.53	<0.20	0.20	2627203
p+m-Xylene	ug/L	1.7	1.5	<0.40	0.40	2627203
Total Xylenes	ug/L	2.4	2.0	<0.40	0.40	2627203
F1 (C6-C10)	ug/L	51	54	<25	25	2627203
F1 (C6-C10) - BTEX	ug/L	48	51	<25	25	2627203
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/L	<100		<100	100	2626451
F3 (C16-C34 Hydrocarbons)	ug/L	<100		<100	100	2626451
F4 (C34-C50 Hydrocarbons)	ug/L	<100		<100	100	2626451
Reached Baseline at C50	ug/L	YES		YES		2626451
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	98	104	103		2627203
4-Bromofluorobenzene	%	80	85	71		2627203
D10-Ethylbenzene	%	104	108	105		2627203
D4-1,2-Dichloroethane	%	105	107	113		2627203
o-Terphenyl	%	89		101		2626451

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E7548
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: JD

Test Summary

Maxxam ID KZ9369 **Collected** 2011/09/23
Sample ID BH11-1 **Shipped**
Matrix Water **Received** 2011/09/23

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2627203	N/A	2011/09/27	PAUL RUBINATO
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2626451	2011/09/26	2011/09/26	LYNDSEY HART

Maxxam ID KZ9369 Dup **Collected** 2011/09/23
Sample ID BH11-1 **Shipped**
Matrix Water **Received** 2011/09/23

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2627203	N/A	2011/09/27	PAUL RUBINATO

Maxxam ID KZ9370 **Collected** 2011/09/23
Sample ID BH11-3 **Shipped**
Matrix Water **Received** 2011/09/23

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2627203	N/A	2011/09/27	PAUL RUBINATO
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2626451	2011/09/26	2011/09/26	LYNDSEY HART

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E7548
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: JD

Package 1	8.7°C

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

GENERAL COMMENTS

All sample bottles contained visible sediment, which was included in the analysis as per the Protocol for Analytical Methods Use in the Assesment of Properties under part XV.1 of the Environmental Protection Act.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E7548
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: JD

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2626451	o-Terphenyl	2011/09/26	99	30 - 130	95	30 - 130	101	%		
2626451	F2 (C10-C16 Hydrocarbons)	2011/09/26	88	50 - 130	87	70 - 130	<100	ug/L	NC	50
2626451	F3 (C16-C34 Hydrocarbons)	2011/09/26	88	50 - 130	87	70 - 130	<100	ug/L	NC	50
2626451	F4 (C34-C50 Hydrocarbons)	2011/09/26	88	50 - 130	87	70 - 130	<100	ug/L	NC	50
2627203	1,4-Difluorobenzene	2011/09/27	96	70 - 130	96	70 - 130	102	%		
2627203	4-Bromofluorobenzene	2011/09/27	102	70 - 130	103	70 - 130	82	%		
2627203	D10-Ethylbenzene	2011/09/27	91	70 - 130	90	70 - 130	102	%		
2627203	D4-1,2-Dichloroethane	2011/09/27	118	70 - 130	98	70 - 130	107	%		
2627203	Benzene	2011/09/27	92	70 - 130	87	70 - 130	<0.20	ug/L	NC	40
2627203	Toluene	2011/09/27	98	70 - 130	96	70 - 130	<0.20	ug/L	NC	40
2627203	Ethylbenzene	2011/09/27	97	70 - 130	99	70 - 130	<0.20	ug/L	NC	40
2627203	o-Xylene	2011/09/27	106	70 - 130	99	70 - 130	<0.20	ug/L	NC	40
2627203	p+m-Xylene	2011/09/27	94	70 - 130	94	70 - 130	<0.40	ug/L	NC	40
2627203	F1 (C6-C10)	2011/09/27	71	70 - 130	75	70 - 130	<25	ug/L	NC	40
2627203	Total Xylenes	2011/09/27					<0.40	ug/L	15.0	40
2627203	F1 (C6-C10) - BTEX	2011/09/27					<25	ug/L	NC	40

N/A = Not Applicable
RPD = Relative Percent Difference
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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B1E7548

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

PAUL RUBINATO, Analyst, Maxxam Analytics

==========

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 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam 6740 Campobello Road, Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

38337 Page 1 of 1

INVOICE INFORMATION	REPORT INFORMATION (if differs from invoice)	PROJECT INFORMATION	MAXXAM JOB NUMBER
Company Name: Golder Assoc.	Company Name:	Quotation #:	
Contact Name: Andrea Catley	Contact Name: Troy Skinner	P.O. #:	CHAIN OF CUSTODY #
Address: 32 Steacie Dr. Kanata, ON	Address:	Project #: 11-1121-0207	00
Phone: (613) 592-9600 Fax: (613) 592-9601	Phone: Fax:	Project Name:	
Email: ACatley@golder.com	Email: tskinner@golder.com	Location:	
		Sampled By: J. Deroui	

REGULATORY CRITERIA

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

☐ MISA ☐ PWQO ☐ Reg. 558

Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 ☐ Residential / Parkland ☐ Industrial / Commercial ☐ Medium / Fine ☐ Coarse

Sewer Use: ☐ Sanitary ☐ Storm Municipality:

Other (specify): Report Criteria on C of A? ☐

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

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water? (Y / N)	Metals Field Filtered? (Y / N)	PHC F1-F4	BTEX	# of Cont.
1	BH11-1	Sept 23, 2011					X	X	5
2	BH11-3	"					X	X	5
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT: ☐ 5 to 7 Working Days

Rush TAT: Rush Confirmation #: (call Lab for #)

☐ 1 day ☑ 2 days ☐ 3 days

DATE Required:

TIME Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

COMMENTS / TAT COMMENTS

23-Sep-11 14:30
JULIE CLEMENT
B1E7548
S_0 OTT-001

REC'D IN OTTAWA

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time
Jason Deroui	Josh Freeman	Sept. 23, 2011	14:30
		2011/09/23	14:30

JARS USED AND NOT SUBMITTED

Laboratory Use Only
Temperature (°C) on Receipt: 9/9/8

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

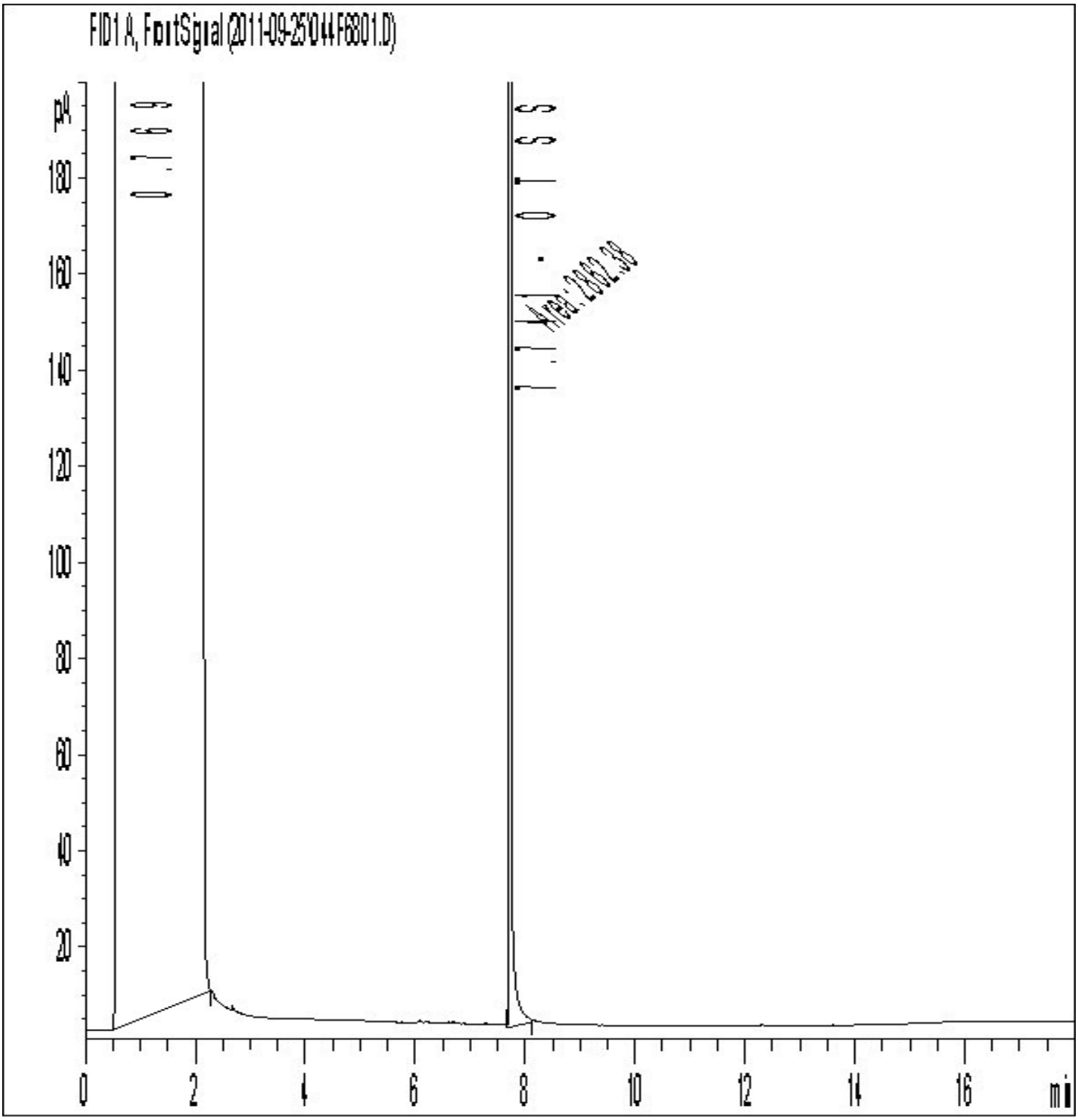
COC-1004 (03/10) - ENV. ENG.

Report Date: 2011/09/27
Maxxam Job #: B1E7548
Maxxam Sample: KZ9369

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-1

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.

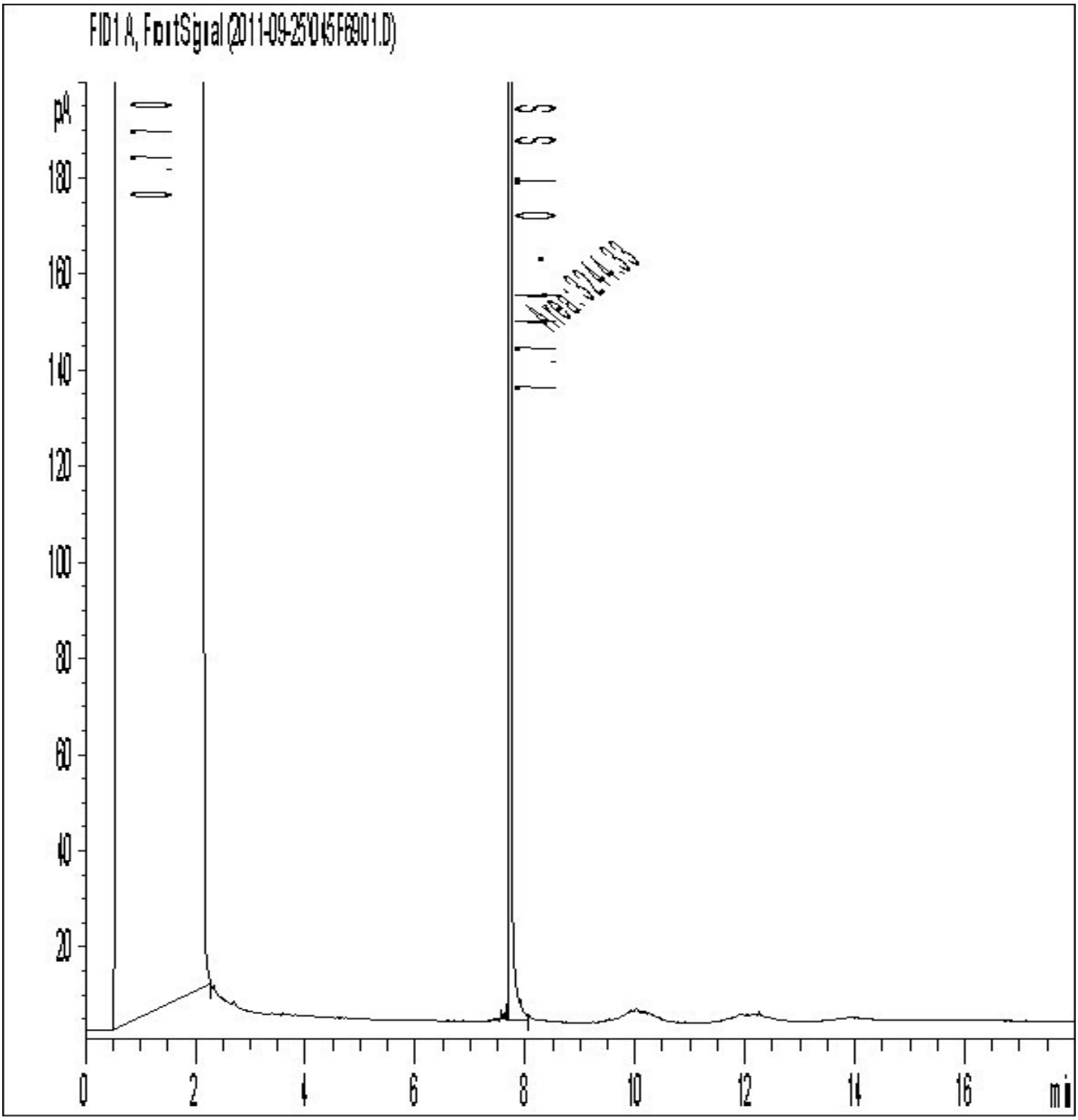
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/27
Maxxam Job #: B1E7548
Maxxam Sample: KZ9370

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-3

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 Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Your Project #: 11-1121-0202
Your C.O.C. #: 28294302, 282943-02-01, 282943-01-01

Attention: Andrea Catley
Golder Associates Ltd
32 Steacie Dr
Kanata, ON
K2K 2A9

Report Date: 2011/09/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1E8391
Received: 2011/09/26, 08:30

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Soil	3	2011/09/26	2011/09/27	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	3	2011/09/26	2011/09/27	OTT SOP-00001	CCME CWS
MOISTURE	3	N/A	2011/09/27	CAM SOP-00445	McKeague 2nd ed 1978

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.

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

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

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
Email: JClement@maxxam.ca
Phone# (613) 274-3549

==========

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: 1

Maxxam Job #: B1E8391
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

RESULTS OF ANALYSES OF SOIL

Maxxam ID		LA4749	LA4758	LA4758	LA5677		
Sampling Date		2011/09/25	2011/09/25	2011/09/25	2011/09/25		
	Units	**BH11-5 SA 2**	**BH11-5 SA 11**	**BH11-5 SA 11 Lab-Dup**	**BH11-5 SA2 - DUP**	**RDL**	**QC Batch**
Inorganics							
Moisture	%	43	11	10	43	0.2	2627051

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		LA4749	LA4758	LA4758	LA5677		
Sampling Date		2011/09/25	2011/09/25	2011/09/25	2011/09/25		
	Units	**BH11-5 SA 2**	**BH11-5 SA 11**	**BH11-5 SA 11 Lab-Dup**	**BH11-5 SA2 - DUP**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.02	<0.02		<0.02	0.02	2626650
Toluene	ug/g	<0.02	0.08		<0.02	0.02	2626650
Ethylbenzene	ug/g	<0.02	0.03		<0.02	0.02	2626650
o-Xylene	ug/g	<0.02	0.16		<0.02	0.02	2626650
p+m-Xylene	ug/g	<0.04	0.55		<0.04	0.04	2626650
Total Xylenes	ug/g	<0.04	0.72		<0.04	0.04	2626650
F1 (C6-C10)	ug/g	<10	61		<10	10	2626650
F1 (C6-C10) - BTEX	ug/g	<10	60		<10	10	2626650
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	67	55	<10	10	2627047
F3 (C16-C34 Hydrocarbons)	ug/g	<10	52	44	<10	10	2627047
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2627047
Reached Baseline at C50	ug/g	YES	YES	YES	YES		2627047
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	104	102		102		2626650
4-Bromofluorobenzene	%	84	104		83		2626650
D10-Ethylbenzene	%	87	101		91		2626650
D4-1,2-Dichloroethane	%	108	99		105		2626650
o-Terphenyl	%	80	78	78	82		2627047

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8391
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Test Summary

Maxxam ID LA4749 **Collected** 2011/09/25
Sample ID BH11-5 SA 2 **Shipped**
Matrix Soil **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/27	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2627047	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2627051	N/A	2011/09/27	HABIBA ESSAK

Maxxam ID LA4758 **Collected** 2011/09/25
Sample ID BH11-5 SA 11 **Shipped**
Matrix Soil **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/27	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2627047	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2627051	N/A	2011/09/27	HABIBA ESSAK

Maxxam ID LA4758 Dup **Collected** 2011/09/25
Sample ID BH11-5 SA 11 **Shipped**
Matrix Soil **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2627047	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2627051	N/A	2011/09/27	HABIBA ESSAK

Maxxam ID LA5677 **Collected** 2011/09/25
Sample ID BH11-5 SA2 - DUP **Shipped**
Matrix Soil **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/27	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2627047	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2627051	N/A	2011/09/27	HABIBA ESSAK

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8391
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Package 1	6.3°C

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

GENERAL COMMENTS

Cooler custody seal was present and intact.

PETROLEUM HYDROCARBONS (CCME)

Petroleum Hydro. CCME F1 & BTEX in Soil: Matrix Spiked recoveries were not calculated because of high concentration of target compounds in the parent sample.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8391
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2626650	1,4-Difluorobenzene	2011/09/26	102	60 - 140	103	60 - 140	104	%		
2626650	4-Bromofluorobenzene	2011/09/26	102	60 - 140	105	60 - 140	88	%		
2626650	D10-Ethylbenzene	2011/09/26	109	30 - 130	111	30 - 130	102	%		
2626650	D4-1,2-Dichloroethane	2011/09/26	99	60 - 140	97	60 - 140	108	%		
2626650	Benzene	2011/09/27	85	60 - 140	83	60 - 140	<0.02	ug/g	31.5	50
2626650	Toluene	2011/09/27	88	60 - 140	94	60 - 140	<0.02	ug/g	NC	50
2626650	Ethylbenzene	2011/09/27	85	60 - 140	95	60 - 140	<0.02	ug/g	NC	50
2626650	o-Xylene	2011/09/27	NC	60 - 140	98	60 - 140	<0.02	ug/g	NC	50
2626650	p+m-Xylene	2011/09/27	NC	60 - 140	91	60 - 140	<0.04	ug/g	NC	50
2626650	F1 (C6-C10)	2011/09/27	NC	60 - 140	70	60 - 140	<10	ug/g	NC	50
2626650	Total Xylenes	2011/09/27					<0.04	ug/g	NC	50
2626650	F1 (C6-C10) - BTEX	2011/09/27					<10	ug/g	NC	50
2627047	o-Terphenyl	2011/09/27	77	30 - 130	76	30 - 130	71	%		
2627047	F2 (C10-C16 Hydrocarbons)	2011/09/27	92	50 - 130	94	70 - 130	<10	ug/g	20.8	50
2627047	F3 (C16-C34 Hydrocarbons)	2011/09/27	92	50 - 130	94	70 - 130	<10	ug/g	NC	50
2627047	F4 (C34-C50 Hydrocarbons)	2011/09/27	92	50 - 130	94	70 - 130	<10	ug/g	NC	50
2627051	Moisture	2011/09/27							10.2	50

N/A = Not Applicable
RPD = Relative Percent Difference
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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B1E8391

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

PAUL RUBINATO, Analyst, Maxxam Analytics

==========

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 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-653-6266 Fax:(905) 817-5779 www.maxxam.ca

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#14090 Golder Associates Ltd	Company Name:		Quotation #:	A87099	MAXXAM JOB #:	BOTTLE ORDER #: 282943
Contact Name:	Central Accounting	Contact Name:		P.O. #:			
Address:	32 Steacie Dr Kanata ON K2K 2A9	Address:		Project #:	11-1121-0202	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(613)592-9600 Fax: (613)592-9601	Phone:	Fax:	Project Name:		C#282943-02-01	JULIE CLEMENT
Email:	maxxam@golder.com, OttawaAccounting@golder.c	Email:		Site #:			
				Sampled By:	Philip Hulan		

Regulation 153 (2011)
☐ Table 1 ☐ Res/Park ☐ Medium/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ 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 (< 10ºC) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☐
(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)	Petroleum Hydro. CCME F1 & BTEX in Soil	Petroleum Hydrocarbons F2-F4 in Soil	# of Bottles	Comments
1	11-5 SA1		Sept 25 2011								
2	SA2		↓								
3	SA3										
4	SA4										
5	SA5										
6	SA6										
7	SA7										
8	SA8										
9	SA9										
10	SA10		↓								

26-Sep-11 08:30
JULIE CLEMENT
B1E8391
JOF OTT-011

XXXNB
ICE

*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: Time Sensitive	Temperature (ºC) on Receipt	Custody Seal Present	Yes	No
Philip Hulan	11/09/25	13:15	Madison Bingley	2011/09/26	8:30			6, 7, 7	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 Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-653-6266 Fax:(905) 817-5779 www.maxxam.ca

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#14090 Golder Associates Ltd	Company Name:		Quotation #:	A87099	MAXXAM JOB #:	BOTTLE ORDER #: 282943
Contact Name:	Central Accounting	Contact Name:		P.O. #:			
Address:	32 Steacie Dr Kanata ON K2K 2A9	Address:		Project #:	11-1121-0202	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(613)592-9600 Fax: (613)592-9601	Phone:	Fax:	Project Name:		C#282943-01-01	JULIE CLEMENT
Email:	maxxam@golder.com, OttawaAccounting@golder.c	Email:		Site #:			
				Sampled By:	Philip Hulan		

Regulation 153 (2011): ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table ___ ☐ Res/Park ☐ 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 (< 10ºC) 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)	Petroleum Hydro. CCME F1 & BTEX in Soil	Petroleum Hydrocarbons F2-F4 in Soil	# of Bottles	Comments
1	11-5 SA11		Sept 25/2011								
2											
3											Hold until further Notice
4											
5											Andrea Cattley will
6											Contact for analysis
7											details
8											
9											
10											ICE

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☐
(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
Philip Hulan	11/09/25	13:15	Madison Bingley	2011/09/26	8:30	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	6, 7, 7	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 Analytics 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Golder Associates	Company Name:		Quotation #:		
Contact Name:	Andrea Catley	Contact Name:		P.O. #:		CHAIN OF CUSTODY # :
Address:	32 Steacie Drive, Ottawa, ON K2K 2A9	Address:		Project #:	11-1121-0202	EO652011
Phone:	613-592-9600 Fax: 613-592-9601	Phone:	Fax: 613-592-9601	Project Name:		
Email:	acatley@golder.com	Email:		Location:		
				Sampled By:	Phil Hulan	

REGULATORY CRITERIA

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

- [ ] MISA
- [ ] PWQO
- [ ] Reg. 558
- Reg. 153: [ ] Table 1 [ ] Table 2 [✓] Table 3 [ ] Table 6
- [✓] Residential / Parkland [ ] Industrial / Commercial [ ] Medium / Fine [ ] Coarse
- Sewer Use: [ ] Sanitary [ ] Storm
- Municipality:
- Other (specify):
- Report Criteria on C of A ? [ ]

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.)	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	PHCs F1-F4 and BTEX	# of Cont.	COMMENTS / TAT COMMENTS
1	BH11-5 SA2	Sept 25/11		Soil			X		Please run a duplicate on this sample
2	BH11-5 SA11	Sept 25/11		Soil			X		
3	BH11-8 SA4	Sept 23/11		Soil			X		
4	BH11-8 SA6	Sept 23/11		Soil			X		
5	BH11-9 SA11	Sept 23/11		Soil			X		
6									
7									
8									
9									
10									
11									
12									

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
- [ ] 5 to 7 Working Days

Rush TAT: Rush Confirmation # (call Lab for #)
- [ ] 1 day [✓] 2 days [ ] 3 days

DATE Required:
TIME Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	# JARS USED AND NOT SUBMITTED	Laboratory Use Only: Temperature (°C) on Receipt
A Catley	Josh Freeman	Sept 26/11			6/7/7
Andrea Catley					
		2011/09/26	8:30		

ON ICE

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

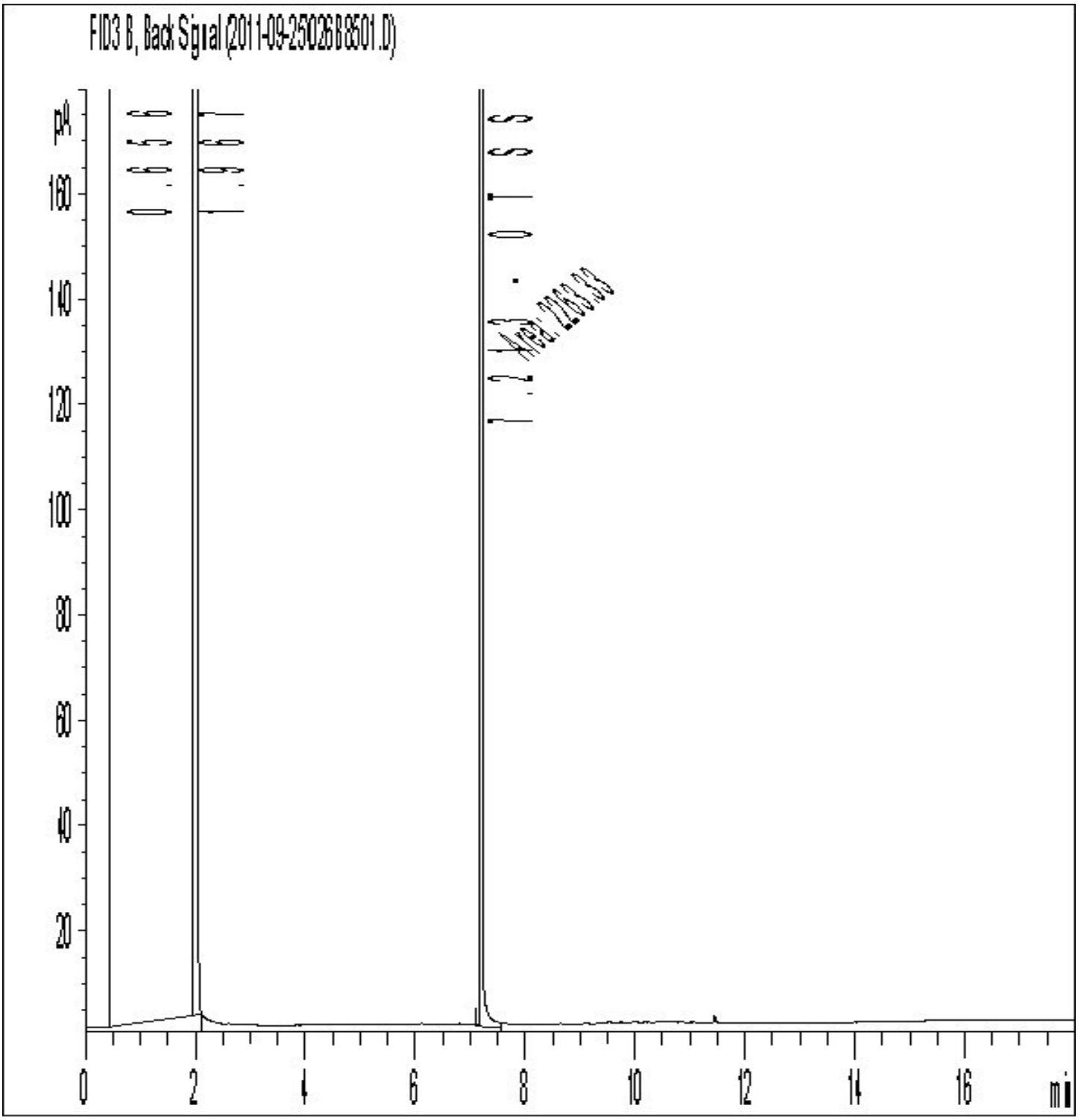
White: Maxxam Yellow: Mail Pink: Client

Report Date: 2011/09/27
Maxxam Job #: B1E8391
Maxxam Sample: LA4749

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-5 SA 2

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.

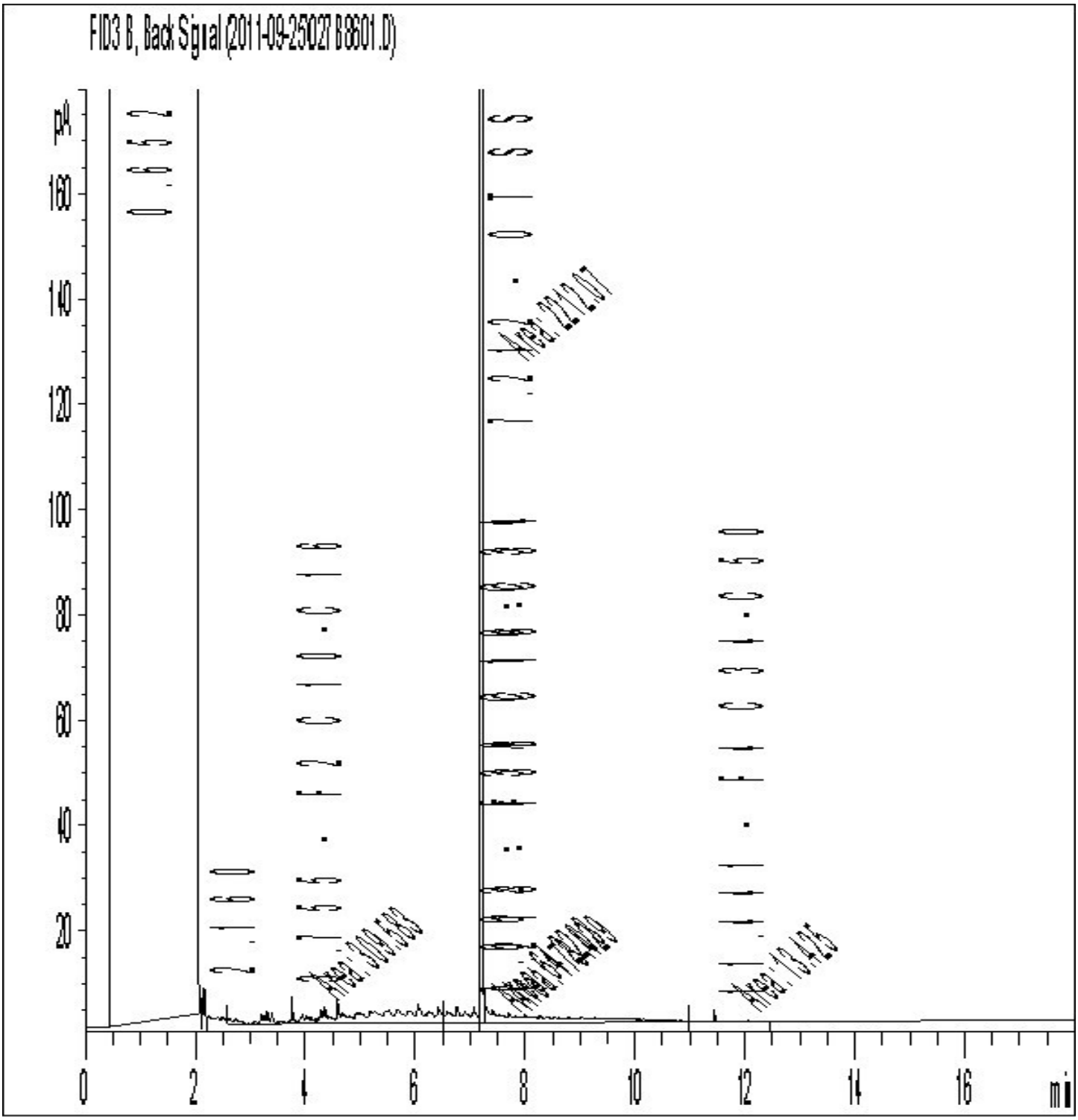
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/27
Maxxam Job #: B1E8391
Maxxam Sample: LA4758

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-5 SA 11

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



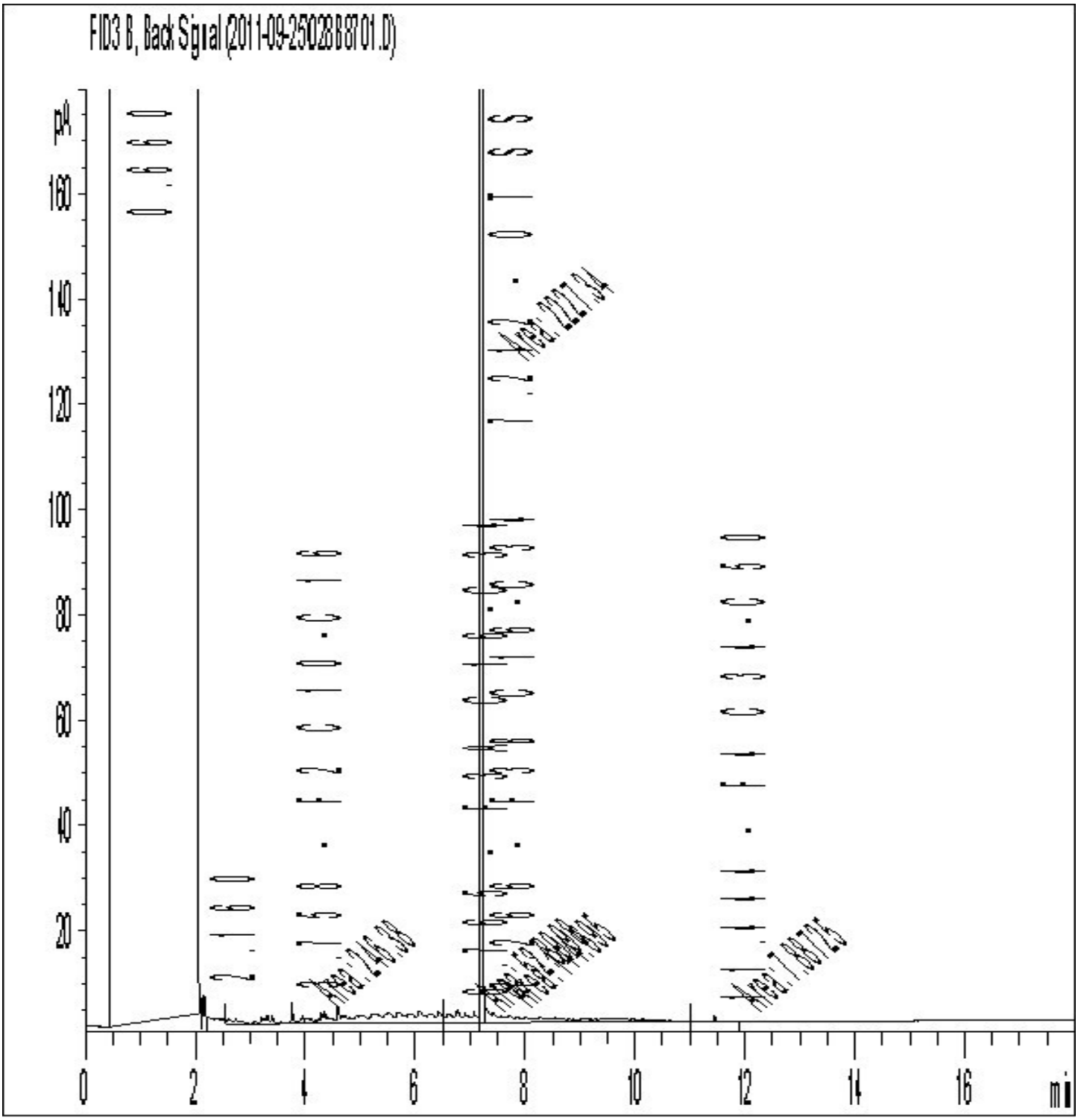
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2011/09/27
Maxxam Job #: B1E8391
Maxxam Sample: LA4758 Lab-Dup

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-5 SA 11

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.

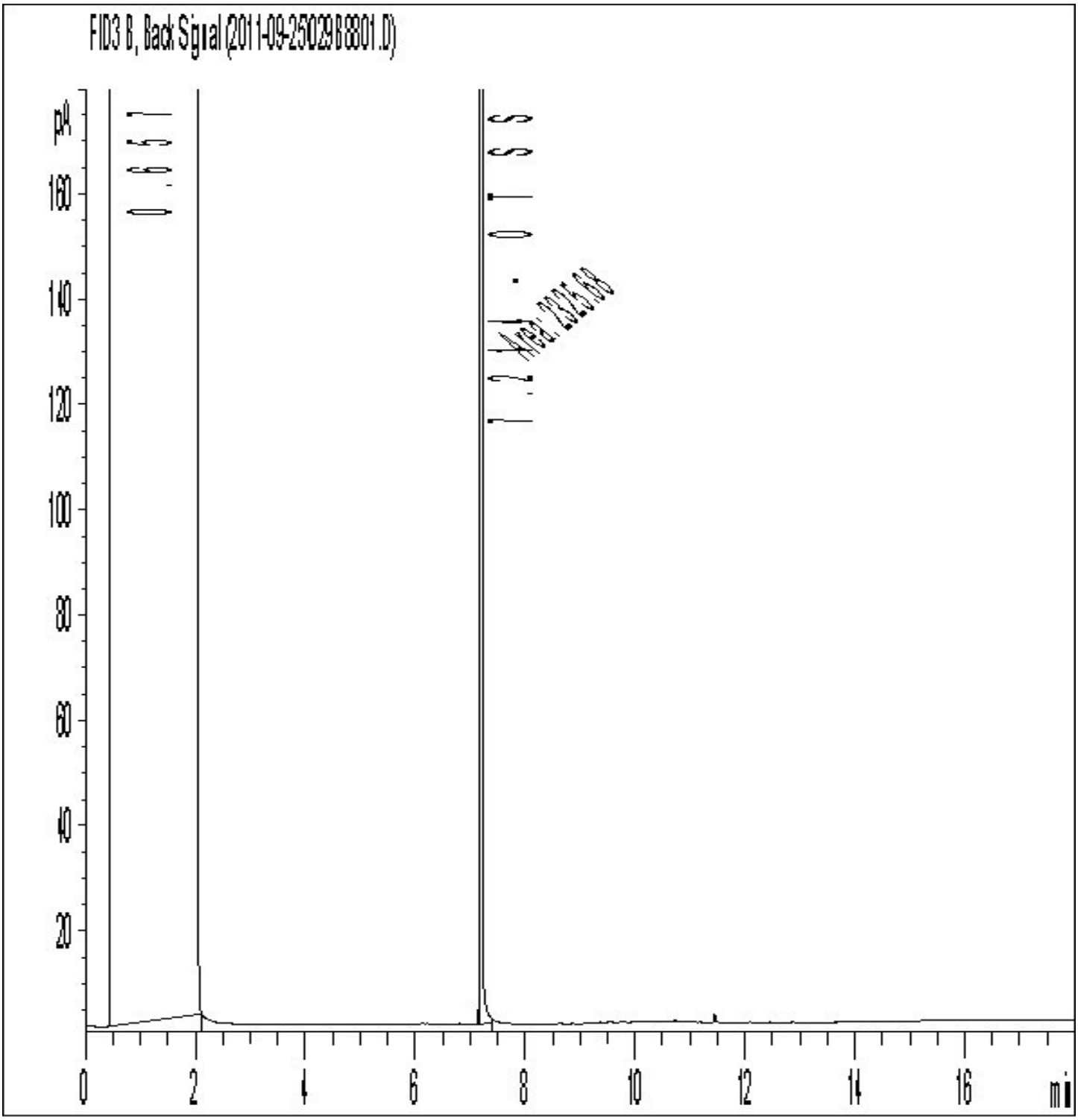
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/27
Maxxam Job #: B1E8391
Maxxam Sample: LA5677

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-5 SA2 - DUP

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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Your Project #: 11-1121-0202
Your C.O.C. #: n/a

Attention: Andrea Catley
Golder Associates Ltd
32 Steacie Dr
Kanata, ON
K2K 2A9

Report Date: 2011/09/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1E8464
Received: 2011/09/26, 8:30

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Soil	3	2011/09/26	2011/09/27	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	3	2011/09/26	2011/09/27	OTT SOP-00001	CCME CWS
MOISTURE	3	N/A	2011/09/27	CAM SOP-00445	McKeague 2nd ed 1978

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.

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

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

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
Email: JClement@maxxam.ca
Phone# (613) 274-3549

==========

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: 1

Maxxam Job #: B1E8464
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

RESULTS OF ANALYSES OF SOIL

Maxxam ID		LA5036	LA5038	LA5047		
Sampling Date		2011/09/23	2011/09/23	2011/09/23		
	Units	**BH11-8 SA 4**	**BH11-8 SA 6**	**BH11-9 SA 11**	**RDL**	**QC Batch**
Inorganics						
Moisture	%	37	22	9.1	0.2	2627051

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		LA5036	LA5038	LA5047		
Sampling Date		2011/09/23	2011/09/23	2011/09/23		
	Units	**BH11-8 SA 4**	**BH11-8 SA 6**	**BH11-9 SA 11**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons						
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	2626650
Toluene	ug/g	<0.02	<0.02	<0.02	0.02	2626650
Ethylbenzene	ug/g	<0.02	<0.02	<0.02	0.02	2626650
o-Xylene	ug/g	<0.02	<0.02	0.05	0.02	2626650
p+m-Xylene	ug/g	<0.04	<0.04	0.14	0.04	2626650
Total Xylenes	ug/g	<0.04	<0.04	0.19	0.04	2626650
F1 (C6-C10)	ug/g	<10	<10	35	10	2626650
F1 (C6-C10) - BTEX	ug/g	<10	<10	35	10	2626650
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	40	10	2627047
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	42	10	2627047
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	2627047
Reached Baseline at C50	ug/g	YES	YES	YES		2627047
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	103	105	108		2626650
4-Bromofluorobenzene	%	84	83	88		2626650
D10-Ethylbenzene	%	90	90	109		2626650
D4-1,2-Dichloroethane	%	105	107	97		2626650
o-Terphenyl	%	68	69	80		2627047

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8464
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Test Summary

Maxxam ID LA5036 **Collected** 2011/09/23
Sample ID BH11-8 SA 4 **Shipped**
Matrix Soil **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/27	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2627047	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2627051	N/A	2011/09/27	HABIBA ESSAK

Maxxam ID LA5038 **Collected** 2011/09/23
Sample ID BH11-8 SA 6 **Shipped**
Matrix Soil **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/27	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2627047	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2627051	N/A	2011/09/27	HABIBA ESSAK

Maxxam ID LA5047 **Collected** 2011/09/23
Sample ID BH11-9 SA 11 **Shipped**
Matrix Soil **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2626650	2011/09/26	2011/09/27	STEVE ROBERTS
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2627047	2011/09/26	2011/09/27	LYNDSEY HART
MOISTURE	BAL	2627051	N/A	2011/09/27	HABIBA ESSAK

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8464
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

Package 1	16.7°C

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

GENERAL COMMENTS

Custody seal was not present on the cooler.

PETROLEUM HYDROCARBONS (CCME)

Petroleum Hydro. CCME F1 & BTEX in Soil: Matrix Spiked recoveries were not calculated because of high concentration of target compounds in the parent sample.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8464
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: PH

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2626650	1,4-Difluorobenzene	2011/09/26	102	60 - 140	103	60 - 140	104	%		
2626650	4-Bromofluorobenzene	2011/09/26	102	60 - 140	105	60 - 140	88	%		
2626650	D10-Ethylbenzene	2011/09/26	109	30 - 130	111	30 - 130	102	%		
2626650	D4-1,2-Dichloroethane	2011/09/26	99	60 - 140	97	60 - 140	108	%		
2626650	Benzene	2011/09/27	85	60 - 140	83	60 - 140	<0.02	ug/g	31.5	50
2626650	Toluene	2011/09/27	88	60 - 140	94	60 - 140	<0.02	ug/g	NC	50
2626650	Ethylbenzene	2011/09/27	85	60 - 140	95	60 - 140	<0.02	ug/g	NC	50
2626650	o-Xylene	2011/09/27	NC	60 - 140	98	60 - 140	<0.02	ug/g	NC	50
2626650	p+m-Xylene	2011/09/27	NC	60 - 140	91	60 - 140	<0.04	ug/g	NC	50
2626650	F1 (C6-C10)	2011/09/27	NC	60 - 140	70	60 - 140	<10	ug/g	NC	50
2626650	Total Xylenes	2011/09/27					<0.04	ug/g	NC	50
2626650	F1 (C6-C10) - BTEX	2011/09/27					<10	ug/g	NC	50
2627047	o-Terphenyl	2011/09/27	77	30 - 130	76	30 - 130	71	%		
2627047	F2 (C10-C16 Hydrocarbons)	2011/09/27	92	50 - 130	94	70 - 130	<10	ug/g	20.8	50
2627047	F3 (C16-C34 Hydrocarbons)	2011/09/27	92	50 - 130	94	70 - 130	<10	ug/g	NC	50
2627047	F4 (C34-C50 Hydrocarbons)	2011/09/27	92	50 - 130	94	70 - 130	<10	ug/g	NC	50
2627051	Moisture	2011/09/27							10.2	50

N/A = Not Applicable
RPD = Relative Percent Difference
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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B1E8464

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

PAUL RUBINATO, Analyst, Maxxam Analytics

==========

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 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

11-8 SA1
11-8 SA2
11-8 SA3
11-8 SA4
11-8 SA5
11-8 SA6
11-8 SA7
11-8 SA8
11-8 SA9
11-8 SA10
11-8 SA11
11-8 SA12
11-8 SAR
11-9 SA10
11-9 SA11
11-9 SA12
11-9 SA13

Golder Associates

Attn: Andrea Catley

Project #: 11-1121-0202

Hold samples until further notice from Andrea

23-Sep-11 09:37
JULIE CLEMENT
B1E8464
JOF OTT-011

2011/09/22 11:00 17/17/16
ON ICE

No custody seals

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Analytics 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Golder Associates	Company Name:		Quotation #:		
Contact Name:	Andrea Catley	Contact Name:		P.O. #:		CHAIN OF CUSTODY # :
Address:	32 Steacie Drive, Ottawa, ON K2K 2A9	Address:		Project #:	11-1121-0202	EO652011
Phone:	613-592-9600 Fax: 613-592-9601	Phone:	Fax: 613-592-9601	Project Name:		
Email:	acatley@golder.com	Email:		Location:		
				Sampled By:	Phil Hulan	

REGULATORY CRITERIA

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

- ☐ MISA
- ☐ PWQO
- ☐ Reg. 558
- Reg. 153: ☐ Table 1 ☐ Table 2 ☑ Table 3 ☐ Table 6
- ☑ Residential / Parkland ☐ Industrial / Commercial ☐ Medium / Fine ☐ Coarse
- Sewer Use: ☐ Sanitary ☐ Storm
- Municipality:
- Other (specify):
- Report Criteria on C of A ? ☐

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.)	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	PHCs F1-F4 and BTEX	# of Cont.	COMMENTS / TAT COMMENTS
1	BH11-5 SA2	Sept 25/11		Soil			X		Please run a duplicate on this sample
2	BH11-5 SA11	Sept 25/11		Soil			X		
3	BH11-8 SA4	Sept 23/11		Soil			X		
4	BH11-8 SA6	Sept 23/11		Soil			X		
5	BH11-9 SA11	Sept 23/11		Soil			X		
6									
7									
8									
9									
10									
11									
12									

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☐ 5 to 7 Working Days

Rush TAT: Rush Confirmation # (call Lab for #)
☐ 1 day ☑ 2 days ☐ 3 days
DATE Required:
TIME Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	# JARS USED AND NOT SUBMITTED	Laboratory Use Only: Temperature (°C) on Receipt
A Catley Andrea Catley	Josh Freeman	Sept 26/11			6/7/7
		2011/09/26	8:30		

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

ON ICE

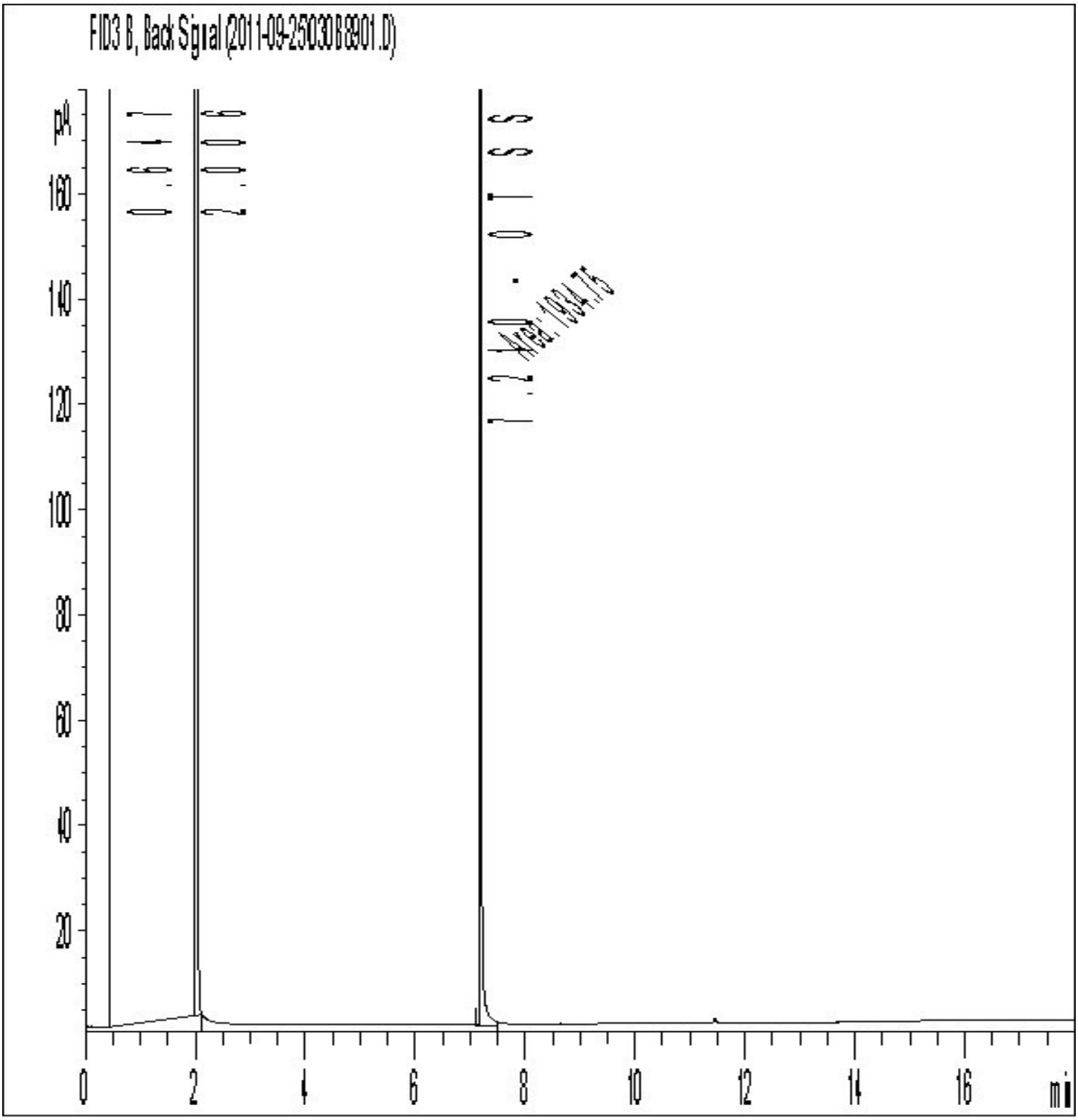
White: Maxxam Yellow: Mail Pink: Client

Report Date: 2011/09/27
Maxxam Job #: B1E8464
Maxxam Sample: LA5036

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-8 SA 4

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.

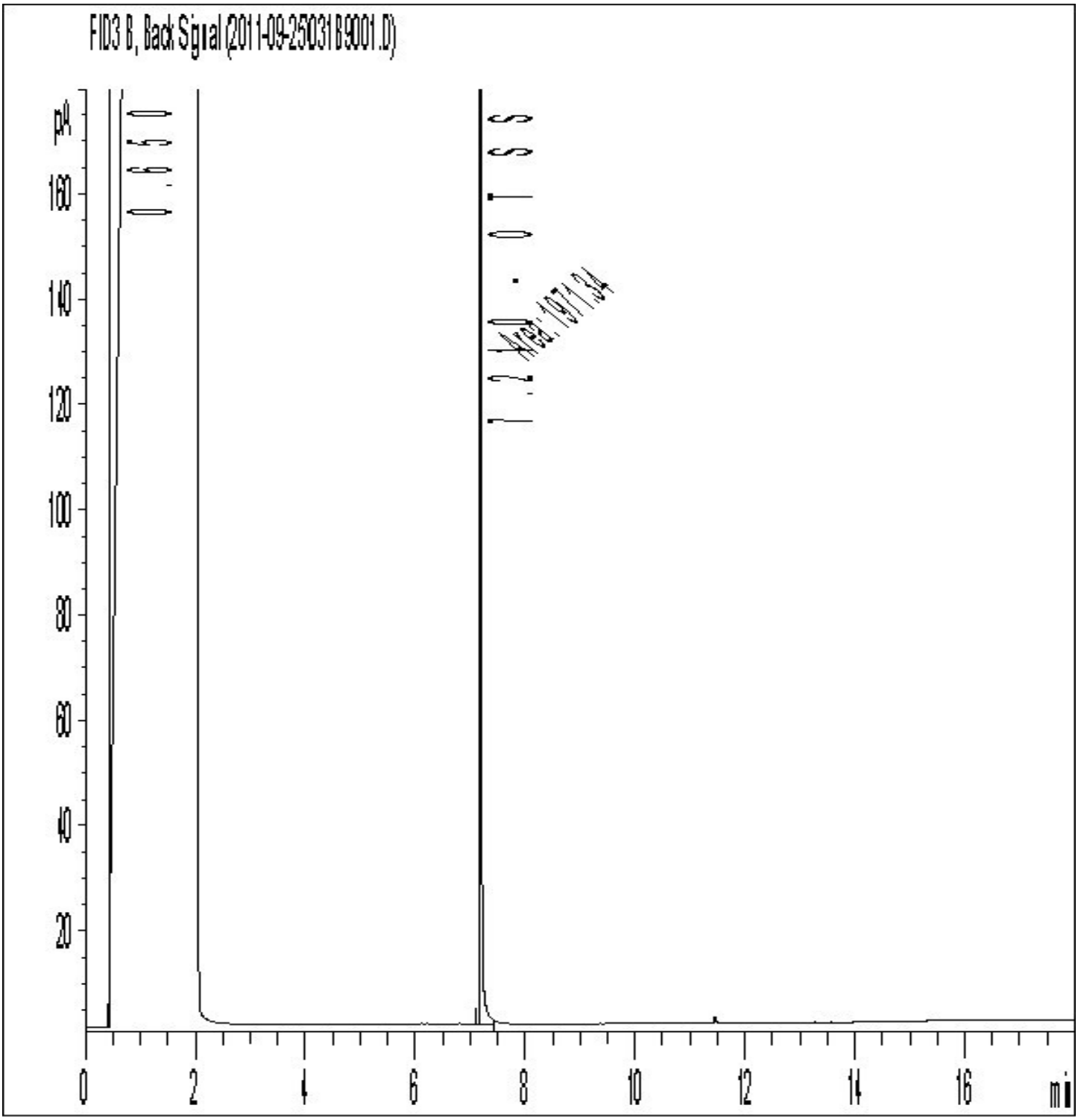
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/27
Maxxam Job #: B1E8464
Maxxam Sample: LA5038

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-8 SA 6

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.

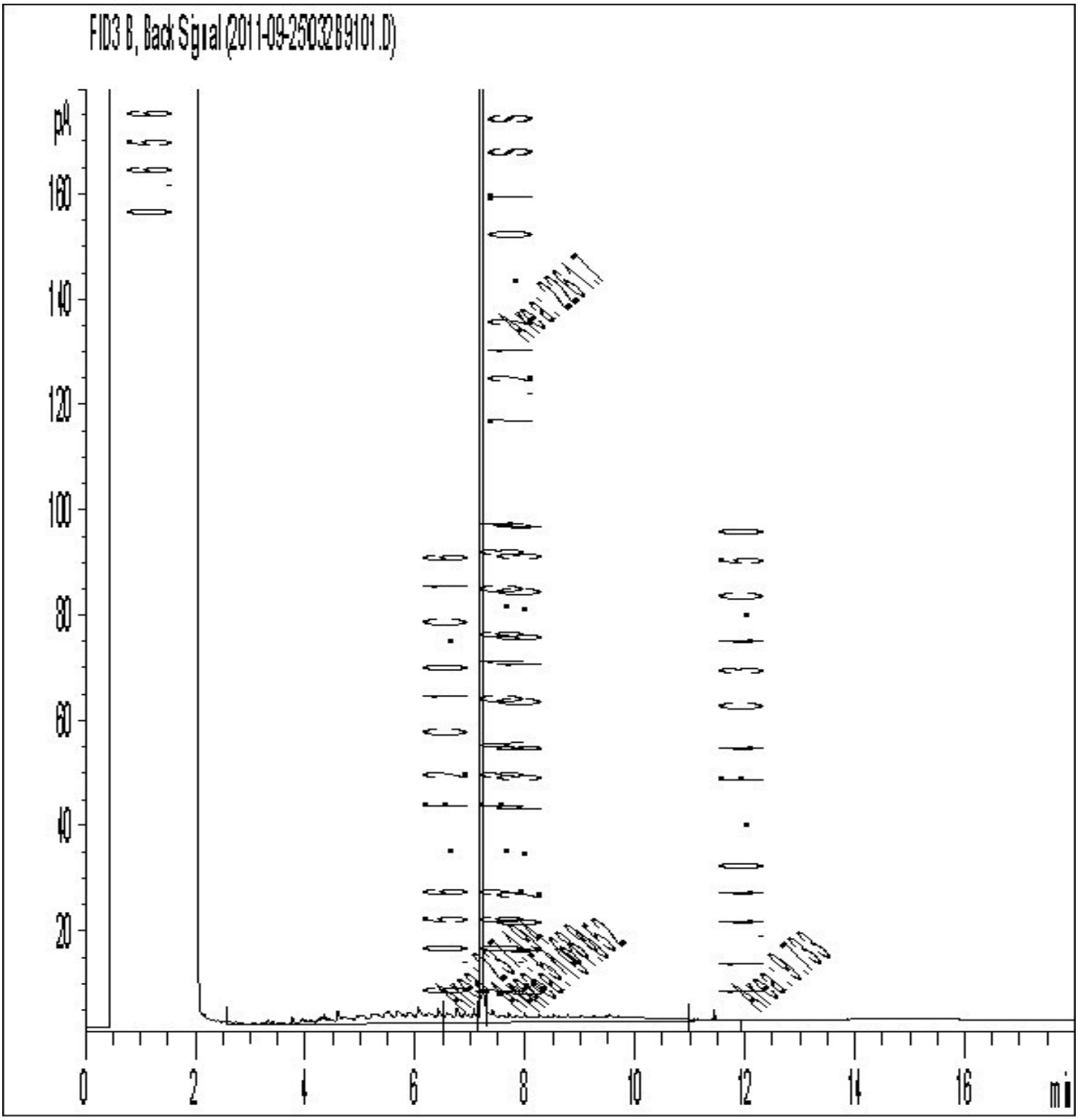
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/27
Maxxam Job #: B1E8464
Maxxam Sample: LA5047

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: BH11-9 SA 11

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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Your Project #: 11-1121-0202
Your C.O.C. #: 28251001, 282510-01-01

Attention: Troy Skinner
Golder Associates Ltd
32 Steacie Dr
Kanata, ON
K2K 2A9

Report Date: 2011/09/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1E8702
Received: 2011/09/26, 15:28

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Water (1)	4	N/A	2011/09/27	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water (1)	4	2011/09/27	2011/09/27	CAM SOP-00316	CCME Hydrocarbons

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.

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

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

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
Email: JClement@maxxam.ca
Phone# (613) 274-3549

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section

Maxxam Job #: B1E8702
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: MA

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 Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8702
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: MA

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		LA6467	LA6468	LA6469	LA6470	LA6470		
Sampling Date		2011/09/26	2011/09/26	2011/09/26	2011/09/26	2011/09/26		
	Units	**11-5**	**11-8**	**11-9**	**11-4**	**11-4 Lab-Dup**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	2627762
Toluene	ug/L	0.33	<0.20	<0.20	<0.20	<0.20	0.20	2627762
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	2627762
o-Xylene	ug/L	0.34	<0.20	<0.20	<0.20	<0.20	0.20	2627762
p+m-Xylene	ug/L	0.99	<0.40	<0.40	<0.40	<0.40	0.40	2627762
Total Xylenes	ug/L	1.3	<0.40	<0.40	<0.40	<0.40	0.40	2627762
F1 (C6-C10)	ug/L	30	<25	<25	<25	<25	25	2627762
F1 (C6-C10) - BTEX	ug/L	28	<25	<25	<25	<25	25	2627762
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	170	300	<100	150		100	2627768
F3 (C16-C34 Hydrocarbons)	ug/L	110	210	<100	110		100	2627768
F4 (C34-C50 Hydrocarbons)	ug/L	210	130	<100	<100		100	2627768
Reached Baseline at C50	ug/L	YES	YES	YES	YES			2627768
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	102	99	101	101	101		2627762
4-Bromofluorobenzene	%	100	100	102	100	103		2627762
D10-Ethylbenzene	%	102	96	99	97	94		2627762
D4-1,2-Dichloroethane	%	93	92	92	93	94		2627762
o-Terphenyl	%	102	104	102	108			2627768

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8702
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: MA

Test Summary

Maxxam ID LA6467 **Collected** 2011/09/26
Sample ID 11-5 **Shipped**
Matrix Water **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2627762	N/A	2011/09/27	SUNG HO KIM
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2627768	2011/09/27	2011/09/27	NICOLETA CIUBLEA

Maxxam ID LA6468 **Collected** 2011/09/26
Sample ID 11-8 **Shipped**
Matrix Water **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2627762	N/A	2011/09/27	SUNG HO KIM
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2627768	2011/09/27	2011/09/27	NICOLETA CIUBLEA

Maxxam ID LA6469 **Collected** 2011/09/26
Sample ID 11-9 **Shipped**
Matrix Water **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2627762	N/A	2011/09/27	SUNG HO KIM
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2627768	2011/09/27	2011/09/27	NICOLETA CIUBLEA

Maxxam ID LA6470 **Collected** 2011/09/26
Sample ID 11-4 **Shipped**
Matrix Water **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2627762	N/A	2011/09/27	SUNG HO KIM
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2627768	2011/09/27	2011/09/27	NICOLETA CIUBLEA

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8702
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: MA

Test Summary

Maxxam ID	LA6470 Dup	**Collected**	2011/09/26
Sample ID	11-4	**Shipped**	
Matrix	Water	**Received**	2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2627762	N/A	2011/09/27	SUNG HO KIM

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8702
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: MA

Package 1	14.0°C

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

GENERAL COMMENTS

Custody seal was not present on the cooler.

All sample bottles contained visual sediment, which was included in the analysis as per the Protocol for Analytical Methods Use in the Assesment of Properties under part XV.1 of the Environmental Protection Act.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8702
Report Date: 2011/09/27

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: MA

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2627762	1,4-Difluorobenzene	2011/09/27	100	70 - 130	100	70 - 130	101	%		
2627762	4-Bromofluorobenzene	2011/09/27	104	70 - 130	104	70 - 130	100	%		
2627762	D10-Ethylbenzene	2011/09/27	90	70 - 130	89	70 - 130	96	%		
2627762	D4-1,2-Dichloroethane	2011/09/27	90	70 - 130	90	70 - 130	92	%		
2627762	Benzene	2011/09/27	86	70 - 130	86	70 - 130	<0.20	ug/L	NC	30
2627762	Toluene	2011/09/27	90	70 - 130	90	70 - 130	<0.20	ug/L	NC	30
2627762	Ethylbenzene	2011/09/27	98	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
2627762	o-Xylene	2011/09/27	100	70 - 130	101	70 - 130	<0.20	ug/L	NC	30
2627762	p+m-Xylene	2011/09/27	96	70 - 130	97	70 - 130	<0.40	ug/L	NC	30
2627762	F1 (C6-C10)	2011/09/27	85	70 - 130	94	70 - 130	<25	ug/L	NC	30
2627762	Total Xylenes	2011/09/27					<0.40	ug/L	NC	30
2627762	F1 (C6-C10) - BTEX	2011/09/27					<25	ug/L	NC	30
2627768	o-Terphenyl	2011/09/27	110	50 - 130	109	50 - 130	109	%		
2627768	F2 (C10-C16 Hydrocarbons)	2011/09/27	NC	50 - 130	108	70 - 130	<100	ug/L	NC	30
2627768	F3 (C16-C34 Hydrocarbons)	2011/09/27	100	50 - 130	101	70 - 130	<100	ug/L	NC	30
2627768	F4 (C34-C50 Hydrocarbons)	2011/09/27	99	50 - 130	99	70 - 130	<100	ug/L	NC	30

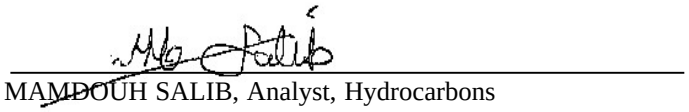
N/A = Not Applicable
RPD = Relative Percent Difference
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B1E8702

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



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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-653-6266 Fax:(905) 817-5779 www.maxxam.ca

CHAIN OF CUSTODY RECORD

Page of

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#14090 Golder Associates Ltd	Company Name:		Quotation #:	A87099	MAXXAM JOB #:	BOTTLE ORDER #: 282510
Contact Name:	Central Accounting	Contact Name:	~~Sully Sullivan~~ TROY SKINNER	P.O. #:			
Address:	32 Steacie Dr Kanata ON K2K 2A9	Address:		Project #:	11-1121-0202	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(613)592-9600 Fax: (613)592-9601	Phone:	Fax:	Project Name:		C#282510-01-01	JULIE CLEMENT
Email:	maxxam@golder.com, OttawaAccounting@golder.c	Email:	~~bsullivan@golder.com~~ tskinner@golder.c	Site #:			
				Sampled By:	MIKE ARMITAGE		

Regulation 153 (2011)	Other Regulations	SPECIAL INSTRUCTIONS
☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table ___ ☐ For RSC	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg. 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Other ___	

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 (< 10ºC) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☐
(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: 24HR ☑
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)	Petroleum Hydro. F1 & BTEX in Soil	Petroleum Hydrocarbons F2-F4 in Soil	Petroleum Hydro. F1 & BTEX in Water	Petroleum Hydrocarbons F2-F4 in Water	# of Bottles	Comments
1		11-5	2011/09/26		GW					✓	✓	5	
2		11-8	↓		↓					✓	✓	↓	
3		11-9								✓	✓		
4		11-4								✓	✓		
5													
6													
7													
8													
9													
10													

26-Sep-11 15:28
JULIE CLEMENT
B1E8702
JOF OTT-001

REC'D IN OTTAWA

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
	2011/09/26		Josh Freeman	2011/09/26	15:28	

Laboratory Use Only				
Time Sensitive	Temperature (ºC) on Receipt	Custody Seal	Yes	No
	14/16/12	Present		
		Intact		✓

ON ICE

* 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

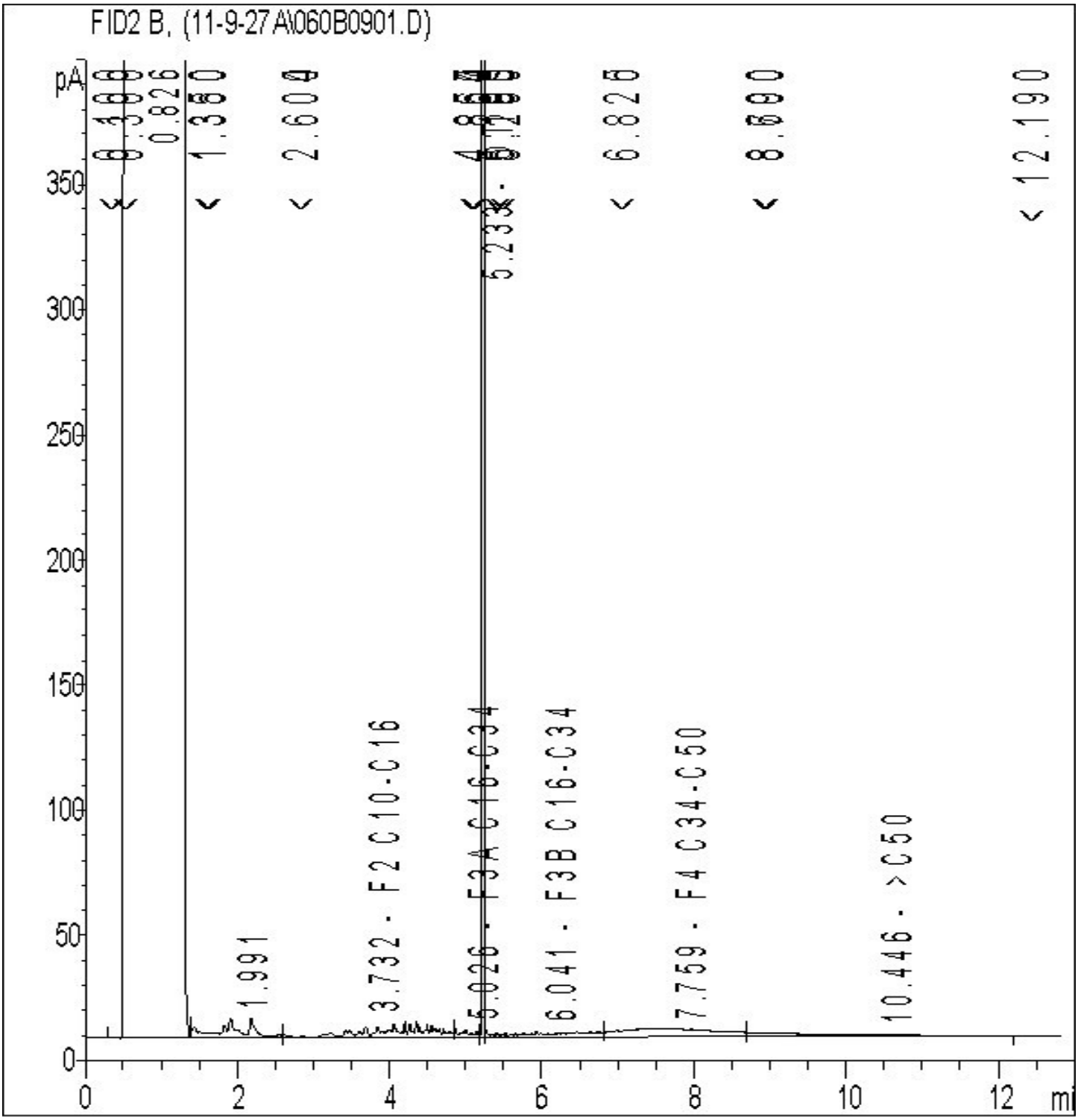
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Report Date: 2011/09/27
Maxxam Job #: B1E8702
Maxxam Sample: LA6467

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: 11-5

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



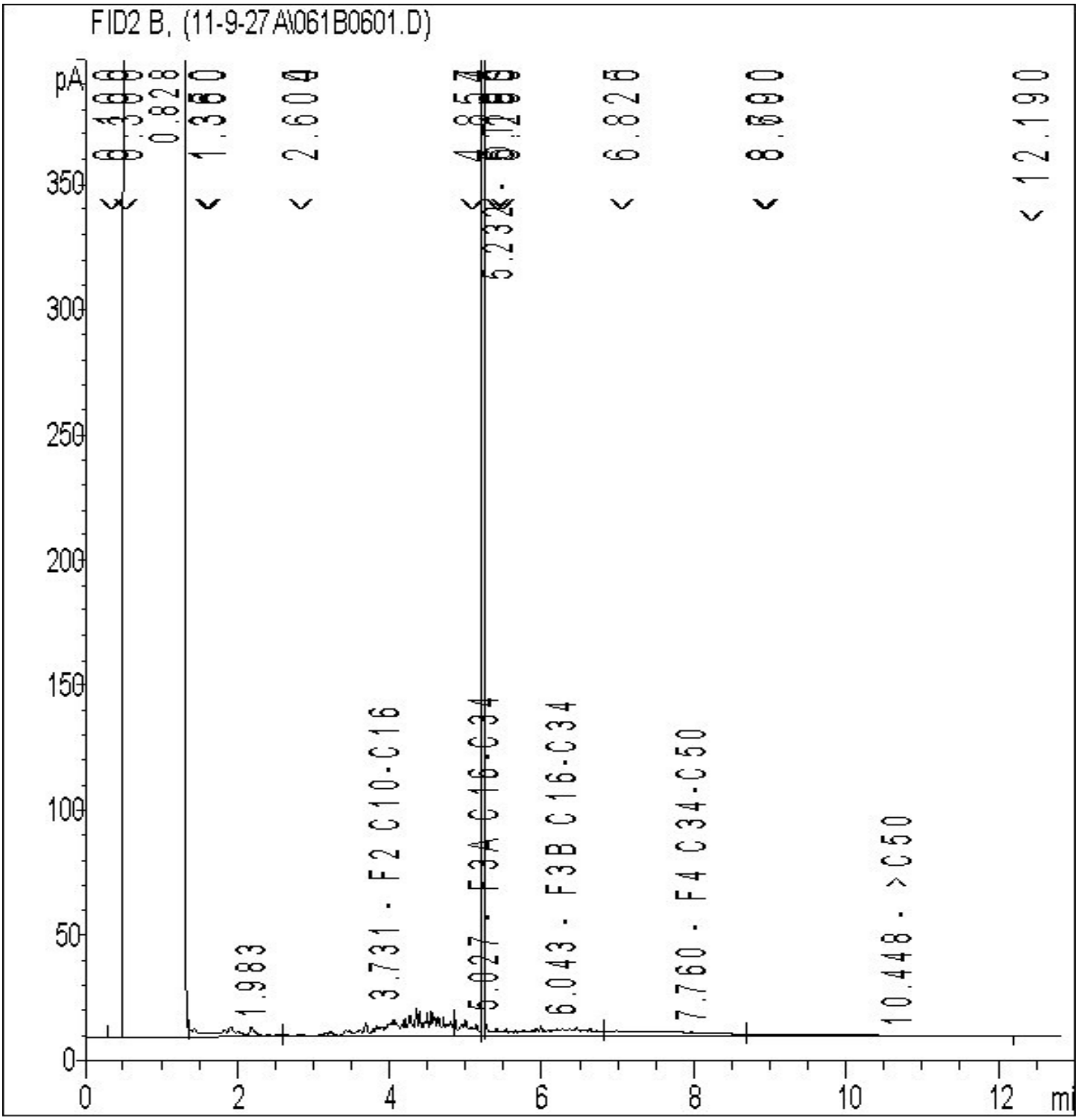
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2011/09/27
Maxxam Job #: B1E8702
Maxxam Sample: LA6468

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: 11-8

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



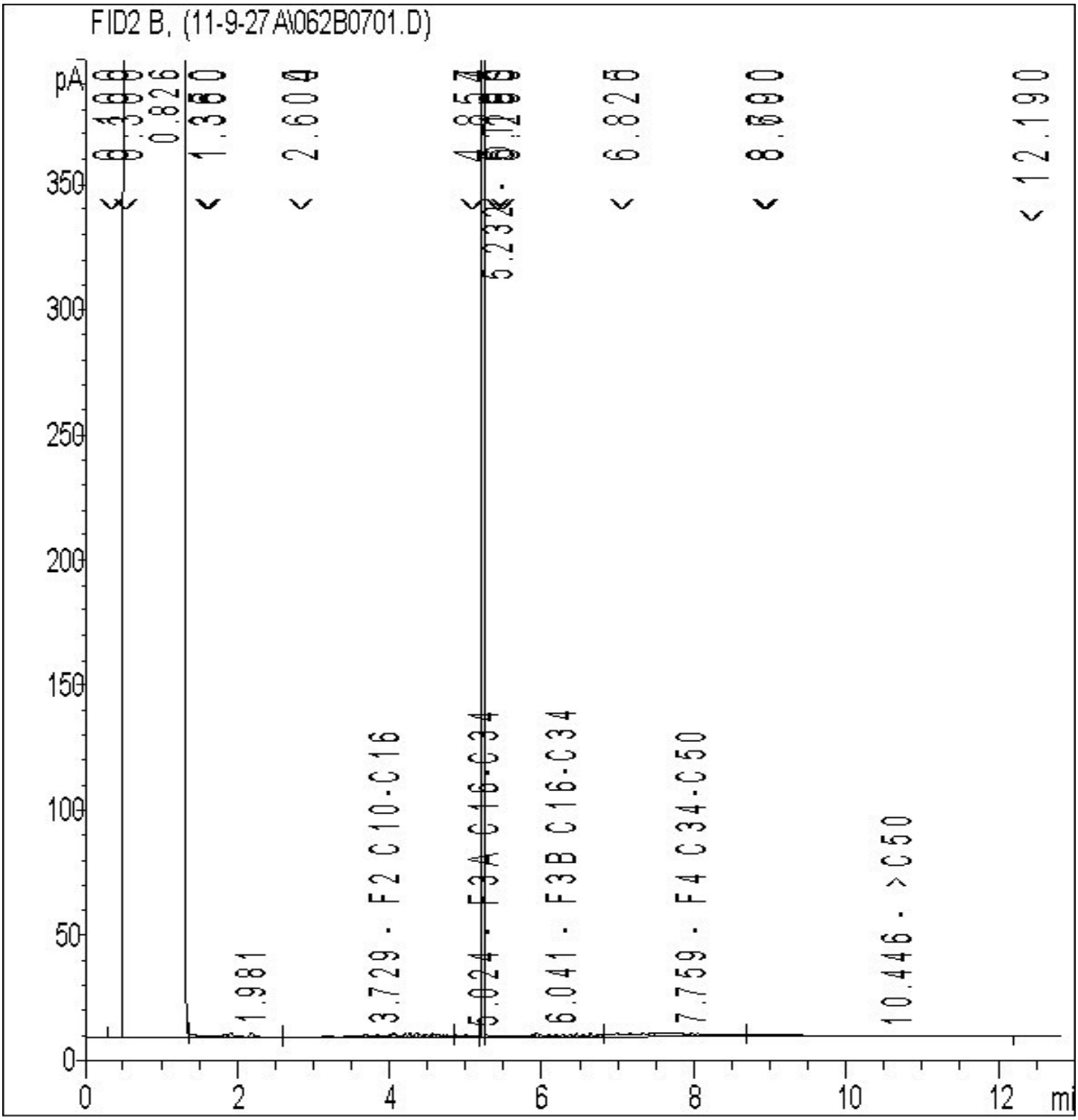
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2011/09/27
Maxxam Job #: B1E8702
Maxxam Sample: LA6469

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: 11-9

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



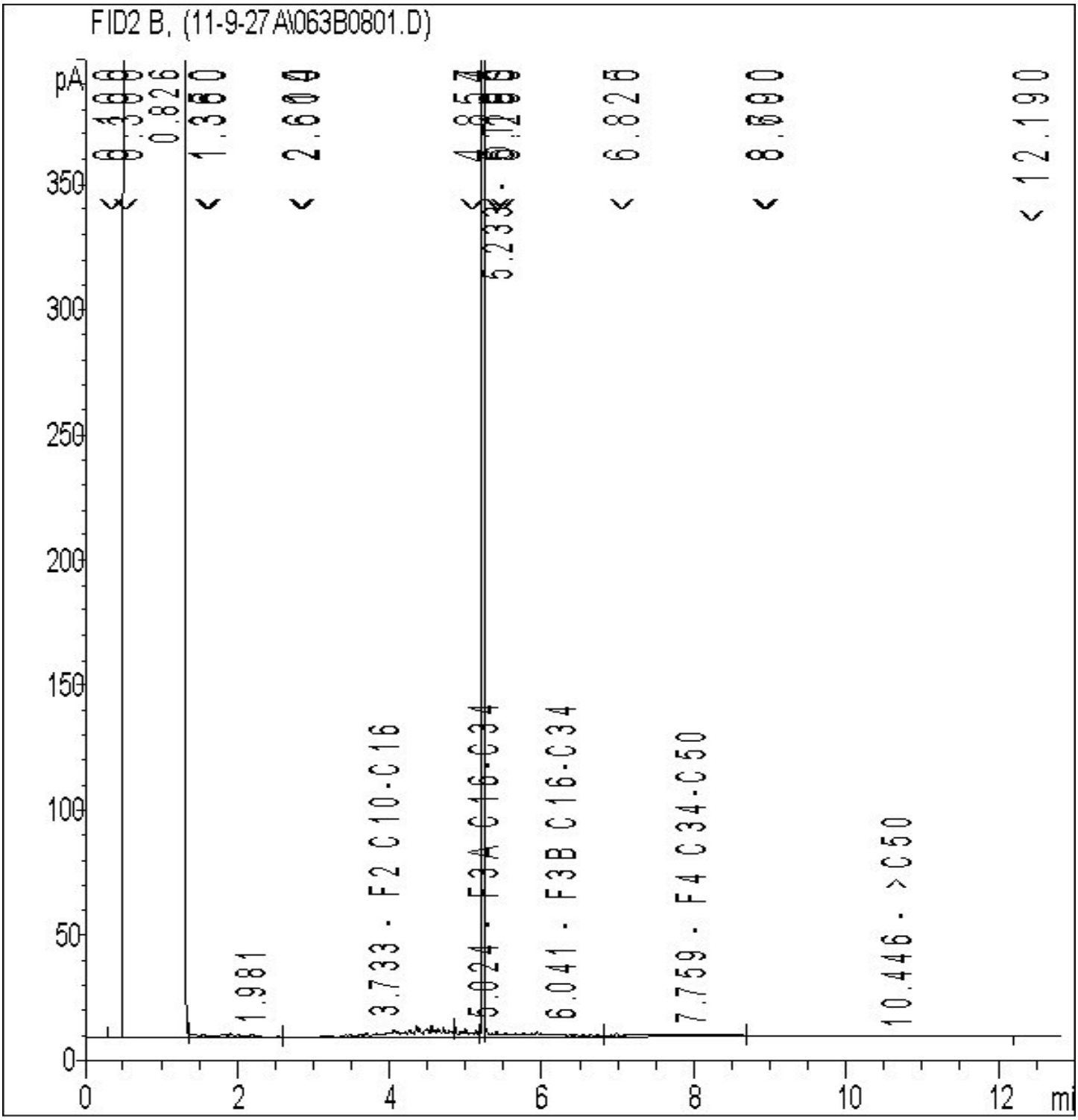
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2011/09/27
Maxxam Job #: B1E8702
Maxxam Sample: LA6470

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: 11-4

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.

Your Project #: 11-1121-0202
Your C.O.C. #: 28251009, 282510-09-01

Attention: Troy Skinner
Golder Associates Ltd
32 Steacie Dr
Kanata, ON
K2K 2A9

Report Date: 2011/09/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1E8924
Received: 2011/09/26, 18:40

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2011/09/27	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	2011/09/27	2011/09/27	OTT SOP-00001	CCME Hydrocarbons

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.

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

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

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
Email: JClement@maxxam.ca
Phone# (613) 274-3549

==========

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: 1

Maxxam Job #: B1E8924
Report Date: 2011/09/28

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: MA

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		LA7863	LA7863	LA7864		
Sampling Date		2011/09/26	2011/09/26	2011/09/26		
	Units	**11-2**	**11-2 Lab-Dup**	**11-7**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons						
Benzene	ug/L	<0.20	<0.20	<0.20	0.20	2628178
Toluene	ug/L	0.30	0.33	<0.20	0.20	2628178
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	0.20	2628178
o-Xylene	ug/L	<0.20	<0.20	<0.20	0.20	2628178
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	2628178
Total Xylenes	ug/L	<0.40	<0.40	<0.40	0.40	2628178
F1 (C6-C10)	ug/L	<25	<25	<25	25	2628178
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	25	2628178
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/L	160		<100	100	2627701
F3 (C16-C34 Hydrocarbons)	ug/L	400		120	100	2627701
F4 (C34-C50 Hydrocarbons)	ug/L	110		100	100	2627701
Reached Baseline at C50	ug/L	YES		YES		2627701
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	104	104	105		2628178
4-Bromofluorobenzene	%	101	74	75		2628178
D10-Ethylbenzene	%	78	103	99		2628178
D4-1,2-Dichloroethane	%	101	111	111		2628178
o-Terphenyl	%	97		82		2627701

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8924
Report Date: 2011/09/28

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: MA

Test Summary

Maxxam ID LA7863 **Collected** 2011/09/26
Sample ID 11-2 **Shipped**
Matrix Water **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2628178	N/A	2011/09/27	PAUL RUBINATO
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2627701	2011/09/27	2011/09/27	LYNDSEY HART

Maxxam ID LA7863 Dup **Collected** 2011/09/26
Sample ID 11-2 **Shipped**
Matrix Water **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2628178	N/A	2011/09/27	PAUL RUBINATO

Maxxam ID LA7864 **Collected** 2011/09/26
Sample ID 11-7 **Shipped**
Matrix Water **Received** 2011/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2628178	N/A	2011/09/27	PAUL RUBINATO
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2627701	2011/09/27	2011/09/27	LYNDSEY HART

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8924
Report Date: 2011/09/28

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: MA

Package 1	18.0°C

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

GENERAL COMMENTS

Custody seal was not present on the cooler.

All sample bottles contained visual sediment, which was included in the analysis as per the Protocol for Analytical Methods Use in the Assesment of Properties under part XV.1 of the Environmental Protection Act.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Job #: B1E8924
Report Date: 2011/09/28

Golder Associates Ltd
Client Project #: 11-1121-0202

Sampler Initials: MA

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2627701	o-Terphenyl	2011/09/27	107	30 - 130	86	30 - 130	93	%		
2627701	F2 (C10-C16 Hydrocarbons)	2011/09/27	95	50 - 130	85	70 - 130	<100	ug/L	NC	50
2627701	F3 (C16-C34 Hydrocarbons)	2011/09/27	95	50 - 130	85	70 - 130	<100	ug/L	NC	50
2627701	F4 (C34-C50 Hydrocarbons)	2011/09/27	95	50 - 130	85	70 - 130	<100	ug/L	NC	50
2628178	1,4-Difluorobenzene	2011/09/27	97	70 - 130	103	70 - 130	103	%		
2628178	4-Bromofluorobenzene	2011/09/27	101	70 - 130	103	70 - 130	76	%		
2628178	D10-Ethylbenzene	2011/09/27	81	70 - 130	106	70 - 130	90	%		
2628178	D4-1,2-Dichloroethane	2011/09/27	102	70 - 130	95	70 - 130	106	%		
2628178	Benzene	2011/09/27	88	70 - 130	100	70 - 130	<0.20	ug/L	NC	40
2628178	Toluene	2011/09/27	100	70 - 130	111	70 - 130	<0.20	ug/L	NC	40
2628178	Ethylbenzene	2011/09/27	98	70 - 130	113	70 - 130	<0.20	ug/L	NC	40
2628178	o-Xylene	2011/09/27	107	70 - 130	118	70 - 130	<0.20	ug/L	NC	40
2628178	p+m-Xylene	2011/09/27	96	70 - 130	110	70 - 130	<0.40	ug/L	NC	40
2628178	F1 (C6-C10)	2011/09/27	92	70 - 130	97	70 - 130	<25	ug/L	NC	40
2628178	Total Xylenes	2011/09/27					<0.40	ug/L	NC	40
2628178	F1 (C6-C10) - BTEX	2011/09/27					<25	ug/L	NC	40

N/A = Not Applicable
RPD = Relative Percent Difference
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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B1E8924

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

PAUL RUBINATO, Analyst, Maxxam Analytics

==========

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 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-653-6266 Fax:(905) 817-5779 www.maxxam.ca

CHAIN OF CUSTODY RECORD

Page of

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#14090 Golder Associates Ltd	Company Name:		Quotation #:	A87099	MAXXAM JOB #:	BOTTLE ORDER #: 282510
Contact Name:	Central Accounting	Contact Name:	~~Sully Sullivan~~ TROY SKINNER	P.O. #:			
Address:	32 Steacie Dr Kanata ON K2K 2A9	Address:		Project #:	11-1121-0202	CHAIN OF CUSTODY #: C#282510-09-01	PROJECT MANAGER: JULIE CLEMENT
Phone:	(613)592-9600 Fax: (613)592-9601	Phone:	tskinner Fax:	Project Name:			
Email:	maxxam@golder.com, OttawaAccounting@golder.c	Email:	~~bsullivan~~@golder.com	Site #:			
				Sampled By:	MIKE ARMITAGE		

Regulation 153 (2011)
☐ Table 1 ☐ Res/Park ☐ Medium/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ 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 (< 10ºC) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☐
(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: 24 HR ☑
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)	Petroleum Hydro. F1 & BTEX in Soil	Petroleum Hydrocarbons F2-F4 in Soil	Petroleum Hydro. F1 & BTEX in Water	Petroleum Hydrocarbons F2-F4 in Water	# of Bottles	Comments
1		11-2	09/26/11		GW					✓	✓	5	RUSH !
2		11-7	"		"					✓	✓	5	RUSH !
3													
4													
5													
6													
7													
8													
9													
10													

27-Sep-11 18:40
JULIE CLEMENT
B1E8924

REC'D IN OTTAWA

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
MIKE ARMITAGE	2011/09/26		Josh Freeman	2011/09/26	18:40	

Laboratory Use Only

Time Sensitive	Temperature (ºC) on Receipt	Custody Seal	Yes	No
	16/18/20	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

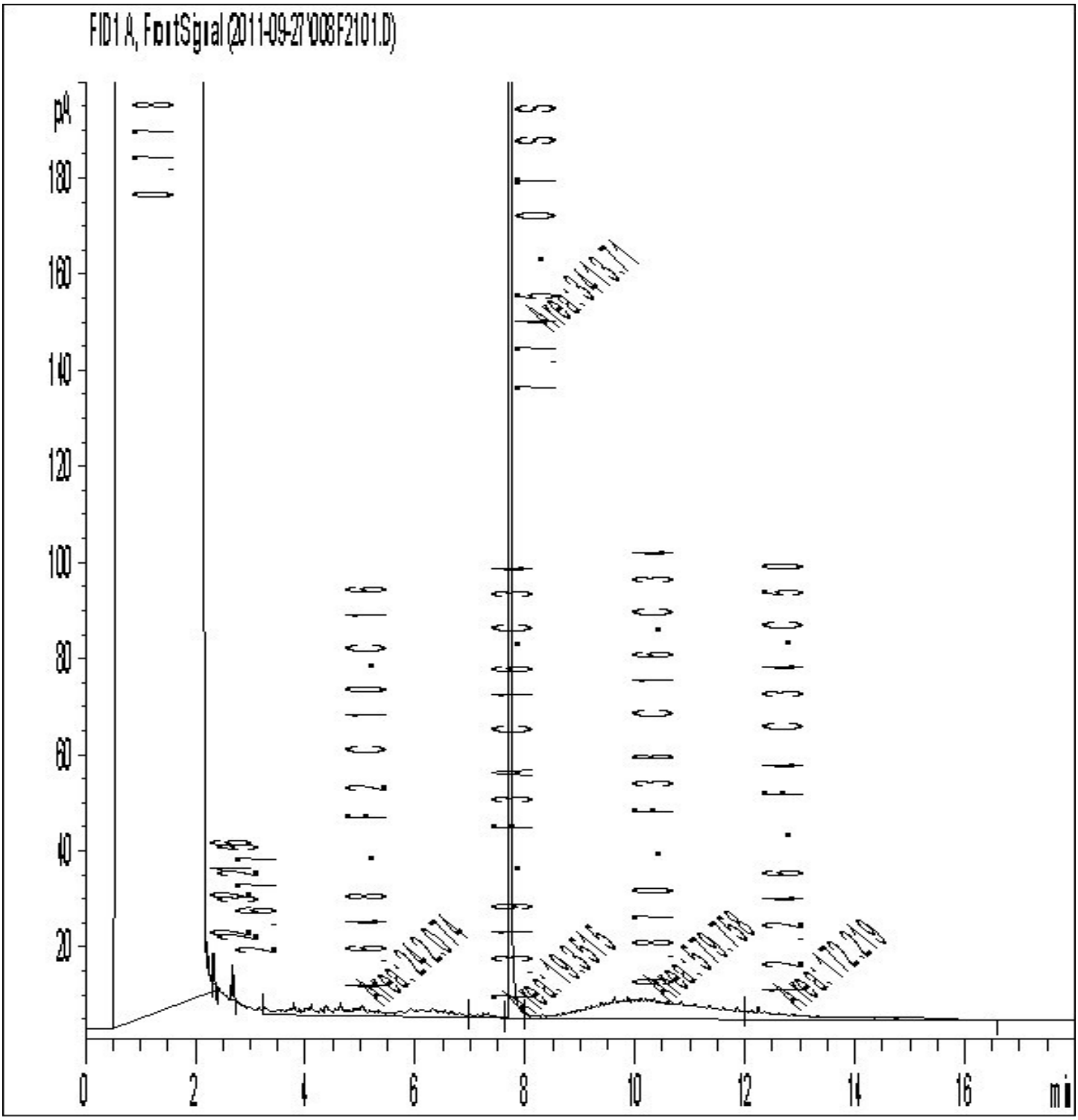
INVOICE

Report Date: 2011/09/28
Maxxam Job #: B1E8924
Maxxam Sample: LA7863

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: 11-2

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



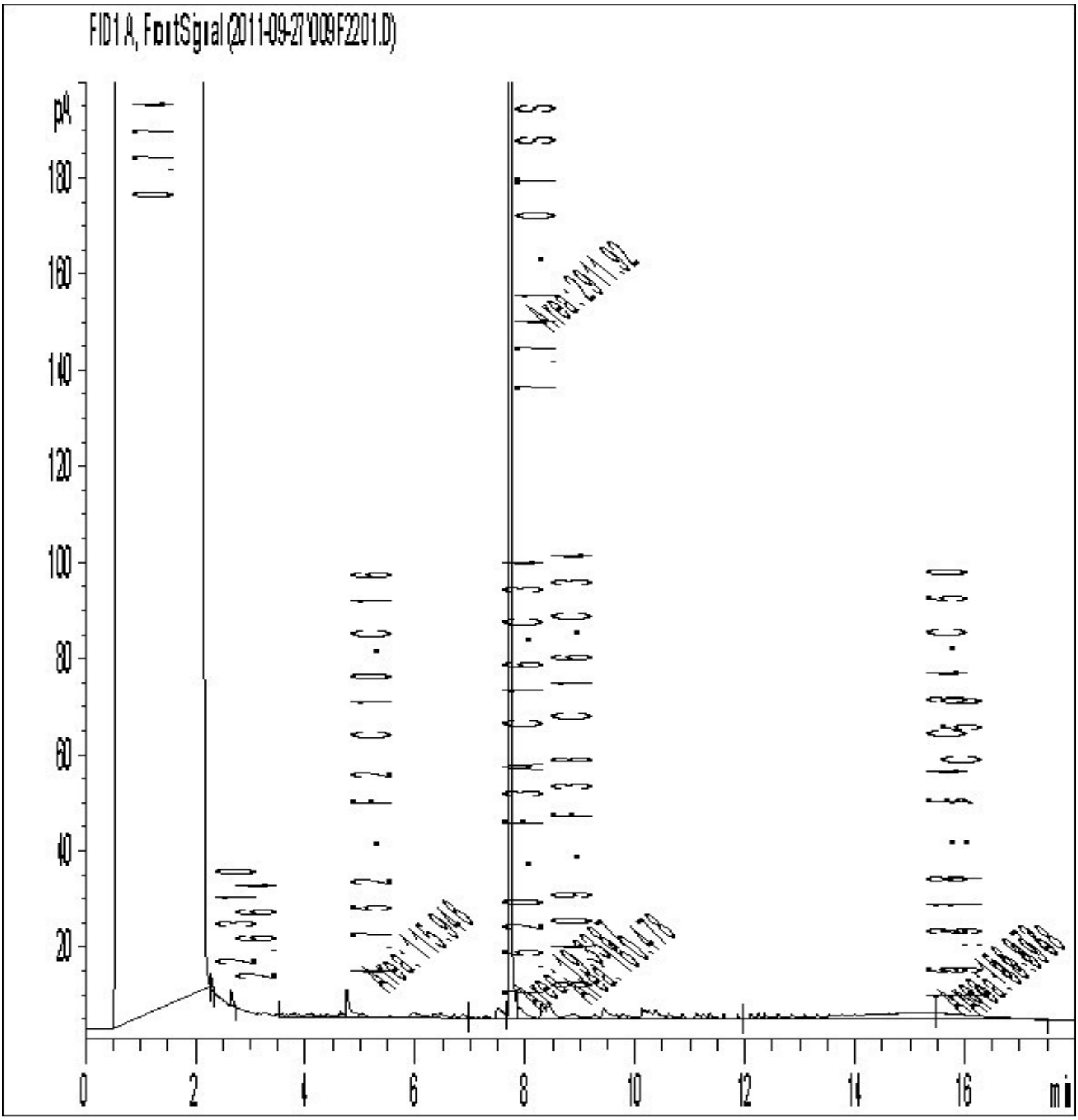
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2011/09/28
Maxxam Job #: B1E8924
Maxxam Sample: LA7864

Golder Associates Ltd
Client Project #: 11-1121-0202

Client ID: 11-7

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 Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxamanalytics.com

At Golder Associates we strive to be the most respected global company providing consulting, design, and construction services in earth, environment, and related areas of energy. Employee owned since our formation in 1960, our focus, unique culture and operating environment offer opportunities and the freedom to excel, which attracts the leading specialists in our fields. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees who operate from offices located throughout Africa, Asia, Australasia, Europe, North America, and South America.

Africa	+ 27 11 254 4800
Asia	+ 86 21 6258 5522
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.
32 Steacie Drive
Kanata, Ontario, K2K 2A9
Canada
T: +1 (613) 592 9600

Golder Associates