Phase II Environmental Site Assessment 208 St. Anne's Road, Winnipeg, Manitoba (Outlet No. 63955)

Prepared for:
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Ref. No.: 10-1177.100

Distribution:

1 copy – Suncor Energy Products Partnership, Site Remediation/Asset Management

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1.0 INTRODUCTION

Under the authorization of Suncor Energy (Suncor), O'Connor Associates Environmental Inc., a Parsons Company (Parsons) conducted Phase II environmental site assessments (ESA) at the former Certigard Car Repair Facility located at 208 St. Anne's Road in Winnipeg, Manitoba (hereafter referred to as the Site). The purpose of the work was to assess the nature and extent of petroleum hydrocarbon impacts beneath the Site. This report summarizes our Site activities and findings.

1.1 SITE FEATURES AND GEOLOGY

The Site location is shown on Drawing No. 1 and a Site plan showing the current and former Site facilities is presented as Drawing No. 2. The borehole and monitoring well locations are shown on Drawing No. 3.

The former Certigard Car Repair Facility is located at 208 St. Anne's Road in Winnipeg, Manitoba. Current Site facilities include a service building (with an inactive car wash) and one waste oil underground storage tank (UST). Former Site facilities included several petroleum USTs and associated product piping and dispensing equipment.

Groundwater in the area is typically not used as a source of drinking water or for industrial purposes. Potable water for the City of Winnipeg is obtained from Shoal Lake, located approximately 125 km east of the city.

According to regional geologic maps, surficial soils in the area generally consist of glacial silt and clay overlying grey calcareous till. The underlying bedrock reportedly consists of dolomitic limestone. Although specific data is not available, regional shallow groundwater flow is expected to be towards the Red River located to the west of the Site.

The Site is zoned for commercial land use.

2.0 SITE ACTIVITIES

2.1 SUBSURFACE INVESTIGATION

During the subsurface investigation, field monitoring and sampling procedures were undertaken in general accordance with Parsons protocols. In addition, during the investigation, both Parsons and Suncor health and safety protocols were followed.

Prior to proceeding with the subsurface investigation, Parsons personnel met with representatives of the various utility companies to locate the underground utilities.

Between April 25, 2012 and April 27, 2012, 12 boreholes (BH3A and BH-19 to BH-29) were advanced to a maximum depth of approximately 6.1 metres below ground surface (mbgs) at selected on-Site locations using a truck-mounted auger drill rig (B-40) equipped with hollow stem and solid stem augers. On October 16, 2012, four boreholes (BH-30 to BH-33) were advanced to a maximum depth of approximately 6.1 mbgs at selected on-Site locations using a truck-mounted auger drill rig (B-40) equipped with solid stem augers. Two boreholes (BH-31 and BH-32) were drilled at a 45 degree angle to assess soil conditions beneath the service building. On February 21, 2013 and February 22, 2013, 11 boreholes (BH-34 to BH-44) were advanced to a maximum depth of approximately 6.1 mbgs at selected on-Site locations using a truck-mounted auger drill rig (B-40) equipped with solid stem augers. Borehole BH-41 was daylighted to approximately 2.4 mbgs prior to drilling. The borehole locations are shown on Drawing No. 3.

Soil samples were obtained from each borehole at regular depth intervals (typically 0.6 m), directly from the augers to permit soil classification and vapour concentration measurements as shown on the borehole logs presented in Appendix A. Each collected soil sample was typically split and one portion immediately sealed in a clean plastic bag (with headspace) for vapour measurement and textural classification. The other portion was sealed in clean, laboratory-supplied glass jars (with no headspace) and stored on ice for possible laboratory analyses. Soil sample headspace vapour concentrations were measured after approximately 15 minutes. Vapour concentrations were measured on-Site using a combustible gas detector (RKI Eagle) having a minimum detection level of 5 parts per million by volume (ppmv). The gas detector was operated in the methane elimination mode.

Selected soil samples (along with field duplicates) were submitted to the Suncor-contracted laboratory, Maxxam Analytics Inc. (Maxxam) located in Edmonton, Alberta and Winnipeg, Manitoba, for analyses of a suite of petroleum hydrocarbon parameters: benzene, toluene, ethylbenzene, and xylenes (BTEX); petroleum hydrocarbons (PHC) fractions F1 to F4 (F1: C_6 - C_{10} , F2: $>C_{10}$ - C_{16} , F3: $>C_{16}$ - C_{34} and F4: $>C_{34}$ - C_{50}); lead scavengers, specifically 1,2-dibromoethane (1,2-DBA) and 1,2-dichloroethane (1,2-DCA); lead; selected polycyclic aromatic hydrocarbons (PAHs); selected metals; and, selected glycols and grain size.

A monitoring well, consisting of a 51 mm diameter polyvinyl chloride (PVC) 10 slot screen and an un-slotted riser, was installed in boreholes BH3A, BH-19 to BH-21, BH-24 to BH-29, BH-34 and BH-35. The annular space between the PVC well and the borehole wall was backfilled to approximately 0.3 m above the top of the screen with #2 silica sand, and then with hydrated bentonite pellets to approximately 0.15 mbgs. The monitoring wells were then finished with a flush-mount casing. The borehole and monitoring well construction details are presented on the borehole logs in Appendix A.

Soil cuttings were stored on-Site in soil bags, and removed from Site by Mid-Canada Environmental Services Ltd., under contract to Parsons. The soil was disposed of at the Mid-Canada soil recycling facility located in Ile des Chene, Manitoba.

2.2 GROUNDWATER MONITORING AND SAMPLING

On June 6, 2012 and February 28, 2013 the vertical elevations of the monitoring wells were surveyed. The benchmark location is shown on Drawings No. 4 and 5 and described in Table 1. On June 15, 2012, October 16, 2012 and February 28, 2013, the horizontal locations of the boreholes/monitoring wells were surveyed.

On April 25, 2012, all accessible previously existing monitoring wells were monitored for subsurface vapour concentrations, water levels, and the presence or absence of light non-aqueous phase liquids (free product). On June 13, 2012, February 28, 2013 and March 14, 2013, all accessible previously existing and newly installed monitoring wells were monitored for subsurface vapour concentrations, water levels, the presence or absence of light non-aqueous phase liquids (free product); and, were purged in preparation for water sampling. A groundwater sample could not be obtained from monitoring well BH-34 due to dry conditions in the well. Due to accessibility issues, monitoring wells BH1, BH2, BH17, BH-21 and BH-25 were monitored on July 19, 2012 or August 16, 2012.

During the 2012 sampling events (June 13, 2012, July 19, 2012 and August 16, 2012), and 2013 sampling event (March 14, 2013), groundwater samples were obtained from the previously existing and newly installed monitoring wells. A groundwater sample could not be obtained from monitoring well BH-34 due to dry conditions in the well.

The groundwater samples were submitted to Maxxam for analyses of petroleum hydrocarbon parameters: BTEX, PHC fractions F1 and F2, 1,2-DBA, 1,2-DCA and lead. Furthermore, during the 2012 sampling events, selected samples were submitted for analyses of selected PAHs, selected metals and selected glycols.

In addition, field duplicate samples and field and trip blank samples were prepared and submitted for the appropriate analyses for quality control purposes.

3.0 RESULTS OF THE INVESTIGATION

3.1 STRATIGRAPHY

The soil profile encountered during drilling of the boreholes generally consisted of asphalt underlain by fill material (sand and/or gravel). The underlying native soil profile generally consisted of interlayered silt and clay which extended to the maximum depth of investigation, approximately 6.1 mbgs. Fill material (former tank nest) was encountered in boreholes BH-19, BH-30 and BH-40 to maximum depth of approximately 4.4 mbgs.

Detailed descriptions of the soil profile at each borehole location are presented in the borehole logs in Appendix A.

3.2 GROUNDWATER CONDITIONS

On June 13, 2012, the depth to groundwater ranged from 1.45 mbgs to 3.67 mbgs and on March 14, 2013, the depth to groundwater ranged from 2.04 mbgs to 2.85 mbgs. The groundwater potentiometric surface elevations are presented on Drawings No. 4 and 5. As indicated, on June 13, 2012, the inferred principal direction of groundwater flow was to the north and on March 14, 2013, the inferred principal direction of groundwater flow was to the east.

The groundwater depths, calculated potentiometric elevations and the measured product thicknesses are presented in Table 1.

3.3 Subsurface Liquid-Phase Petroleum Hydrocarbons

On April 25, 2012, a sheen of subsurface liquid phase hydrocarbons (LPH) were detected at the water surface in monitoring wells BH5 and BH7.

3.4 SUBSURFACE VAPOUR CONCENTRATIONS

Headspace vapour concentrations measured on the soil samples collected during the drilling events are presented on the borehole logs in Appendix A. A maximum headspace vapour concentration of >100% lower explosive limit (LEL) was measured in soil samples recovered from 1.7 mbgs to 2.0 mbgs and 2.3 mbgs to 2.6 mbgs in borehole BH-24. Elevated vapour concentrations (>5% LEL) were measured in selected soil samples recovered from boreholes BH-20, BH-22 to BH-25, BH-43 and BH-44.

Subsurface vapour concentrations measured in the monitoring wells during the 2012 and 2013 monitoring events are summarized in Table 1. A maximum subsurface vapour concentration of >100% LEL was measured in monitoring wells BH5 on March 14, 2013, and BH7 on June 13, 2012 and March 14, 2013.

4.0 APPLICABLE CRITERIA SELECTION

For the assessment work, Manitoba Conservation's direction to adopt the Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQG) (2010) and Canada Wide Standards for Petroleum Hydrocarbons in Soil (CWS) (2008) was followed. Where CCME has no criteria, criteria from the Alberta Environment (AENV) Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2010) and the Ontario Ministry of the Environment (MOE) Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (2011) were selected for comparison.

4.1 SOIL CRITERIA

With respect to hydrocarbon constituents in soil, the selected applicable criteria considers one or more of the following: grain size, land use, a suite of human health and environmental health exposure pathways.

The Site is currently zoned for commercial land use, and the dominant soil type encountered during the Site investigation activities was characterized as fine-grained. This led to the selection of criteria concerning fine-grained surface and sub-surface soils in a commercial land use setting.

The selected applicable soil criteria are those presented under the CCME CEQG Canadian Soil Quality Guidelines for the Protection of Environment and Human Health (2010) Tables 2 and 3 Soil quality guidelines and check values for BTEX, selected PAHs, selected metals and selected glycols; the CCME CWS (2008) Table 2 Tier 1 levels for PHCs for fine-grained surface soils and Table 4 Tier 1 levels for PHCs for fine-grained subsoils for PHC fractions F1 to F4; and, the AENV (2010) Table A-4 Surface Soil Remediation Guidelines Values for Commercial Land Use – All Exposure Pathways for 1,2-DCA.

Note, there is currently no applicable criterion for 1,2-DBA or propylene glycol in soil.

4.2 GROUNDWATER CRITERIA

With respect to petroleum hydrocarbon constituents in groundwater, the applicable criteria considers one or more of the following: grain size, land use, a suite of human health and environmental health exposure pathways.

The City of Winnipeg is supplied with potable water from a municipal water supply system which obtains water from Shoal Lake located approximately 125 km southeast of the City. This led to the selection of criteria concerning a non-potable aquifer in fine-grained surface soils within a commercial land use setting.

The selected applicable groundwater criteria are those presented under the AENV (2010) Table B-4 Groundwater Remediation Guidelines for Commercial/Industrial – All Water Uses for BTEX, PHC fractions F1 and F2, 1,2-DCA and selected PAHs; and, the MOE (2011) Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Conditions for selected metals.

Note, there is currently no applicable criteria for 1,2-DBA, acenaphthene, benzo(a)anthracene, benzo[a]pyrene equivalency, fluorene, naphthalene, phenanthrene, pyrene, ethylene glycol and propylene glycol in groundwater.

4.3 RESULTS OF LABORATORY ANALYSIS

As noted above, soil samples were analyzed by Maxxam for BTEX, PHC fractions F1 to F4, 1,2-DBA, 1,2-DCA, lead, selected PAHs, selected metals, selected glycols and grain size. The laboratory certificates are presented in Appendix B, along with a quality assurance/quality control (QA/QC) program review forms.

4.4 SOIL CHEMISTRY

The results of laboratory chemical analyses conducted on the selected soil samples recovered during drilling are summarized in Tables 2 to 7 along with the referenced applicable criteria. As the data in the tables indicate, one or more of the following: benzene, PHC fractions F1 and F2, lead and arsenic concentrations exceeded the applicable criteria in soil samples collected from the following locations (and depths):

- BH-20 (2.3 mbgs to 2.6 mbgs);
- BH-21 (3.5 mbgs to 3.8 mbgs);
- BH-22 (2.3 mbgs to 2.6 mbgs) (and its duplicate);
- BH-24 (2.3 mbgs to 2.6 mbgs);
- BH-37 (0.0 mbgs to 0.6 mbgs);
- BH-43 (1.8 mbgs to 2.4 mbgs); and,
- BH-44 (1.2 mbgs to 1.8 mbgs and 1.8 mbgs to 2.4 mbgs) (and its duplicate).

All of the results met the applicable criteria in soil samples collected from boreholes BH-19, BH-23, BH-25 to BH-36 and BH-38 to BH-42.

4.5 HYDROCHEMISTRY

The results of the hydrochemical analysis of the groundwater samples collected during the 2012 sampling events (June 13, 2012, July 19, 2012 and August 16, 2012) and 2013 sampling event (March 15, 2013) from all monitoring wells are summarized in Tables 8 to 11 along with the referenced applicable criteria. As the data in the tables indicates, one or more of the following: benzene and PHC fractions F1 and F2 concentrations exceeded the applicable criteria in groundwater samples collected from the following locations:

- DUP-2 (BH5 duplicate);
- BH7;
- BH-20;
- BH-24; and,
- BH-27.

All of the results met the applicable criteria in groundwater samples collected from monitoring wells BH1, BH2, BH3A, BH6, BH9, BH17, BH-19, BH-21, BH-25, BH-26, BH-28, BH-29 and BH-35.

4.6 QUALITY ASSURANCE/QUALITY CONTROL

A QA/QC program was implemented to reduce and quantify potential issues introduced during sample collection, handling, shipping and analysis. The program included, but was not limited to, using dedicated sampling equipment, using sample specific identification and labelling procedures, and using chain of custody records.

The soil QA/QC samples submitted to the laboratory included nine field duplicate soil samples for BTEX, PHC fractions F1 to F4, 1,2-DBA, 1,2-DCA and lead.

The groundwater QA/QC samples submitted to the laboratory included five field duplicate groundwater samples for BTEX, PHC fractions F1 and F2, 1,2-DBA, 1,2-DCA and lead; one field duplicate groundwater sample for selected PAHs; one field duplicate groundwater sample for selected metals and selected glycols; and, two field blank and trip blank groundwater samples for BTEX and PHC fraction F1.

5.0 SUMMARY

Between April 25, 2012 and March 15, 2013, environmental site assessments were conducted at the former Certigard Car Repair Facility (No. 63955) located at 208 St. Anne's Road in Winnipeg, Manitoba. The purpose of the work was to assess the nature and extent of petroleum hydrocarbon impacts beneath the Site. The following are the key investigation findings:

- The soil profile encountered during drilling of the boreholes generally consisted of asphalt underlain by fill material (sand and/or gravel). The underlying native soil profile generally consisted of interlayered silt and clay which extended to the maximum depth of investigation, approximately 6.1 mbgs. Fill material (former tank nest) was encountered in boreholes BH-19, BH-30 and BH-40 to maximum depth of approximately 4.4 mbgs;
- The groundwater levels in the monitoring wells ranged from 1.45 mbgs to 3.67 mbgs on June 13, 2012 and 2.04 mbgs to 2.85 mbgs on March 14, 2013. On June 13, 2012, the inferred principal direction of groundwater flow was to the north and on March 14, 2013, the inferred principal direction of groundwater flow was to the east;
- A sheen of LPH were detected at the water surface in monitoring wells BH5 and BH7 on April 25, 2012;

- A maximum headspace vapour concentration of >100% LEL was measured in soil samples recovered from 1.7 mbgs to 2.0 mbgs and 2.3 mbgs to 2.6 mbgs in borehole BH-24;
- A maximum subsurface vapour concentration of >100% LEL was measured in monitoring well BH7 on June 13, 2012. Elevated vapour concentrations (>5% LEL) were measured in selected soil samples recovered from boreholes BH-20, BH-22 to BH-25, BH-43 and BH-44;
- One or more of the following: benzene, PHC fractions F1 and F2, lead and arsenic concentrations exceeded the applicable criteria in soil samples collected from boreholes BH-20 to BH-22, BH-24, BH-37, BH-43 and BH-44;
- All of the results met the applicable criteria in soil samples collected from boreholes BH-19, BH-23, BH-25 to BH-36 and BH-38 to BH-42;
- One or more of the following: benzene and PHC fractions F1 and F2 exceeded the applicable criteria in groundwater samples collected from DUP-2 (BH5 duplicate), BH7, BH-20, BH-24 and BH-27; and,
- All of the results met the applicable criteria in groundwater samples collected from monitoring wells BH1, BH2, BH3A, BH6, BH9, BH17, BH-19, BH-21, BH-25, BH-26, BH-28, BH-29 and BH-35.

6.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by O'Connor Associates Environmental Inc., a Parsons Company, for Suncor. It is intended for the sole and exclusive use of Suncor, its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Suncor"). Any use, reliance on or decision made by any person other than Suncor based on this report is the sole responsibility of such other person. Suncor and O'Connor Associates Environmental Inc., a Parsons Company make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by O'Connor Associates Environmental Inc., a Parsons Company, with respect to this report and any conclusions or recommendations made in this report reflect O'Connor Associates Environmental Inc., a Parsons Company's judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out or noted in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the Site, substances addressed by this investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Suncor, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of O'Connor Associates Environmental Inc., a Parsons Company. Nothing in this report is intended to constitute or provide a legal opinion.

7.0 CLOSURE

This report has been prepared in accordance with generally accepted environmental engineering practices for the exclusive use of Suncor.

The reported information is believed to provide a reasonable preliminary representation of the general environmental conditions at the Site. However, with respect to the referenced Phase II report, the data were collected at specific locations and conditions may vary at other locations. The referenced Phase II work was limited to a study of those contaminants specifically addressed in the Phase II report.

We trust that the foregoing information is satisfactory for your present requirements. Should you have any questions, please do not hesitate to contact the undersigned.

Yours very truly,

O'CONNOR ASSOCIATES ENVIRONMENTAL INC., A PARSONS COMPANY

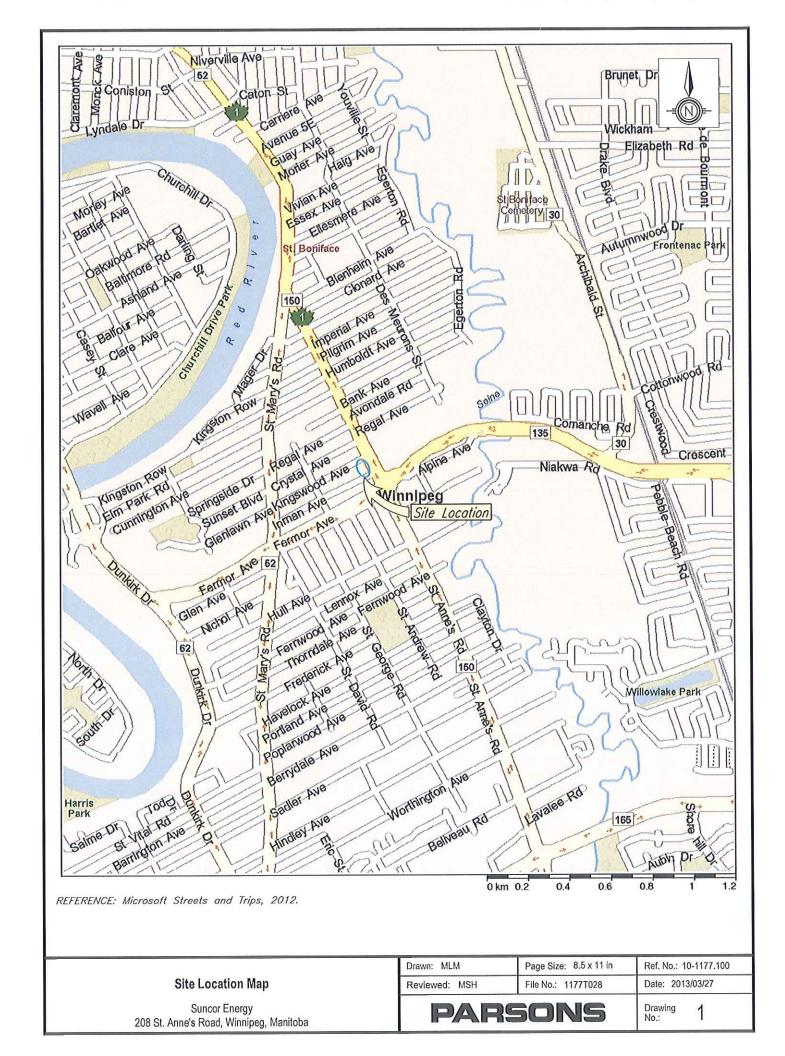
Alexia Reske-Naurocki, B.Env.Sc.

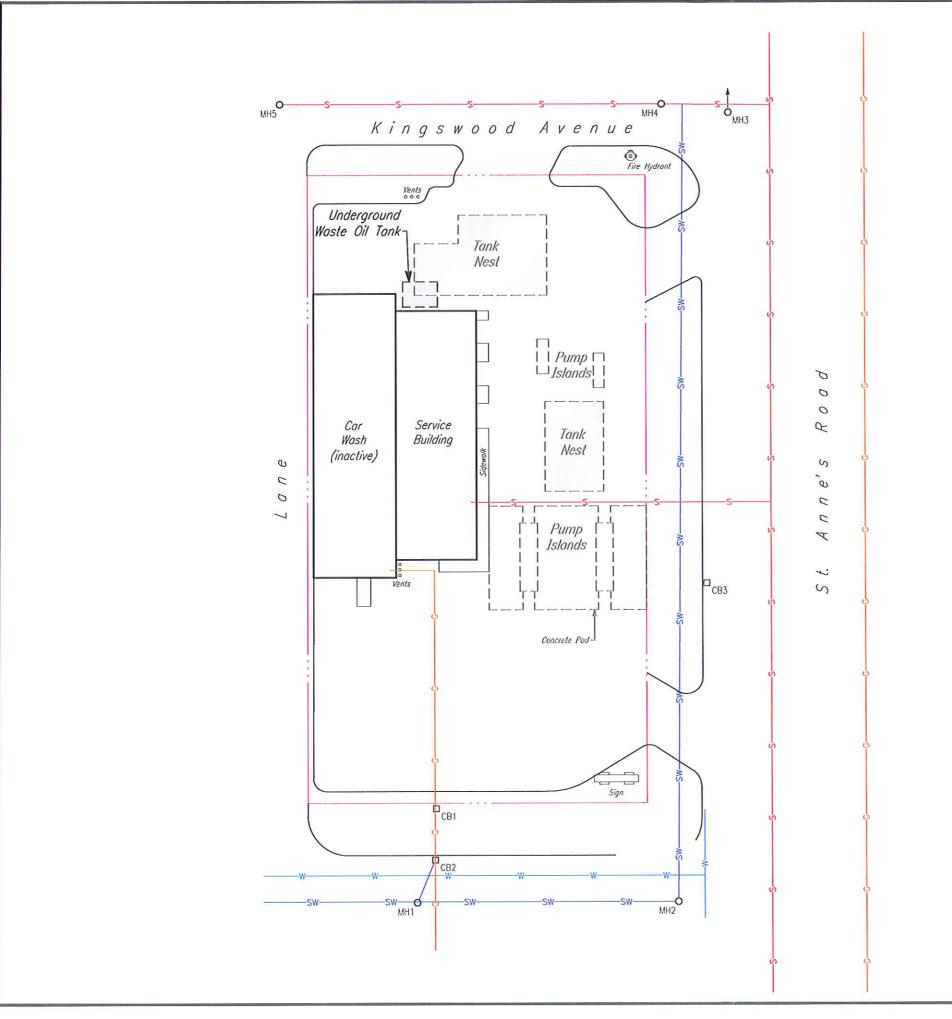
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Carrie D. Strachan, B.Sc., C.E.T.

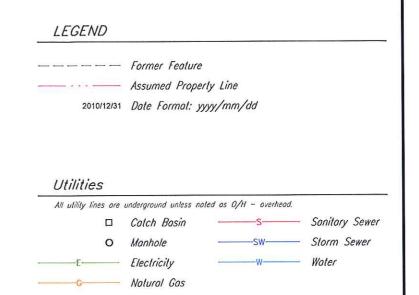


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NOTE: All features are approximate.



Site Plan

Suncor Energy 208 St. Anne's Road, Winnipeg, Manitoba

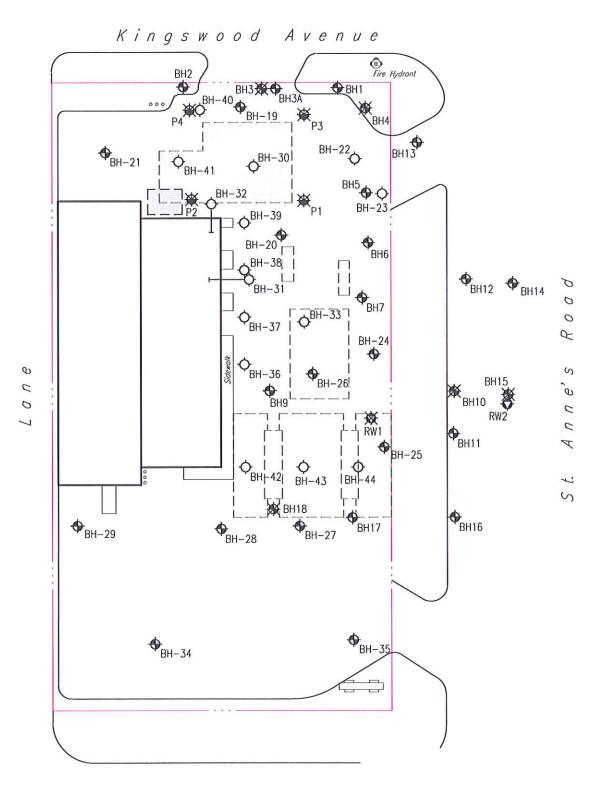
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Drawing No.: 2

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————— Former Feolure Assumed Property Line φ Borehole BH-22 and BH-23 by Parsons, 2012 BH-30 and BH-33 by Parsons, 2012 BH-36 to BH-44 by Parsons, 2013 Angled Borehole
BH-31 and BH-32 by Parsons, 2012 Monitoring Well BH1, BH2, BH5 to BH7, BH9, BH11 to BH14, BH16 and BH17, Unknown BH3A, BH-19 to BH-21 and BH-24 to BH-29 by Parsons, 2012 BH-34 and BH-35 by Parsons, 2013 Recovery Well Destroyed Monitoring Well Destroyed Recovery Well ₩ Destroyed Piezometer 2010/12/31 Date Format: yyyy/mm/dd

NOTE: All features are approximate.

20m Scale 1:400

Borehole and Monitoring Well Location Plan

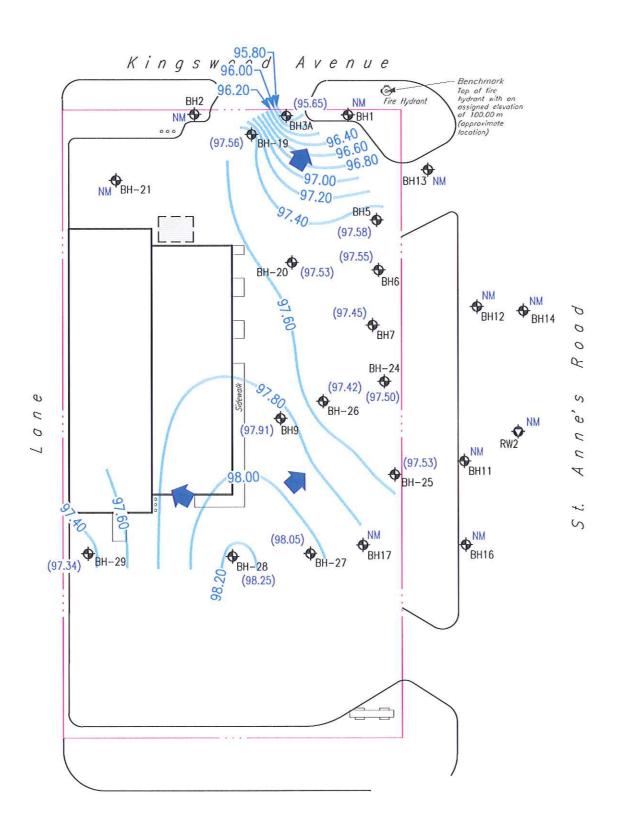
Suncor Energy 208 St. Anne's Road, Winnipeg, Manitoba

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Drawing No.:





- Assumed Property Line

♦ Monitoring Well

Recovery Well

2010/12/31 Date Format: yyyy/mm/dd

-49.00 Potentiometric Surface Contour with Elevation, metres

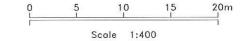
(49.00) Potentiometric Surface Elevation, metres

(49.00)* Value Not Used for Contouring

NM Well Not Monitored

NOTE: Contouring based on Surfer® linear kriging computer modelling.

NOTE: All features are approximate.

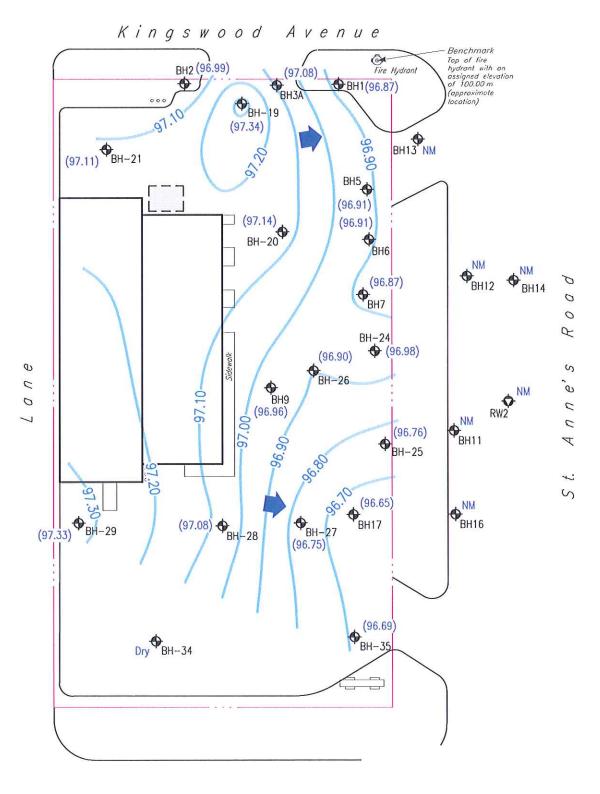


Elevation of the Groundwater Potentiometric Surface 2012/06/13

Suncor Energy 208 St. Anne's Road, Winnipeg, Manitoba

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	SONS	Drawing 4





- Assumed Property Line

♦ Monitoring Well

Recovery Well

2010/12/31 Date Formal: yyyy/mm/dd

49.00 Potentiometric Surface Contour with Elevation, metres

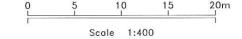
(49.00) Potentiometric Surface Elevation, metres

(49.00)* Value Not Used for Contouring

NM Well Not Monitored

NOTE: Contouring based on Surfer® linear kriging computer modelling.

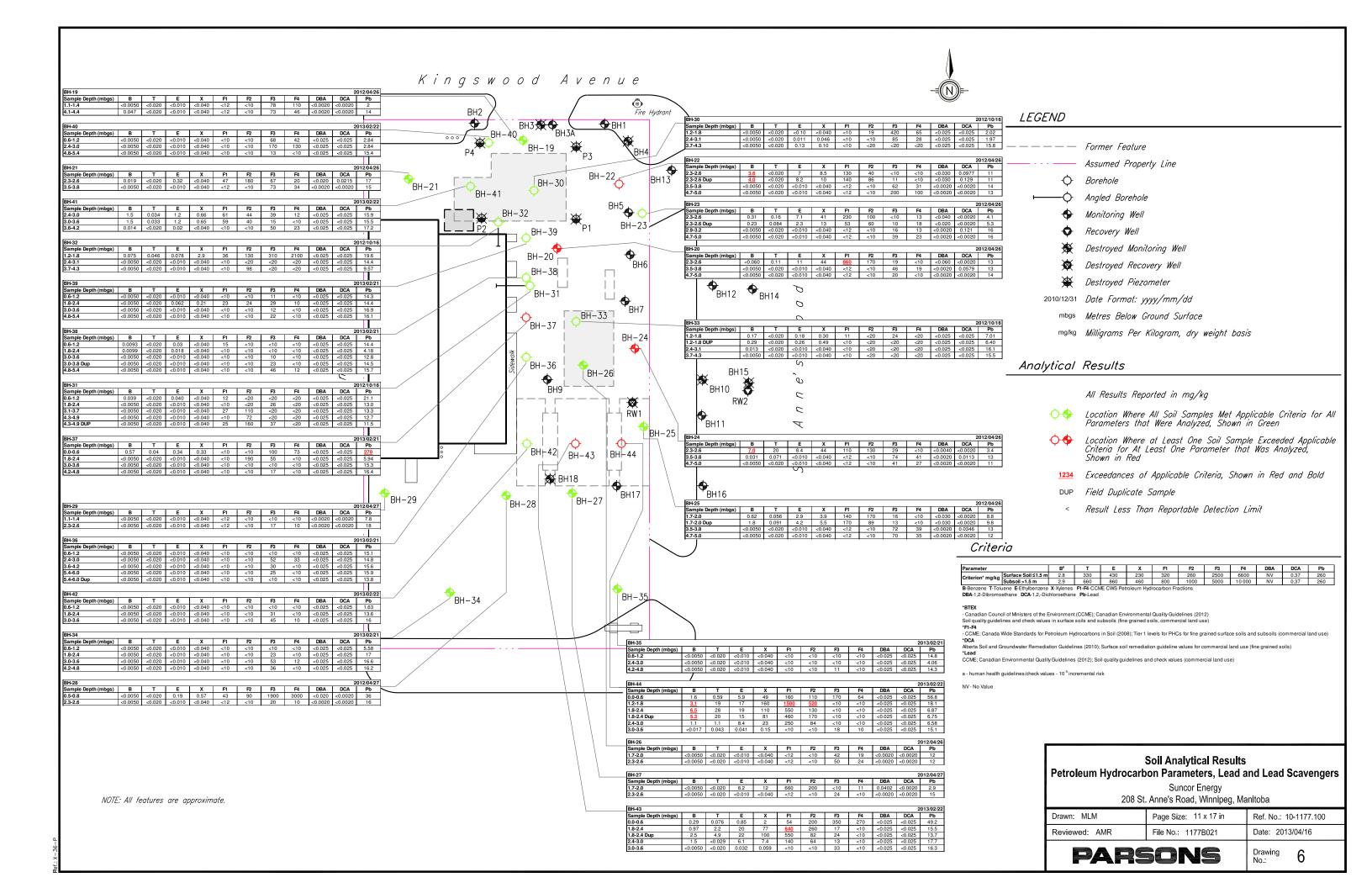
NOTE: All features are approximate.



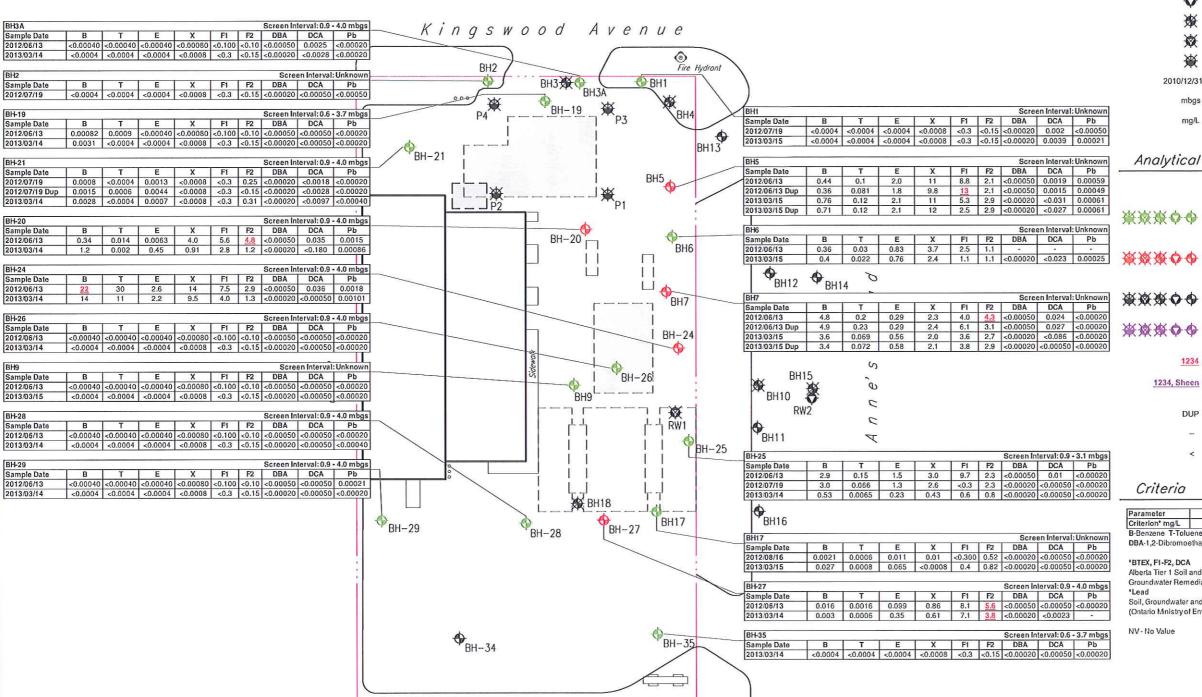
Elevation of the Groundwater Potentiometric Surface 2013/03/14

Suncor Energy 208 St. Anne's Road, Winnipeg, Manitoba

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———— Former Feature

Assumed Property Line

Monitoring Well

Recovery Well

Destroyed Monitoring Well

Destroyed Recovery Well

Destroyed Piezometer

2010/12/31 Date Format: yyyy/mm/dd

mbgs Metres Below Ground Surface

mg/L Milligrams Per Litre

Analytical Results

All Results Reported in mg/L

※ ※ ※ ◆ ◆

Location Where Most Recent Groundwater Sample Met Applicable Criteria for All Parameters that Were Analyzed, Shown in Green

Location Where Most Recent Groundwater Sample Exceeded Applicable Criteria for At Least One Parameter that Was Analyzed, Shown in Red

Location Where No Groundwater Sample Was Submitted From the Most Recent Sampling Event, Shown in Black ◆◆後後後

●◆後後後 Location Where Measurable Free Product or Sheen Was Observed From Most Recent Sampling Event, Shown in Purple

1234 Exceedances of Applicable Criteria, Shown in Red and Bold

Free Product Apparent Thickness (in millimetres), or Sheen, Shown in Purple and Bold

DUP Field Duplicate Sample

Not Analyzed

Result Less Than Reportable Detection Limit

Criteria

Parameter	В	T	E	X	F1	F2	DBA	DCA	Pb
Criterion* mg/L	19	240	150	74	9.9	3.1	NV	1.2	0.025

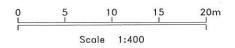
B-Benzene T-Toluene E-Ethylbenzene X-Xylenes F1-F2-CCME CWS Petroleum Hydrocarbon Fractions DBA-1.2-Dibromoethane DCA-1.2-Dichloroethane Pb-Lead

Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2010);

Groundwater Remediation Guideline Values for Commercial/Industrial (fine grained soils)

Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act; (Ontario Ministry of Environment and Energy, 2011); (non-potable groundwater criteria; all property uses)

NV - No Value



Groundwater Analytical Results Petroleum Hydrocarbon Parameters, Lead and Lead Scavengers

Suncor Energy 208 St. Anne's Road, Winnipeg, Manitoba

TABLE 1

GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION ¹ (m)	GROUND SURFACE ELEVATION ¹ (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS ²	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH ³ (mbgs)	POTENTIOMETRIC ELEVATION ^{1,3} (m)
BH1	99.17	99.29	unknown	2012/04/25	5	ND	1.38	97.92
				2012/06/13	NM	NM	NM	NM
				2012/07/19	<5	ND	1.72	97.57
				2013/02/28	45	ND	2.39	96.90
				2013/03/14	15	ND	2.42	96.87
BH2	99.25	99.28	unknown	2012/04/25	40	ND	ND	ОИ
				2012/06/13	NM	NM	NM	NM
				2012/07/19	<5	ND	1.67	97.61
				2013/02/28	45	ND	2.24	97.04
				2013/03/14	<5	ND	2.28	96.99
ВНЗА	99.25	99.31	0.9 - 4.0	2012/06/13	70	ND	3.67	95.65
				2013/02/28	NM	NM	NM	NM
				2013/03/14	65	ND	2.23	97.08
BH5	99.27	99.32	unknown	2012/04/25	30	<1	1.81	97.51
				2012/06/13	70	ND	1.74	97.58
				2013/02/28	>100%	ND	2.40	96.92
				2013/03/14	>100%	ND	2.41	96.91
BH6	99.28	99.35	unknown	2012/04/25	20	ND	1.89	97.46
				2012/06/13	75	ND	1.80	97.55
				2013/02/28	29%	ND	2.39	96.96
				2013/03/14	180	ND	2.44	96.91
BH7	99.32	99.40	unknown	2012/04/25	68%	<1	2.03	97.37
				2012/06/13	>100%	ND	1.95	97.45
				2013/02/28	>100%	ΝD	2.49	96.91
				2013/03/14	>100%	ND	2.53	96.87

^{1 -} Relative to local benchmark (fire hydrant at northeast comer of Site) having an assigned elevation of 100.00 m

m - metres

mbgs - metres below ground surface

mm - millimetres

ND - Not detected

NM - Not monitored

^{2 -} ppmv if not indicated, or % LEL if indicated

^{3 -} Calculated using product thicknesses corrected by a specific gravity of 0.75 g/cm³

TABLE 1

GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION ¹ (m)	GROUND SURFACE ELEVATION ¹ (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR THICKNESSES CONCENTRATIONS ² (mm) POTENTIOMETRIC DEPTH ³ (mbgs)		POTENTIOMETRIC ELEVATION ^{1,3} (m)	
BH9	99.63	99.72	unknown	2012/04/25	<5	ND	2.31	97.41
				2012/06/13	55	ND	1.81	97.91
				2013/02/28	60	ND	2.70	97.02
				2013/03/14	45	ND	2.75	96.96
BH17	99.39	99.50	unknown	2012/04/25	180	ND	2.05	97.44
		1		2012/06/13	NM	NM	NM	NM
				2012/08/16	120	ND	1.98	97.51
				2013/02/28	NM	NM	NM	NM
				2013/03/14	310	ND	2.85	96.65
BH-19	99.28	99.38	0.6 - 3.7	2012/06/13	60	ND	1.82	97.56
				2013/02/28	NM	NM	NM	NM
				2013/03/14	<5	ND	2.04	97.34
BH-20	99.52	99.60	0.9 - 4.0	2012/06/13	50	ND	2.07	97.53
2.1.20				2013/02/28	470	ND	2.44	97.16
				2013/03/14	6%	ND	2.46	97.14
BH-21	99,62	99.70	0.9 - 4.0	2012/06/13	NM	NM	NM	NM
Bii Li				2012/07/19	70	ИĎ	1.81	97.89
				2013/02/28	80	ND	2.56	97.14
				2013/03/14	60	ND	2.59	97.11
BH-24	99.51	99.60	0.9 - 4.0	2012/06/13	15%	ND	2.10	97.50
				2013/02/28	>100%	ND	2.62	96.97
			l	2013/03/14	25%	ND	2.61	96.98

^{1 -} Relative to local benchmark (fire hydrant at northeast corner of Site) having an assigned elevation of 100.00 m

mbgs - metres below ground surface

mm - millimetres

ND - Not detected

NM - Not monitored

^{2 -} ppmv if not indicated, or % LEL if indicated

^{3 -} Calculated using product thicknesses corrected by a specific gravity of 0.75 g/cm³

m - metres

TABLE 1

GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION ¹ (m)	GROUND SURFACE ELEVATION ¹ (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	E VAPOUR THICKNES (mm)		FREE PRODUCT POTENTIOMETRIC THICKNESSES (mm) (mbgs)	
BH-25	99.52	99.60	0.9 - 3.1	2012/06/13	30	ND	2.07	97.53
				2012/07/19	25	ND	2.20	97.40
				2013/02/28	5%	ND	2.80	96.79
				2013/03/14	4%	NĎ	2.84	96.76
BH-26	99.51	99.59	0.9 - 4.0	2012/06/13	35	ND	2.17	97.42
				2013/02/28	240	ND	2.65	96.94
				2013/03/14	45	ND	2.68	96.90
BH-27	99.53	99.59	0.9 - 4.0	2012/06/13	180	ND	1.53	98.05
				2013/02/28	87%	ND	2.81	96.78
				2013/03/14	53%	ND	2.84	96.75
BH-28	99.60	99.70	0.9 - 4.0	2012/06/13	100	ND	1.45	98.25
				2013/02/28	15	ND	2.50	97.19
				2013/03/14	65	ND	2.62	97.08
BH-29	99.81	99.90	0.9 - 4.0	2012/06/13	180	ND	2.56	97.34
				2013/02/28	25	ND	2.46	97.44
				2013/03/14	45	ND	2.57	97.33
BH-34	99.63	99.75	0.6 - 3.7	2013/02/28	<5	ND	ND	ND
				2013/03/14	60	ND	ND	ND
BH-35	99.23	99.37	0.6 - 3.7	2013/02/28	80	ND	2.64	96.72
				2013/03/14	15	ND	2.68	96.69

^{1 -} Relative to local benchmark (fire hydrant at northeast comer of Site) having an assigned elevation of 100.00 m

m - metres

mbgs - metres below ground surface

mm - millimetres

ND - Not detected

NM - Not monitored

^{2 -} ppmv if not indicated, or % LEL if indicated

^{3 -} Calculated using product thicknesses corrected by a specific gravity of 0.75 g/cm³

TABLE 2

Ref. No.: 10-1177.100

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - APRIL 2012 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-19	BH-19	BH-20	BH-20	BH-20	BH-21	BH-21		
								CRIT	ERIA
Maxxam Sample ID	DH0728	DH0729	DH0730	DH0731	DH0732	DH0733	DH0734		
Sample Depth (mbgs)	1.1-1.4	4.1-4.4	2.3-2.6	3.5-3.8	4.7-5.0	2.3-2.6	3.5-3.8		
Date Sampled (yyyy/mm/dd)	2012/04/26	2012/04/26	2012/04/26	2012/04/26	2012/04/26	2012/04/26	2012/04/26	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS									
_									ba
Benzene	<0.0050	0.047	<0.060	<0.0050	<0.0050	0.019	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	<0.020	0.11	<0.020	<0.020	<0.020	<0.020	330 ^a	660 ^b
Ethylbenzene	<0.010	<0.010	11	<0.010	< 0.010	0.32	<0.010	430 ^a	860 ^b
Total Xylenes	<0.040	<0.040	44	<0.040	<0.040	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	<12	<12	<u>860</u>	<12	<12	47	<12	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	<10	<10	170	<10	<10	180	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	78	73	19	46	20	67	73	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	110	46	<10	19	<10	20	34	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.0020	<0.0020	<0.060	<0.0020	<0.0020	<0.020	<0.0020	NV	NV
1,2-Dichloroethane	<0.0020	<0.0020	<0.0020	0.0579	<0.0020	0.0215	<0.0020	0.37 ^f	0.37 ^f
Lead	2.0	14	13	13	14	17	15	260 ^g	260 ^g

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012);
 Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)
- b CCME; Canadian Environmental Quality Guidelines (2012);

Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)

- c Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained surface soils (commerical land use)

e - CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained subsoils (commericial land use)

f - Alberta Soil and Groundwater Remediation Guidelines (2010);

Surface Soil Remediation Guideline Values for Commerical Land Use (fine-grained soils)

- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

TABLE 2

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - APRIL 2012 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-22	DUP-22 FIELD DUPLICATE BH-22	BH-22	BH-22	CRITERIA	
Maxxam Sample ID	DH0735	DH0736	DH0737	DH0738		
Sample Depth (mbgs)	2.3-2.6	2.3-2.6	3.5-3.8	4.7-5.0		
Date Sampled (yyyy/mm/dd)	2012/04/26	2012/04/26	2012/04/26	2012/04/26	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS						
Benzene	<u>3.6</u>	4.0	<0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	<0.020	<0.020	<0.020	330°	660 ^b
Ethylbenzene	7.0	8.2	<0.010	<0.010	430 ^a	860 ^b
Total Xylenes	8.5	10	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	130	140	<12	<12	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	40	86	<10	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	<10	11	62	200	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	<10	31	100	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.030	<0.030	<0.0020	<0.0020	NV	NV
1,2-Dichloroethane	0.0977	0.129	<0.0020	<0.0020	0.37 ^f	0.37 ^f
Lead	11	11	14	13	260 ^g	260 ^g

a - Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012);
 Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)

Ref. No.: 10-1177.100

b - CCME; Canadian Environmental Quality Guidelines (2012);

Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)

- c Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained surface soils (commerical land use)

e - CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained subsoils (commercial land use)

- f Alberta Soil and Groundwater Remediation Guidelines (2010);
- Surface Soil Remediation Guideline Values for Commerical Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

TABLE 2

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - APRIL 2012 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-23	DUP-23 FIELD DUPLICATE BH-23	BH-23	BH-23	CRITERIA	
Maxxam Sample ID	DH0621	DH0622	DH0623	DH0722		
Sample Depth (mbgs)	2.3-2.6	2.3-2.6	2.9-3.2	4.7-5.0		
Date Sampled (yyyy/mm/dd)	2012/04/26	2012/04/26	2012/04/26	2012/04/26	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS						
Benzene	0.31	0.23	<0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	0.16	0.084	< 0.020	<0.020	330 ^a	660 ^b
Ethylbenzene	7.1	2.3	< 0.010	<0.010	430 ^a	860 ^b
Total Xylenes	41	13	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	230	53	<12	<12	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	100	60	<10	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	<10	10	16	39	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	13	18	13	23	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.040	<0.020	<0.0020	<0.0020	NV	NV
1,2-Dichloroethane	<0.0020	<0.0020	0.121	<0.0020	0.37 ^f	0.37 ^f
Lead	4.1	5.3	16	16	260 ⁹	260 ^g

a - Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commerical land use)

Ref. No.: 10-1177.100

b - CCME; Canadian Environmental Quality Guidelines (2012);

Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)

- c Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained surface soils (commerical land use)

- e CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);
 - Tier 1 levels for PHCs for fine grained subsoils (commercial land use)

- f Alberta Soil and Groundwater Remediation Guidelines (2010); Surface Soil Remediation Guideline Values for Commerical Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - APRIL 2012

TABLE 2

PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

Ref. No.: 10-1177.100

SAMPLE LOCATIONS	BH-24	BH-24	BH-24	BH-25	DUP-25 FIELD DUPLICATE BH-25	CRITERIA	
Maxxam Sample ID	DH0739	DH0740	DH0741	DH0742	DH0743		
Sample Depth (mbgs)	2.3-2.6	3.5-3.8	4.7-5.0	1.7-2.0	1.7-2.0		
Date Sampled (yyyy/mm/dd)	2012/04/26	2012/04/26	2012/04/26	2012/04/26	2012/04/26	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS							
Benzene	<u>7.0</u>	0.031	<0.0050	0.62	1.8	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	20	0.071	<0.020	0.056	0.091	330 ^a	660 ^b
Ethylbenzene	8.4	<0.010	<0.010	2.9	4.2	430 ^a	860 ^b
Total Xylenes	44	<0.040	<0.040	3.9	5.5	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	110	<12	<12	140	170	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	130	<10	<10	170	89	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	29	74	41	16	13	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	41	27	<10	<10	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.0040	<0.0020	<0.0020	<0.030	<0.030	NV	NV
1,2-Dichloroethane	<0.0020	0.0113	<0.0020	<0.0020	<0.0020	0.37 ^f	0.37 ^f
Lead	3.4	13	11	8.8	9.8	260 ^g	260 ^g

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)
- b CCME; Canadian Environmental Quality Guidelines (2012);
 Soil quality guidelines and check values in subsoil (fine-grained soils, commercial land use)
- C Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);
- Tier 1 levels for PHCs for fine grained surface soils (commerical land use)
- e CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained subsoils (commericial land use)

- f Alberta Soil and Groundwater Remediation Guidelines (2010);
 Surface Soil Remediation Guideline Values for Commercial Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land ι
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

TABLE 2

Ref. No.: 10-1177.100

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - APRIL 2012 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-25	BH-25	BH-26	BH-26	BH-27	BH-27		
							CRIT	ERIA
Maxxam Sample ID	DH0744	DH0745	DH0746	DH0747	DH0723	DH0724		
Sample Depth (mbgs)	3.5-3.8	4.7-5.0	1.7-2.0	2.3-2.6	1.7-2.0	2.3-2.6		
Date Sampled (yyyy/mm/dd)	2012/04/26	2012/04/26	2012/04/26	2012/04/26	2012/04/27	2012/04/27	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS								
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	< 0.020	<0.020	<0.020	<0.020	< 0.020	330 ^a	660 ^b
Ethylbenzene	<0.010	<0.010	<0.010	<0.010	8.2	< 0.010	430 ^a	860 ^b
Total Xylenes	<0.040	<0.040	<0.040	<0.040	12	<0.040	230°	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	<12	<12	<12	<12	660	<12	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	<10	<10	<10	<10	200	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	72	70	42	50	<10	24	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	39	35	19	24	11	<10	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.0020	<0.0020	<0.0020	<0.0020	0.0402	<0.0020	NV	NV
1,2-Dichloroethane	0.0346	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.37 ^f	0.37 ^f
Lead	13	12	12	12	2.9	15	260 ^g	260 ^g

a - Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)

b - CCME; Canadian Environmental Quality Guidelines (2012);

Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)

- c Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained surface soils (commerical land use)

e - CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained subsoils (commercial land use)

f - Alberta Soil and Groundwater Remediation Guidelines (2010);

Surface Soil Remediation Guideline Values for Commercial Land Use (fine-grained soils)

- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbas - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

TABLE 2

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - APRIL 2012 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-28	BH-28	BH-29	BH-29		
					CRIT	ERIA
Maxxam Sample ID	DH0725	DH0726	DH0748	DH0752		
Sample Depth (mbgs)	0.5-0.8	2.3-2.6	1.1-1.4	2.3-2.6		
Date Sampled (yyyy/mm/dd)	2012/04/27	2012/04/27	2012/04/27	2012/04/27	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS						
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	<0.020	<0.020	<0.020	330 ^a	660 ^b
Ethylbenzene	0.19	<0.010	<0.010	<0.010	430 ^a	860 ^b
Total Xylenes	0.57	<0.040	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	43	<12	<12	<12	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	90	<10	<10	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	1900	20	<10	17	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	3000	10	<10	10	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.020	<0.0020	<0.0020	<0.0020	NV	NV
1,2-Dichloroethane	<0.0020	<0.0020	<0.0020	<0.0020	0.37 ^f	0.37 ^f
Lead	36	16	7.8	18	260 ^g	260 ^g

a - Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)

Ref. No.: 10-1177.100

- b CCME; Canadian Environmental Quality Guidelines (2012);
 Soil quality guidelines and check values in subsoil (fine-grained soils, commercial land use)
- C Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);
 Tier 1 levels for PHCs for fine grained surface soils (commercial land use)
- e CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained subsoils (commercial land use)

- f Alberta Soil and Groundwater Remediation Guidelines (2010);
 Surface Soil Remediation Guideline Values for Commercial Land Use (fine-grains
- Surface Soil Remediation Guideline Values for Commerical Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

TABLE 3

Ref. No.: 10-1177.100

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - OCTOBER 2012 - VERTICAL BOREHOLES PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-30	BH-30	BH-30	BH-33	DUP-33 FIELD DUPLICATE BH-33	BH-33	BH-33	CRIT	ERIA
Maxxam Sample ID	ET5009	ET5010	ET5011	ET5071	ET5072	ET5073	ET5074		
Sample Depth (mbgs)	1.2-1.8	2.4-3.1	3.7-4.3	1.2-1.8	1.2-1.8	2.4-3.1	3.7-4.3		
Date Sampled (yyyy/mm/dd)	2012/10/16	2012/10/16	2012/10/16	2012/10/16	2012/10/16	2012/10/16	2012/10/16	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS									
Benzene	<0.0050	<0.0050	<0.0050	0.17	0.29	0.013	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	< 0.020	330 ^a	660 ^b
Ethylbenzene	<0.010	0.011	0.13	0.18	0.26	< 0.010	< 0.010	430 ^a	860 ^b
Total Xylenes	<0.040	0.046	0.10	0.30	0.49	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	<10	<10	<10	11	<10	<10	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	19	<10	<20	<20	<20	<20	<20	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	420	85	<20	24	<20	<20	<20	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	65	28	<20	<20	<20	<20	<20	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	2.02	1.97	15.8	7.01	6.40	16.1	15.5	260 ⁹	260 ^g

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012);
 Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)
- b CCME; Canadian Environmental Quality Guidelines (2012);

Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)

- c Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained surface soils (commerical land use)

e - CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained subsoils (commericial land use)

- f Alberta Soil and Groundwater Remediation Guidelines (2010);
 - Surface Soil Remediation Guideline Values for Commerical Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

TABLE 4 Ref. No.: 10-1177.100

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - OCTOBER 2012 - ANGLED BOREHOLES (45 degrees) PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-31	BH-31	BH-31	BH-31	DUP-31 FIELD DUPLICATE BH-31	BH-32	BH-32	BH-32	CRIT	ERIA
Maxxam Sample ID	ET5012	ET5013	ET5014	ET5015	ET5016	ET5068	ET5069	ET5070		
Sample Down Hole Depth (mbgs)	0.6-1.2	1.8-2.4	3.1-3.7	4.3-4.9	4.3-4.9	1.2-1.8	2.4-3.1	3.7-4.3		
Date Sampled (yyyy/mm/dd)	2012/10/16	2012/10/16	2012/10/16	2012/10/16	2012/10/16	2012/10/16	2012/10/16	2012/10/16	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS										
Benzene	0.039	<0.0050	<0.0050	<0.0050	<0.0050	0.075	<0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	0.046	<0.020	<0.020	330 ^a	660 ^b
Ethylbenzene	0.040	<0.010	<0.010	<0.010	<0.010	0.078	<0.010	<0.010	430 ^a	860 ^b
Total Xylenes	<0.040	<0.040	<0.040	<0.040	<0.040	2.9	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	12	<10	27	<10	25	36	<10	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	<20	<20	110	72	160	130	<20	98	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	<20	26	<20	<20	37	310	<20	<20	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	<20	<20	<20	<20	<20	2100	<20	<20	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	21.1	13.0	13.3	12.7	11.5	19.6	14.4	9.57	260 ^g	260 ⁹

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)
- b CCME; Canadian Environmental Quality Guidelines (2012);

Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)

- c Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained surface soils (commerical land use)

e - CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained subsoils (commericial land use)

f - Alberta Soil and Groundwater Remediation Guidelines (2010);

Surface Soil Remediation Guideline Values for Commerical Land Use (fine-grained soils)

- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

TABLE 5

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - FEBRUARY 2013

PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

Ref. No.: 10-1177.100

SAMPLE LOCATIONS	BH-34	BH-34	BH-34	BH-34	BH-35	BH-35	BH-35		
								CRIT	ERIA
Maxxam Sample ID	FS0783	FS0785	FS0787	FS0789	FS0841	FS0843	FS0845		
Sample Depth (mbgs)	0.6-1.2	1.8-2.4	3.0-3.6	4.2-4.8	0.6-1.2	2.4-3.0	4.2-4.8		
Date Sampled (yyyy/mm/dd)	2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS									
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	< 0.020	< 0.020	<0.020	<0.020	< 0.020	< 0.020	330 ^a	660 ^b
Ethylbenzene	<0.010	<0.010	< 0.010	<0.010	<0.010	< 0.010	< 0.010	430 ^a	860 ^b
Total Xylenes	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	<10	<10	<10	<10	<10	<10	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	<10	<10	<10	<10	<10	<10	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	<10	23	53	36	<10	<10	11	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	<10	12	<10	<10	<10	<10	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	5.58	17.0	16.6	16.2	14.8	4.06	14.3	260 ^g	260 ^g

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012);
 Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)
- b CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)
- c Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained surface soils (commerical land use)

e - CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained subsoils (commercial land use)

- f Alberta Soil and Groundwater Remediation Guidelines (2010);
 - Surface Soil Remediation Guideline Values for Commerical Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

ALYSES AND APPLICABLE CRITERIA - FEBRUARY 2013

Ref. No.: 10-1177.100

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - FEBRUARY 2013 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

TABLE 5

SAMPLE LOCATIONS	BH-36	BH-36	BH-36	BH-36	DUP-36 FIELD DUPLICATE BH-36	CRIT	ERIA
Maxxam Sample ID	FS0579	FS0580	FS0581	FS0582	FS0583		
Sample Depth (mbgs)	0.6-1.2	2.4-3.0	3.6-4.2	5.4-6.0	5.4-6.0		
Date Sampled (yyyy/mm/dd)	2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS							
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	< 0.020	<0.020	< 0.020	< 0.020	330 ^a	660 ^b
Ethylbenzene	<0.010	< 0.010	<0.010	< 0.010	< 0.010	430 ^a	860 ^b
Total Xylenes	<0.040	<0.040	<0.040	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	<10	<10	<10	<10	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	<10	<10	<10	<10	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	<10	52	30	25	<10	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	33	<10	<10	<10	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	15.1	14.8	15.6	15.9	13.8	260 ⁹	260 ^g

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)
- b CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)
- c Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);
- Tier 1 levels for PHCs for fine grained surface soils (commerical land use)
- e CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);
- Tier 1 levels for PHCs for fine grained subsoils (commercial land use)
- f Alberta Soil and Groundwater Remediation Guidelines (2010);
 Surface Soil Remediation Guideline Values for Commercial Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

TABLE 5

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - FEBRUARY 2013 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-37	BH-37	BH-37	BH-37		
					CRIT	ERIA
Maxxam Sample ID	FS0847	FS0848	FS0849	FS0850		
Sample Depth (mbgs)	0.0-0.6	1.8-2.4	3.0-3.6	4.2-4.8		
Date Sampled (yyyy/mm/dd)	2013/02/21	2013/02/21	2013/02/21	2013/02/21	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS						
_						ha
Benzene	0.57	<0.0050	<0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	0.040	<0.020	<0.020	<0.020	330 ^a	660 ^b
Ethylbenzene	0.34	< 0.010	< 0.010	<0.010	430 ^a	860 ^b
Total Xylenes	0.33	<0.040	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	<10	<10	<10	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	<10	190	<10	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	100	55	<10	17	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	73	<10	<10	<10	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	<u>270</u>	5.94	15.3	16.4	260 ⁹	260 ^g

a - Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012);
 Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)

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- b CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)
- c Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);
 - Tier 1 levels for PHCs for fine grained surface soils (commerical land use)
- e CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);
- Tier 1 levels for PHCs for fine grained subsoils (commercial land use)
- f Alberta Soil and Groundwater Remediation Guidelines (2010);
 Surface Soil Remediation Guideline Values for Commercial Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - FEBRUARY 2013

TABLE 5

PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

Ref. No.: 10-1177.100

SAMPLE LOCATIONS	BH-38	BH-38	BH-38	DUP-38 FIELD DUPLICATE BH-38	BH-38	CRIT	ERIA
Maxxam Sample ID	FS0584	FS0585	FS0586	FS0587	FS0588		
Sample Depth (mbgs)	0.6-1.2	1.8-2.4	3.0-3.6	3.0-3.8	4.8-5.4		
Date Sampled (yyyy/mm/dd)	2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS	_						_
Benzene	0.0093	0.0099	<0.0050	<0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	330 ^a	660 ^b
Ethylbenzene	0.030	0.018	< 0.010	<0.010	<0.010	430 ^a	860 ^b
Total Xylenes	<0.040	<0.040	<0.040	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	15	<10	<10	<10	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	<10	<10	<10	<10	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	<10	<10	10	23	46	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	<10	<10	<10	12	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	14.4	4.18	12.8	14.5	15.7	260 ^g	260 ^g

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commerical land use)
- b CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)
- c Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained surface soils (commerical land use)

- e CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);
 - Tier 1 levels for PHCs for fine grained subsoils (commercial land use)
- f Alberta Soil and Groundwater Remediation Guidelines (2010);
- Surface Soil Remediation Guideline Values for Commerical Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

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RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - FEBRUARY 2013 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

TABLE 5

SAMPLE LOCATIONS	BH-39	BH-39	BH-39	BH-39		
					CRIT	ERIA
Maxxam Sample ID	FS0791	FS0792	FS0793	FS0794		
Sample Depth (mbgs)	0.6-1.2	1.8-2.4	3.0-3.6	4.8-5.4		
Date Sampled (yyyy/mm/dd)	2013/02/21	2013/02/21	2013/02/21	2013/02/21	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS						
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	<0.020	<0.020	< 0.020	330 ^a	660 ^b
Ethylbenzene	<0.010	0.062	<0.010	<0.010	430 ^a	860 ^b
Total Xylenes	<0.040	0.21	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	<10	23	<10	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	<10	24	<10	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	11	29	12	22	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	10	<10	<10	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	14.3	14.4	16.9	16.1	260 ⁹	260 ^g

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)
- b CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)
- C Human health guidelines/check values 10⁻⁵ incremental risk
- d CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);
- Tier 1 levels for PHCs for fine grained surface soils (commerical land use)
- e CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);

Tier 1 levels for PHCs for fine grained subsoils (commercial land use)

- f Alberta Soil and Groundwater Remediation Guidelines (2010);
- Surface Soil Remediation Guideline Values for Commercial Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

(SES AND APPLICABLE CRITERIA - FERRIJARY 2013

Ref. No.: 10-1177.100

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - FEBRUARY 2013 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

TABLE 5

SAMPLE LOCATIONS	BH-40	BH-40	BH-40	BH-41	BH-41	BH-41		
							CRIT	ERIA
Maxxam Sample ID	FS2846	FS2847	FS2848	FS2849	FS2850	FS2851		
Sample Depth (mbgs)	0.6-1.2	2.4-3.0	4.8-5.4	2.4-3.0	3.0-3.6	3.6-4.2		
Date Sampled (yyyy/mm/dd)	2013/02/22	2013/02/22	2013/02/22	2013/02/22	2013/02/22	2013/02/22	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS								
Benzene	<0.0050	< 0.0050	< 0.0050	1.5	1.5	0.014	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	< 0.020	<0.020	0.034	0.033	<0.020	330 ^a	660 ^b
Ethylbenzene	<0.010	< 0.010	<0.010	1.2	1.2	0.020	430 ^a	860 ^b
Total Xylenes	<0.040	<0.040	<0.040	0.66	0.65	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	<10	<10	<10	61	59	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	<10	<10	<10	44	40	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	68	170	13	39	15	50	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	42	130	<10	12	<10	23	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	2.84	2.84	15.4	15.9	15.5	17.2	260 ^g	260 ^g

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)
- b CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)
- C Human health guidelines/check values 10⁻⁵ incremental risk
- $\hbox{d-CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);}\\$
 - Tier 1 levels for PHCs for fine grained surface soils (commerical land use)
- $\hbox{e-CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);}\\$
- Tier 1 levels for PHCs for fine grained subsoils (commericial land use)
- f Alberta Soil and Groundwater Remediation Guidelines (2010);
 Surface Soil Remediation Guideline Values for Commercial Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value
- mbgs metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

TABLE 5

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - FEBRUARY 2013 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-42	BH-42	BH-42		
				CRIT	ERIA
Maxxam Sample ID	FS2852	FS2853	FS2854		
Sample Depth (mbgs)	0.6-1.2	1.8-2.4	3.0-3.6		
Date Sampled (yyyy/mm/dd)	2013/02/22	2013/02/22	2013/02/22	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS					
Benzene	<0.0050	< 0.0050	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	<0.020	<0.020	<0.020	330 ^a	660 ^b
Ethylbenzene	<0.010	< 0.010	<0.010	430 ^a	860 ^b
Total Xylenes	<0.040	<0.040	<0.040	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	<10	<10	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	<10	<10	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	<10	31	45	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	<10	10	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	1.63	13.6	16.0	260 ^g	260 ^g

a - Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)

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- b CCME; Canadian Environmental Quality Guidelines (2012);
 Soil quality guidelines and check values in subsoil (fine-grained soils, commercial land use)
- c Human health guidelines/check values 10⁻⁵ incremental risk
- $\hbox{d-CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);}\\$

Tier 1 levels for PHCs for fine grained surface soils (commerical land use)

- $e\hbox{ CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);}\\$
 - Tier 1 levels for PHCs for fine grained subsoils (commericial land use)
- f Alberta Soil and Groundwater Remediation Guidelines (2010);
 Surface Soil Remediation Guideline Values for Commercial Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - FEBRUARY 2013

TABLE 5

PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

Ref. No.: 10-1177.100

SAMPLE LOCATIONS	BH-43	BH-43	DUP-43 FIELD DUPLICATE BH-43	BH-43	BH-43	CRIT	ERIA
Maxxam Sample ID	FS2967	FS2968	FS2969	FS2970	FS2971		
Sample Depth (mbgs)	0.0-0.6	1.8-2.4	1.8-2.4	2.4-3.0	3.0-3.6		
Date Sampled (yyyy/mm/dd)	2013/02/22	2013/02/22	2013/02/22	2013/02/22	2013/02/22	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS							
Benzene	0.29	0.97	2.5	1.5	<0.0050	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	0.076	2.2	4.9	< 0.029	< 0.020	330 ^a	660 ^b
Ethylbenzene	0.85	20	22	6.1	0.032	430 ^a	860 ^b
Total Xylenes	2.0	77	100	7.4	0.059	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	54	<u>840</u>	550	140	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	200	260	82	64	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	350	17	24	13	33	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	270	<10	<10	<10	<10	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	49.2	15.5	13.7	17.7	16.3	260 ^g	260 ^g

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012);
 Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)
- b CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)
- c Human health guidelines/check values 10⁻⁵ incremental risk
- $\hbox{d-CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);}\\$
- Tier 1 levels for PHCs for fine grained surface soils (commerical land use)
- e CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);
- Tier 1 levels for PHCs for fine grained subsoils (commericial land use)
- f Alberta Soil and Groundwater Remediation Guidelines (2010);
 Surface Soil Remediation Guideline Values for Commerical Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value
- mbgs metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - FEBRUARY 2013

TABLE 5

PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

Ref. No.: 10-1177.100

SAMPLE LOCATIONS	BH-44	BH-44	BH-44	DUP-44 FIELD DUPLICATE BH-44	BH-44	BH-44	CRIT	ERIA
Maxxam Sample ID	FS2972	FS2973	FS2974	FS2975	FS2976	FS2977		
Sample Depth (mbgs)	0.0-0.6	1.2-1.8	1.8-2.4	1.8-2.4	2.4-3.0	3.0-3.6		
Date Sampled (yyyy/mm/dd)	2013/02/22	2013/02/22	2013/02/22	2013/02/22	2013/02/22	2013/02/22	0 - 1.5 mbgs	>1.5 mbgs
PARAMETERS								
Benzene	1.6	<u>3.1</u>	<u>6.5</u>	<u>5.3</u>	1.1	<0.017	2.8 ^{a,c}	2.9 ^{b,c}
Toluene	0.59	19	28	20	1.1	0.043	330 ^a	660 ^b
Ethylbenzene	5.9	17	19	15	8.4	0.041	430 ^a	860 ^b
Total Xylenes	49	160	110	81	23	0.15	230 ^a	460 ^b
Petroleum Hydrocarbons F1 (C6 - C10) ^h	160	<u>1500</u>	550	460	250	<10	320 ^d	800 ^e
Petroleum Hydrocarbons F2 (>C10 - C16) ⁱ	110	<u>520</u>	130	170	84	<10	260 ^d	1000 ^e
Petroleum Hydrocarbons F3 (>C16 - C34) ^j	170	<10	<10	<10	<10	18	2500 ^d	5000 ^e
Petroleum Hydrocarbons F4 (>C34 - C50)	64	<10	<10	<10	<10	10	6600 ^d	10 000 ^e
1,2-Dibromoethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NV	NV
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.37 ^f	0.37 ^f
Lead	56.8	18.1	6.87	6.75	6.58	15.1	260 ^g	260 ^g

- a Canadian Council of Ministers of the Environment (CCME); Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in surface soil (fine-grained soils, commercial land use)
- b CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values in subsoil (fine-grained soils, commerical land use)
- c Human health guidelines/check values 10⁻⁵ incremental risk
- $\hbox{d-CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);}\\$
 - Tier 1 levels for PHCs for fine grained surface soils (commerical land use)
- $\hbox{e-CCME; Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008);}\\$
 - Tier 1 levels for PHCs for fine grained subsoils (commericial land use)
- f Alberta Soil and Groundwater Remediation Guidelines (2010);
 Surface Soil Remediation Guideline Values for Commercial Land Use (fine-grained soils)
- g CCME; Canadian Environmental Quality Guidelines (2012); Soil quality guidelines and check values (commerical land use)
- h BTEX have been subtracted from the fraction
- i Naphthalene has not been subtracted from the fraction
- j PAHs have not been subtracted from the fraction
- NV No Value
- mbgs metres below ground surface

Results for all parameters are reported in milligrams per kilogram (mg/kg) on a dry weight basis

Ref. No.: 10-1177.100

RESULTS OF SOIL ANALYSES AND APPLICABLE CRITERIA - APRIL 2012 SELECTED POLYCYCLIC AROMATIC HYDROCARBONS

SAMPLE LOCATIONS	BH-21	BH-21	BH-29	BH-29	
Maxxam Sample ID	DH0733	DH0734	DH0748	DH0752	CRITERIAª
Sample Depth (mbgs)	2.3-2.6	3.5-3.8	1.1-1.4	2.3-2.6	
Date Sampled (yyyy/mm/dd)	2012/04/26	2012/04/26	2012/04/27	2012/04/27	
PARAMETERS					
Benzo(a)pyrene	<0.0050	<0.0050	<0.0050	<0.0050	72
Benzo[a]pyrene equivalency	<0.10	<0.10	<0.10	<0.10	5.3 ^b
Naphthalene	<0.041	<0.0050	<0.0050	<0.0050	22

a - Canadian Council of Ministers of the Environment (CCME);
 Canadian Environmental Quality Guidelines (2012);
 Soil Quality Guidelines for Carcinogenic and Other PAHs (commercial land use)

b - Human health guidelines/check values - 10⁻⁵ incremental risk

NV - No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilograms (mg/kg) on a dry weight basis

RESULTS OF SOIL CHEMICAL ANALYSES AND APPLICABLE CRITERIA - APRIL 2012 SELECTED METALS AND SELECTED GLYCOLS

SAMPLE LOCATIONS	BH-21	BH-21	BH-29	BH-29	
Maxxam Sample ID	DH0733	DH0734	DH0748	DH0752	CRITERIAª
Sample Depth (mbgs)	2.3-2.6	3.5-3.8	1.1-1.4	2.3-2.6	
Date Sampled (yyyy/mm/dd)	2012/04/26	2012/04/26	2012/04/27	2012/04/27	
PARAMETERS					
Arsenic Barium Chromium (Total) Copper Zinc	11	13	4.5	11	12
	260	210	120	220	2000
	60	49	21	58	87
	41	38	14	41	91
	100	98	32	100	360
Ethylene Glycol	<10	<10	<10	<10	960
Propylene Glycol	<10	<10	<10	<10	NV

a - Canadian Council of Ministers of the Environment (CCME);

Canadian Environmental Quality Guidelines (2012)

Soil quality guidelines and check values (commercial land use)

NV - No Value

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilograms (mg/kg) on a dry weight basis

Ref. No.: 10-1177.100

RESULTS OF HYDROCHEMICAL ANALYSES AND APPLICABLE CRITERIA - JUNE, JULY AND AUGUST 2012 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVANGERS

TABLE 8

SAMPLE LOCATIONS	BH1	BH2	ВН3А	BH5	DUP-2 FIELD DUPLICATE BH-5	ВН6	CRITERIA
Maxxam Sample ID	DZ4277	DZ4278	DR8185	DR8266	DR8267 2012/06/13	DR8270 2012/06/13	
Date Sampled (yyyy/mm/dd)	2012/07/19	2012/07/19	2012/06/13	2012/06/13	2012/06/13	2012/00/13	
PARAMETERS							
Benzene	<0.0004	<0.0004	<0.00040	0.440	0.360	0.360	19ª
Toluene	<0.0004	< 0.0004	<0.00040	0.100	0.081	0.030	240°
Ethylbenzene	<0.0004	<0.0004	<0.00040	2.000	1.800	0.830	150°
Total Xylenes	<0.0008	<0.0008	<0.00080	11.000	9.800	3.700	74ª
Petroleum Hydrocarbons F1 (C6 - C10) ^c	<0.3	<0.3	<0.100	8.800	13.000	2.500	9.9ª
Petroleum Hydrocarbons F2 (>C10 - C16) ^d	<0.15	<0.15	<0.10	2,1	2,1	1.1	3.1ª
1,2-Dibromoethane	<0.00020	<0.00020	<0.00050	<0.00050	<0.00050	-	NV
1,2-Dichloroethane	0.0020	<0.00050	0.0025	0.0019	0.0015	-	1.2ª
Dissolved Lead (Pb)	<0.00050	<0.00050	<0.00020	0.00059	0.00049	-	0.025 ^b

a - Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2010); Groundwater Remediation Guideline Values for Commercial/Industrial (fine grained soils)

Results for all parameters are reported in milligrams per litre (mg/L)

NV - No Value

"-" - Not analyzed

b - Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act;
 (Ontario Ministry of Environment and Energy, 2011); (non-potable groundwater criteria; all property uses)

C - BTEX have been subtracted from the fraction

d - Naphthalene has not been subtracted from the fraction

TABLE 8

Ref. No.: 10-1177,100

RESULTS OF HYDROCHEMICAL ANALYSES AND APPLICABLE CRITERIA - JUNE, JULY AND AUGUST 2012 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVANGERS

SAMPLE LOCATIONS	ВН7	DUP-1 FIELD DUPLICATE BH-7	ВН9	BH17	BH-19	BH-20	CRITERIA
Maxxam Sample ID	DR8264	DR8265	DR8218	EF2286	DR8187	DR8186	
Date Sampled (yyyy/mm/dd)	2012/06/13	2012/06/13	2012/06/13	2012/08/16	2012/06/13	2012/06/13	
PARAMETERS							
Benzene	4.800	4,900	<0.00040	0.0021	0.00082	0.340	19ª
Toluene	0.200	0.230	<0.00040	0.0006	0.00090	0.014	240 ^a
Ethylbenzene	0.290	0.290	<0.00040	0.011	<0.00040	0.0063	150°
Total Xylenes	2.300	2.400	<0.00080	0.010	<0.00080	4.000	74ª
Petroleum Hydrocarbons F1 (C6 - C10) ^c	4.000	6.100	<0.100	<0.300	<0.100	5.600	9.9°
Petroleum Hydrocarbons F2 (>C10 - C16) ^d	4.3	3.1	<0.10	0.52	<0.10	<u>4.8</u>	3.1°
1,2-Dibromoethane	<0.00050	<0.00050	<0.00050	<0.00020	<0.00050	<0.00050	NV
1,2-Dichloroethane	0.024	0.027	<0.00050	<0.00050	<0.00050	0.035	1.2ª
Dissolved Lead (Pb)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0015	0.025 ^b

a - Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2010); Groundwater Remediation Guideline Values for Commercial/Industrial (fine grained soils)

Results for all parameters are reported in milligrams per litre (mg/L)

NV - No Value

"-" - Not analyzed

b - Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act; (Ontario Ministry of Environment and Energy, 2011); (non-potable groundwater criteria; all property uses)

C - BTEX have been subtracted from the fraction

d - Naphthalene has not been subtracted from the fraction

TABLE 8

RESULTS OF HYDROCHEMICAL ANALYSES AND APPLICABLE CRITERIA - JUNE, JULY AND AUGUST 2012 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVANGERS

SAMPLE LOCATIONS	BH-21	DUP-1 FIELD DUPLICATE BH-21	BH-24	BH-25	BH-25	CRITERIA
Maxxam Sample ID	DZ4280	DZ4281	DR8188	DR8189	DZ4279	
Date Sampled (yyyy/mm/dd)	2012/07/19	2012/07/19	2012/06/13	2012/06/13	2012/07/19	
PARAMETERS						
Benzene	0.0008	0.0015	22.000	2.900	3.000	19ª
Toluene	<0.0004	0.0006	30.000	0.150	0.066	240°
Ethylbenzene	0.0013	0.0044	2.600	1.500	1.300	150ª
Total Xylenes	<0.0008	<0.0008	14.000	3.000	2.600	74°
Petroleum Hydrocarbons F1 (C6 - C10) ^c	<0.3	<0.3	7.500	9.700	<0.300	9.9ª
Petroleum Hydrocarbons F2 (>C10 - C16) ^d	0.25	<0.15	2.9	2.3	2.3	3.1ª
1,2-Dibromoethane	<0.00020	<0.00020	<0.00050	<0.00050	<0.00020	NV
1,2-Dichloroethane	<0.0018	<0.0028	0.036	0.010	<0.00050	1.2"
Dissolved Lead (Pb)	<0.00020	<0.00020	0.0018	<0.00020	<0.00020	0.025 ^b

a - Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2010);
 Groundwater Remediation Guideline Values for Commercial/Industrial (fine grained soils)

Ref. No.: 10-1177,100

Results for all parameters are reported in milligrams per litre (mg/L)

b - Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act;
 (Ontario Ministry of Environment and Energy, 2011); (non-potable groundwater criteria; all property uses)

c - BTEX have been subtracted from the fraction

d - Naphthalene has not been subtracted from the fraction

NV - No Value

[&]quot;-" - Not analyzed

RESULTS OF HYDROCHEMICAL ANALYSES AND APPLICABLE CRITERIA - JUNE, JULY AND AUGUST 2012 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVANGERS

SAMPLE LOCATIONS	BH-26	BH-27	BH-28	BH-29	
					CRITERIA
Maxxam Sample ID	DR8214	DR8215	DR8216	DR8217	
Date Sampled (yyyy/mm/dd)	2012/06/13	2012/06/13	2012/06/13	2012/06/13	
PARAMETERS					
Benzene	<0.00040	0.016	<0.00040	<0.00040	19ª
Toluene	<0.00040	0.0016	<0.00040	<0.00040	240°
Ethylbenzene	<0.00040	0.099	<0.00040	<0.00040	150°
Total Xylenes	<0.00080	0.860	<0.00080	<0.00080	74 ^a
Petroleum Hydrocarbons F1 (C6 - C10) ^c	<0.100	8.100	<0.100	<0.100	9.9ª
Petroleum Hydrocarbons F2 (>C10 - C16) ^d	<0.10	<u>5.6</u>	<0.10	<0.10	3.1ª
1,2-Dibromoethane	<0.00050	<0.00050	<0.00050	<0.00050	NV
1,2-Dichloroethane	<0.00050	<0.00050	<0.00050	<0.00050	1,2ª
Dissolved Lead (Pb)	<0.00020	<0.00020	<0.00020	0.00021	0.025 ^b

a - Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2010);
 Groundwater Remediation Guideline Values for Commercial/Industrial (fine grained soils)

Results for all parameters are reported in milligrams per litre (mg/L)

b - Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act; (Ontario Ministry of Environment and Energy, 2011); (non-potable groundwater criteria; all property uses)

C - BTEX have been subtracted from the fraction

d - Naphthalene has not been subtracted from the fraction

NV - No Value

[&]quot;-" - Not analyzed

TABLE 9

Ref. No.: 10-1177.100

RESULTS OF HYDROCHEMICAL ANALYSES AND APPLICABLE CRITERIA - MARCH 2013 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVANGERS

SAMPLE LOCATIONS	BH1	ВНЗА	BH5	DUP-1 FIELD DUPLICATE BH5	BH6	ВН7	DUP-2 FIELD DUPLICATE BH7	CRITERIA
Maxxam Sample ID	FW9339	FW9465	FW9341	FW9343	FW9345	FW9549	FW9550	
Date Sampled (yyyy/mm/dd)	2013/03/15	2013/03/14	2013/03/15	2013/03/15	2013/03/15	2013/03/15	2013/03/15	
PARAMETERS								
Benzene	<0.0004	<0.0004	0.76	0.71	0.40	3.6	3.4	19ª
Toluene	<0.0004	<0.0004	0.12	0.12	0.022	0.069	0.072	240ª
Ethylbenzene	<0.0004	<0.0004	2.1	2.1	0.76	0.56	0.58	150°
Total Xylenes	<0.0008	<0.0008	11	12	2.4	2.0	2.1	74°
Petroleum Hydrocarbons F1 (C6 - C10) ^c	<0.3	<0.3	5.3	2.5	1.1	3.6	3.8	9.9ª
Petroleum Hydrocarbons F2 (>C10 - C16) ^d	<0.15	<0.15	2.9	2.9	1.1	2.7	2.9	3.1ª
1,2-Dibromoethane	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	NV
1,2-Dichloroethane	0.0039	<0.0028	<0.031	<0.027	<0.023	<0.086	<0.00050	1.2°
Dissolved Lead (Pb)	0.00021	<0.00020	0,00061	0.00061	0.00025	<0.00020	<0.00020	0.025 ^b

a - Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2010);
 Groundwater Remediation Guideline Values for Commercial/Industrial (fine grained soils)

Results for all parameters are reported in milligrams per litre (mg/L)

NV - No Value

b - Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act;
 (Ontario Ministry of Environment and Energy, 2011); (non-potable groundwater criteria; all property uses)

c - BTEX have been subtracted from the fraction

d - Naphthalene has not been subtracted from the fraction

TABLE 9

Ref. No.: 10-1177.100

RESULTS OF HYDROCHEMICAL ANALYSES AND APPLICABLE CRITERIA - MARCH 2013 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVANGERS

SAMPLE LOCATIONS	BH9	BH17	BH-19	BH-20	BH-21	BH-24	
							CRITERIA
Maxxam Sample ID	FW9551	FW9552	FW9308	FW9305	F W 9467	FW9307	
Date Sampled (yyyy/mm/dd)	2013/03/15	2013/03/15	2013/03/14	2013/03/14	2013/03/14	2013/03/14	
PARAMETERS							
Benzene	<0.0004	0.027	0.0031	1.2	0.0028	14	19ª
Toluene	<0.0004	0.0008	<0.0004	0.0020	<0.0004	11	240°
Ethylbenzene	<0.0004	0.065	<0.0004	0.45	0.0007	2,2	150°
Total Xylenes	<0.0008	<0.0008	<0.0008	0.91	<0.0008	9.5	74 ⁸
Petroleum Hydrocarbons F1 (C6 - C10) ^c	<0.3	0.4	<0.3	2.8	<0.3	4.0	9.9ª
Petroleum Hydrocarbons F2 (>C10 - C16) ^d	<0.15	0.82	<0.15	1.2	0.31	1.3	3.1ª
	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	NV
1,2-Dibromoethane	<0.00020	<0.00050	<0.00050	<0.180	<0.0097	<0.00050	1.2"
1,2-Dichloroethane	~0.00050	~0.0000	-5.00050	.0.100	2.500		
Dissolved Lead (Pb)	<0.00020	<0.00020	<0.00020	0.00086	<0.00040	0.00101	0.025 ^b
							1

a - Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2010); Groundwater Remediation Guideline Values for Commercial/Industrial (fine grained soils)

Results for all parameters are reported in milligrams per litre (mg/L)

NV - No Value

b - Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act; (Ontario Ministry of Environment and Energy, 2011); (non-potable groundwater criteria; all property uses)

c - BTEX have been subtracted from the fraction

d - Naphthalene has not been subtracted from the fraction

TABLE 9

Ref. No.: 10-1177.100

RESULTS OF HYDROCHEMICAL ANALYSES AND APPLICABLE CRITERIA - MARCH 2013 PETEROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVANGERS

SAMPLE LOCATIONS	BH-25	BH-26	BH-27	BH-28	BH-29	BH-35	
Maxxam Sample ID Date Sampled (yyyy/mm/dd)	FW9268 2013/03/14	FW9466 2013/03/14	FW9468 2013/03/14	FW9306 2013/03/14	FW9475 2013/03/14	FW9474 2013/03/14	CRITERIA
PARAMETERS	2010,00,11						
Benzene Toluene Ethylbenzene Total Xylenes Petroleum Hydrocarbons F1 (C6 - C10)°	0.53 0.0065 0.23 0.43	<0.0004 <0.0004 <0.0004 <0.0008	0.0030 0.0006 0.35 0.61	<0.0004 <0.0004 <0.0004 <0.0008	<0.0004 <0.0004 <0.0004 <0.0008	<0.0004 <0.0004 <0.0004 <0.0008	19° 240° 150° 74° 9.9°
Petroleum Hydrocarbons F2 (>C10 - C16) ^d	0.80	<0.15	<u>3.8</u>	<0.15	<0.15	<0.15	3.1ª
1,2-Dibromoethane 1,2-Dichloroethane	<0.00020 <0.00050	<0.00020 <0.00050	<0.00020 <0.0023	<0.00020 <0.00050	<0.00020 <0.00050	<0.00020 <0.00050	NV 1.2ª
Dissolved Lead (Pb)	<0.00020	<0.00020	-	<0.00040	<0.00020	<0.00020	0.025⁵

a - Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2010);
 Groundwater Remediation Guideline Values for Commercial/Industrial (fine grained soils)

Results for all parameters are reported in milligrams per litre (mg/L)

NV - No Value

b - Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act;
 (Ontario Ministry of Environment and Energy, 2011); (non-potable groundwater criteria; all property uses)

c - BTEX have been subtracted from the fraction

d - Naphthalene has not been subtracted from the fraction

RESULTS OF HYDROCHEMICAL ANALYSES AND APPLICABLE CRITERIA - JUNE AND JULY 2012

Ref. No.: 10-1177,100

SAMPLE LOCATIONS	BH-21	DUP-1 FIELD DUPLICATE BH-21	BH-29	CRITERIA®
Maxxam Sample ID	DZ4280	DZ4281	DR8217	
Date Sampled (yyyy/mm/dd)	2012/07/19	2012/07/19	2012/06/13	
PARAMETERS				
Acenaphthene	<0.000080	<0.00016	<0.00010	NV
Anthracene	<0.000010	<0.000010	<0.000010	0.32
Benzo(a)anthracene	<0.000010	<0.000010	<0.0000085	NV
Benzo(a)Pyrene	<0.0000090	<0.0000090	<0.0000075	0.0066
Benzo[a]pyrene equivalency	-	-	<0.000010	ΝV
Fluoranthene	<0.000020	<0.000020	<0.000040	0.86
Fluorene	<0.000050	<0.000078	<0.000050	NV
Naphthalene	<0.00030	<0.00046	<0.00010	NV
Phenanthrene	<0.000050	<0.000050	<0.000050	NV
Pyrene	<0.000020	<0.000020	<0.000020	NV

TABLE 10

SELECTED POLYCYCLIC AROMATIC HYDROCARBONS

Results for all parameters are reported in milligrams per litre (mg/L)

NV - No Value

"-" - Not analyzed

a - Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2010);
 Groundwater Remediation Guideline Values for Commercial/Industrial (fine-grained soils)

Ref. No.: 10-1177.100

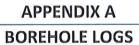
RESULTS OF HYDROCHEMICAL ANALYSES AND APPLICABLE CRITERIA - JUNE AND JULY 2012 SELECTED METALS AND SELECTED GLYCOLS

TABLE 11

SAMPLE LOCATIONS	BH-21	DUP-1 FIELD DUPLICATE BH-21	BH-29	CRITERIAª
Maxxam Sample ID	DZ4280	DZ4281	DR8217	
Date Sampled (yyyy/mm/dd)	2012/07/19	2012/07/19	2012/06/13	
PARAMETERS				
Dissolved Arsenic (As)	0.00204	0.00250	0.0014	1.9
Dissolved Barium (Ba)	0.155	0.214	0.027	29
Dissolved Chromium (Cr)	<0.0010	<0.0010	<0.010	0.81
Dissolved Copper (Cu)	0.00353	0.00267	0.0048	0.087
Dissolved Zinc (Zn)	0.0079	0.0062	0.010	1.1
Ethylene Glycol	<10	<10	<10	N∨
Propylene Glycol	<10	<10	<10	NV

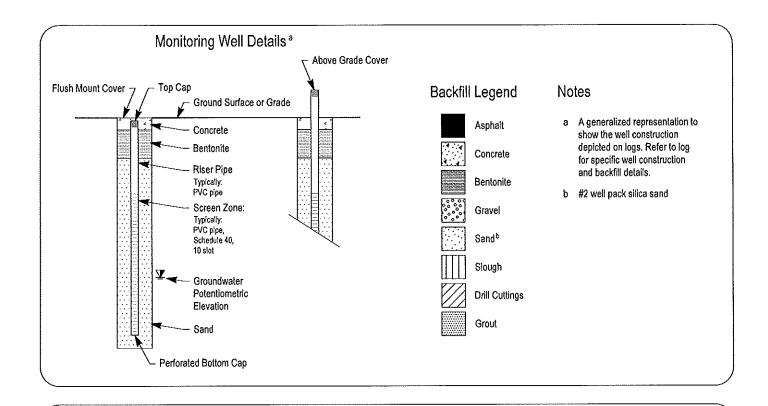
a - Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act;
 (Ontario Ministry of Environment and Energy, 2011); (non-potable groundwater criteria; all property uses)
 Results for all parameters are reported in milligrams per litre (mg/L)

NV - No Value



BOREHOLE LOG LEGEND

Overburden



Sample Type

DC Drill Cutting

G Grab

SL Sleeved Tube

SS Split Spoon

ST Shelby Tube

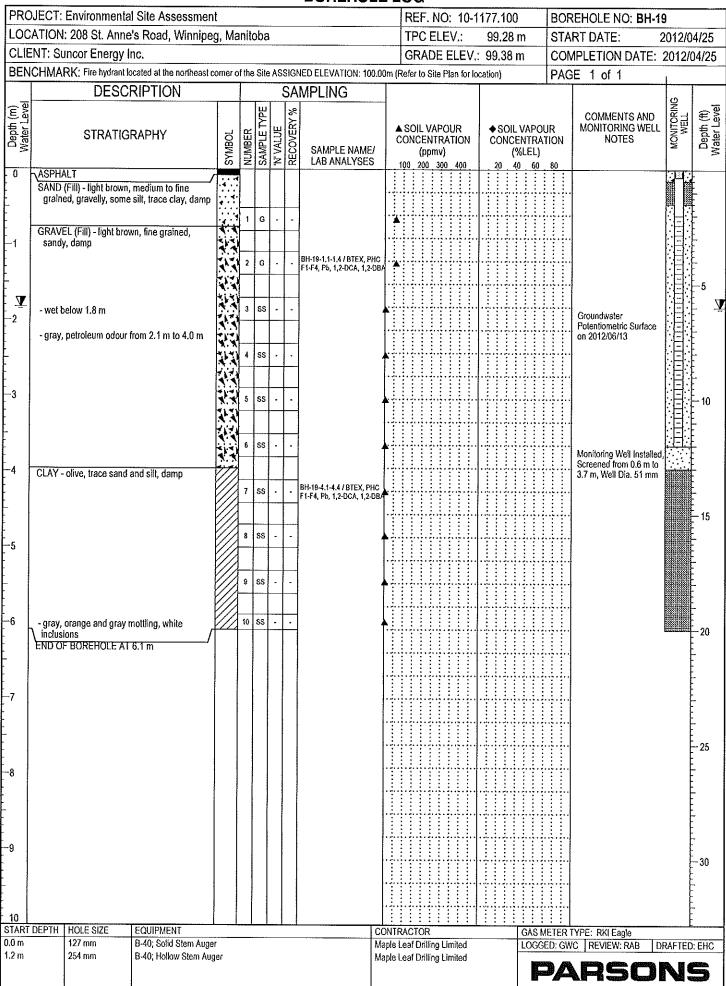
OS Other

Grab Samples are obtained by a stainless steel spoon, side wall sampler, hand auger or other sampling tool.

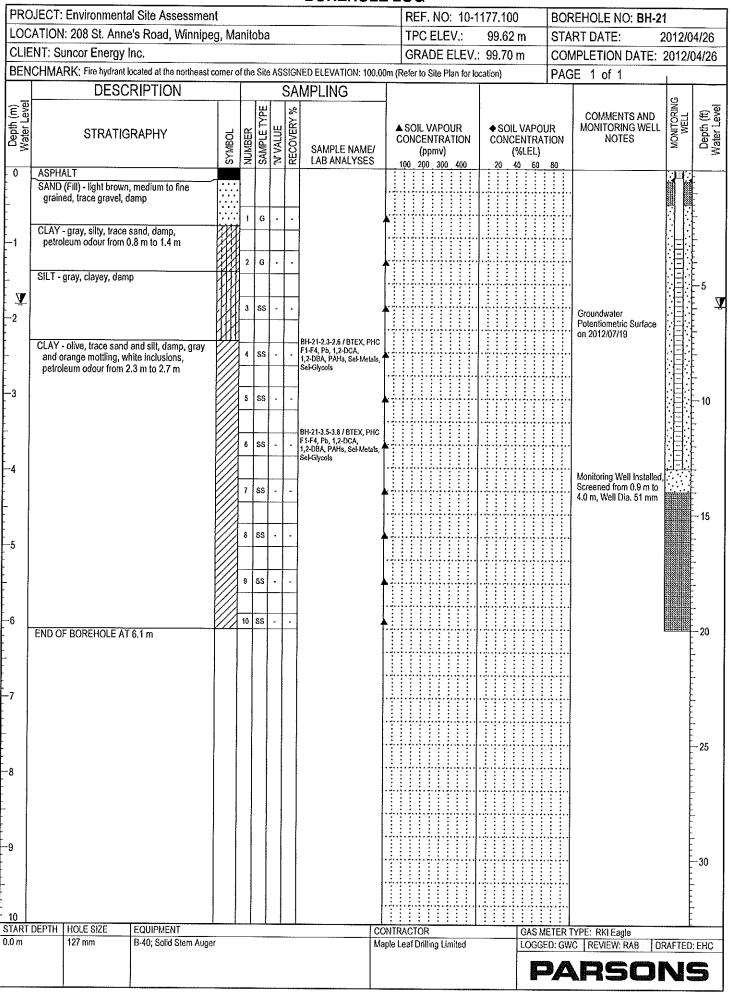
'N' Value is determined from a Standard Penetration Test. R represents a blow count of 50 or greater for a drive distance of 150 mm or less.

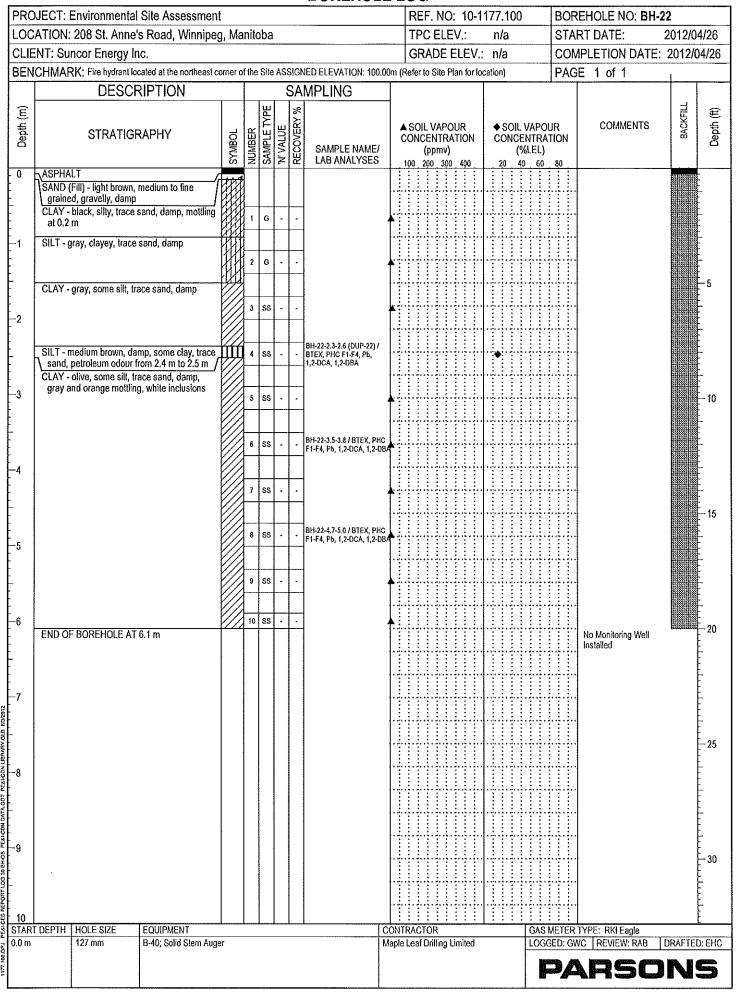
Stratigraphy Legend Asphalt Concrete Other Constructed Layer Boulders Cobbles Sandy Gravel Sand and Gravel Gravel Gravelly Sand Silty Sand Sand Sandy Silt Clayey Silt Silt Silty Clay Sandy Clay Clay Organic Soil Topsoil Peat

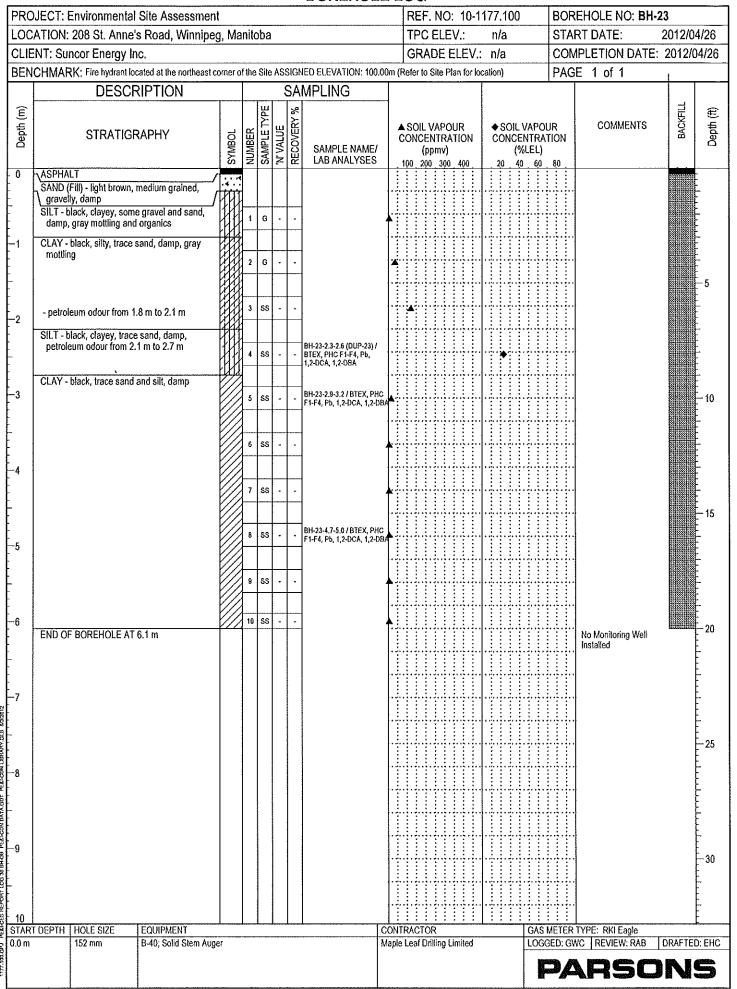
PRO	JECT: Environmental Site Assessment					BOF	REHOLE): 10-1	177.10	n	BOF	REHOLE NO: BH3A		
<u> </u>	ATION: 208 St. Anne's Road, Winnipeg,	Mani	toba						PC ELI		99.25				12/04/2	 5
	NT: Suncor Energy Inc.										99.31			MPLETION DATE: 2		
I	CHMARK: Fire hydrant located at the northeast co	rner of	the Si	te AS	SIGN	ED ELEVA	TION: 100.00m							GE 1 of 1	0121071	
DEN	DESCRIPTION		1			AMPLIN		1 (10001 10	010110	110110001	,		11 //	1 1 1 1	 	
Depth (m) Water Level	STRATIGRAPHY	SYMBOL	NUMBER	SAMPLE TYPE	N' VALUE	SAMF LAB	PLE NAME/	COV	DIL VAP ICENTR (ppmv)	ation)	CON	OIL VAP CENTR (%LEL	ation)	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ff) Water Level
□ 0	ASPHALT GRAVEL (Fili) - light brown, trace sand, damp CLAY - black, some silt, trace gravel and sand, damp - olive, gray and orange mottling, white inclusions below 1.1 m - moist below 1.5 m	BWAS CT	NUME	SAMF	N.VA	SAMF LAB A	PLE NAME/ NALYSES	İ)		(%LEL 40 6)	Groundwater Potentiometric Surface on 2012/06/13 Monitoring Well Installed, Screened from 0.9 m to 4.0 m, Well Dia. 51 mm		Ω
	DEPTH HOLE SIZE EQUIPMENT							ONTRAC						TYPE: RKI Eagle		30
0.0 m	254 mm B-40; Hollow Stem Aug	er					M	laple Leal	Drilling L	imited		LOG	GED: GV	VC REVIEW: RAB D	RAFTED: E	EHC
														\RSO	NE	5

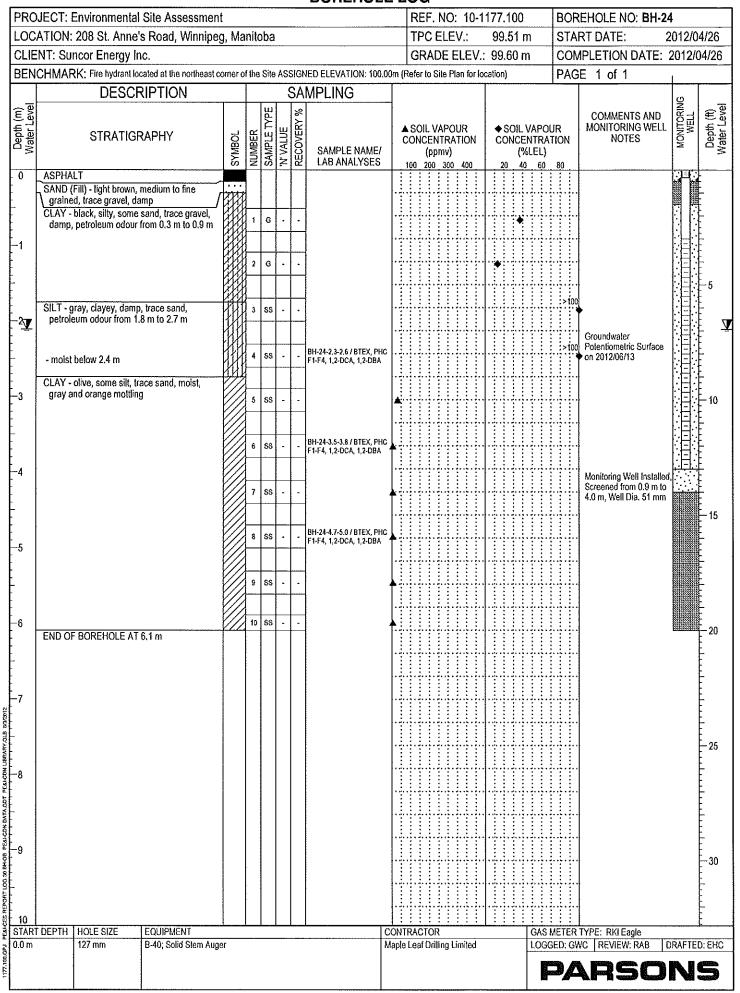


	JECT: Environmental Site Assessmer					BOREHOLI		 -		- 1	10	: 1	0-1	17	7.1	00			В	OR	REHOLE N	IO: BH-2	0	
	ATION: 208 St. Anne's Road, Winnipe	g, Mai	nitot	а								٧,:				7 r			S	TΑ	RT DATE		2012/0)4/25
	NT: Suncor Energy Inc.													: 9		1 n	n		C	ON	IPLETION	I DATE:	2012/	04/25
BEN	CHMARK: Fire hydrant located at the northeast	comer of	the S				0m (R	Refe	er to	Sit	e P	lan t	or lo	catio	n)				P	AG	E 1 of 1	i		
Depth (m) Water Level	DESCRIPTION STRATIGRAPHY	SYMBOL	NUMBER PANDI THAN	N' VALUE	RECOVERY % S	MPLING SAMPLE NAME/ LAB ANALYSES	C	10:	ICE (t	NT pm	RA v)	UR TIC	N	(ON	ICE (%	NT 6LE		101		COMMEI MONITOR NO	ING WELL	MONITORING	Depth (ft) Water Level
0	ASPHALT	/		, :	-	END AWART GEG	: 1	:	20	0 :	300	40	<u>:</u>	 	20 :	40	<u> </u>	50 : :	80					
	SAND (Fill) - light brown, trace gravel, damp CLAY - black, some sand, damp, petroleum odour from 0.3 m to 0.9 m - some silt below 0.9 m		2 (3 -			*			***************************************										*****				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
_Z	SILT - gray, clayey, trace sand, moist, petroleum odour from 1.7 m to 2.6 m		3 S			BH-20-2.3-2.6 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DB/								•							Groundwate Potentiomet on 2012/06/	ic Surface		
-3	CLAY - olive, trace send and silt, damp		5 8		-	10 10 10 10 10 10																		10
-4	- gray, orange and gray mottling, white inclusions		7 S			BH-20-3.5-3.8 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA									* * * * * * * * * * * * * * * * * * *	••••					Monitoring W Screened fro 4.0 m, Well I	m 0.9 m to		15
5			9 SS		-	BH-20-4.7-5.0 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA																		
	END OF BOREHOLE AT 6.1 m																		+ + + + + + + + + + + + + + + + + + +					20
—8 —9		7110012	- Principle Tribition					· · · · · · · · · · · · · · · · · · ·									#		0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					-25
10 START I						[cc	NTR/	AC	TOF	₹						1	GAS	S ME	TE	RT	YPE: RKI Ea	ple		-
0.0 m	127 mm B-40; Solid Stem Auge	ı				Ma	ple Le	eaf	Dril	ling	Lin	nited	i			1	LOC	GE	D: C	3WC	REVIEW:	RAB DE	RAFTED	



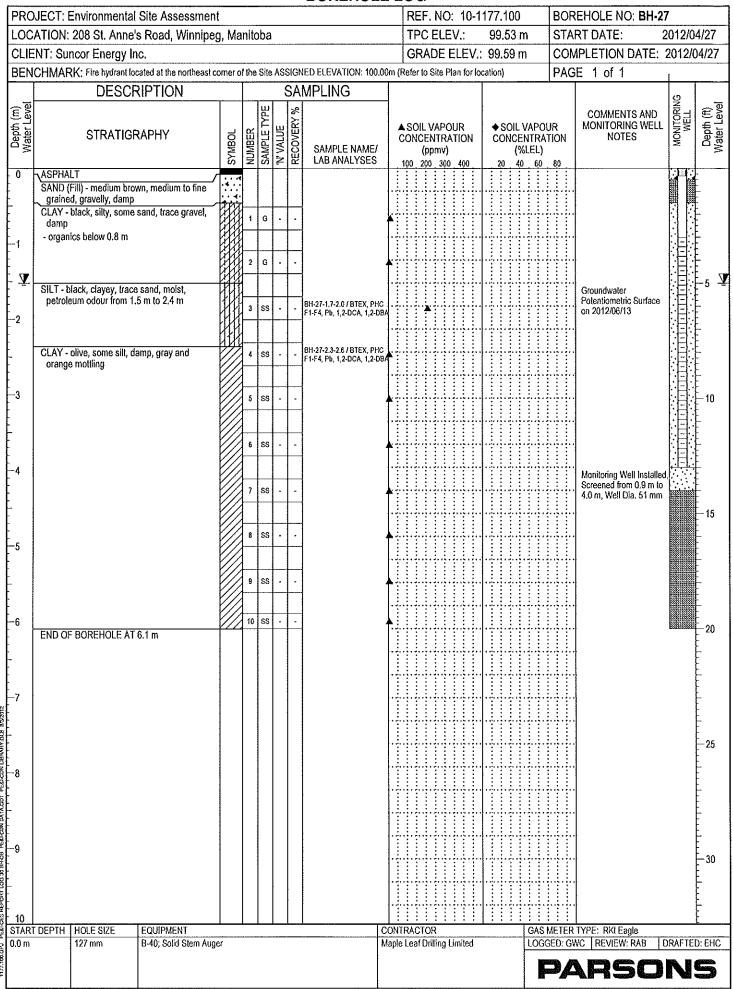






PRC	JECT: Environmental Site Assessmen	t						R	REF	. No) :	10-1	17	7.1	00		BC)R	EHOLE NO: BH-25		
LOC	ATION: 208 St. Anne's Road, Winnipe	g, Ma	nitot	a				T	PC	EL	EV.	:	ę	9,5	i2 m)	ST	ΑF	RT DATE: 2	012/0	4/26
CLIE	NT: Suncor Energy Inc.							G	RA	DE	EL	EV.	: 9	9.6	0 m		CC	DM	PLETION DATE: 2	2012/0	04/26
BEN	CHMARK; Fire hydrant located at the northeast o	omer of	f the S	ite AS	SSIG	NED ELEVATION: 100.0	00m (F	Ref	er to	Site	Plan	for lo	cati	on)			PA	١G١	E 1 of 1	<u>.</u>	
	DESCRIPTION				SA	MPLING	T										•			_	
Depth (m) Water Level	STRATIGRAPHY	SYMBOL	NUMBER				(CO	NCE (p	VAP NTR pmv	rati ')	ON		COI	NCEN %)	/APO NTRA LEL)	TION	1	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft) Water Level
0	ASPHALT CONCRETE	4																			E
- - - - - - - 1	SAND (Fill) - light brown, medium to fine grained, gravelly, damp CLAY - black, silty, some sand, trace gravel, damp - organics from 0.5 m to 0.9 m			3 -																	
F	- olive below 1.4 m			+	╁	-	1		<u></u>			<u>:</u> :			<u>i.i.</u>	<u> </u>				: i	-5
-2 V	SILT - gray, clayey, trace sand, moist, petroleum odour from 1.7 m to 2.7 m			is -		BH-25-1.7-2.0 (DUP-25) / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA							•			· · · · · · · · · · · · · · · · · · ·			Groundwater Potentiometric Surface on 2012/06/13		, , , , , , , , , , , , , , , , , , ,
-3	CLAY - olive, trace sand and silt, moist, gray and orange mottling with white inclusions at 2.7 m		5 8	s -	-	The control of the co	***												Monitoring Well Installed, Screened from 0.9 m to 3.1 m, Well Dia. 51 mm		10
<u>-</u> 4			6 8	s -	-	BH-25-3.5-3.8 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DB				· <u>.</u>									·		<u>-</u>
-			7 S	s -	-																15
-5			8 8	s -	•	BH-25-4.7-5.0 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DB															
-			9 8	s -	-																
-6			10 S	s -	+-	-		:													Ē
7	END OF BOREHOLE AT 6.1 m							***************************************												<u> percentece</u>	20
												*									- 25
8																					-
9			77 THE RESERVED TO SERVED THE SER		1900/1909/PP PP 1955014/WATERWATERWATERWATERWATERWATERWATERWATER							- ! - ! - ! - ! - ! - ! - ! - ! - ! - !									-30
STAR	DEPTH HOLE SIZE EQUIPMENT	Ll			1	10	: CONT	RA	: : .CTO	: :)R	<u>:</u>	<u>: :</u>	Ŀ	:_	: : T	GAS	. : : METF	: R 1	YPE: RKI Eagle		<u> </u>
0.0 m	127 mm B-40; Solid Stem Aug	er					vlaple				Limi	ted			1	LOG	GED: (GW	C REVIEW: RAB D	RAFTE	D: EHC
																F	رد	Δ	ASO!	V	

<u> </u>	DJECT: Environmental Site Assessmer								RI	EF.	NO) :	10-	117	7.1	00		I	BOF	REHOLE NO	: BH-2	6	
	ATION: 208 St. Anne's Road, Winnipe	g, Ma	anit	oba	3					PC					99.5				STA	RT DATE:	2	2012/0)4/26
	ENT: Suncor Energy Inc.												EV.			9 n	1	-		MPLETION D	DATE:	2012/	04/26
BEN	ICHMARK; Fire hydrant located at the northeast	comer o	of the	Site				10m (F	Refe	r to 8	Site	Plar	n for l	locat	ion)				PAG	E 1 of 1		1	
Depth (m) Water Level	DESCRIPTION STRATIGRAPHY	SYMBOL	MBER	MPLE TYPE			MPLING SAMPLE NAME/					ATI	R ION		◆S0 CON	ICE		ATIO		COMMENT MONITORIN NOTE	G WELL	MONITORING	Depth (ft) Water Level
		₹	₽	S	z	8	LAB ANALYSES	1_1	100	200			400	L	20			.) 0	30				حـ
	ASPHALT SAND (Fill) - light brown, medium to fine grained, gravelly, damp		1	G	-	-																	
-1 -	CLAY (Fill) - black, silty, some sand, damp		2	G	-					••••		******			•••••					7			
	SILT - gray, damp, trace sand and clay, damp, petroleum odour from 1.5 m to 2.0 m		3	ss	-	-	BH-26-1.7-2.0 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DB																5
_3 <u>₩</u>	CLAY - olive, trace silt, damp - gray and orange motlling at 2.1 m		4	ss		-	BH-26-2.3-2.6 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DB													Groundwater Potentiometric on 2012/06/13			Ā
_3			5	SS		-														011 20 12100 (13			10
-4			6	ss	•	•														Manitoring Wel	l Installed		
			7	ss ss				*:												Screened from 4.0 m, Well Dia	0.9 m to		_ 15
5	- dark gray below 5,3 m		co.	ss																			إيديابيرا
6	END OF BOREHOLE AT 6.1 m		10	ss		-		1															
- - -7											· · · · · · · · · · · · · · · · · · ·												
8													· · · · · · · · · · · · · · · · · · ·										25
9		The second secon																					30
START 0.0 m	DEPTH HOLE SIZE EQUIPMENT 127 mm B-40; Solid Stem Auge							ONTR				lee-1	لدها			\Box	GAS	ME	TER	TYPE: RKI Eagl			
v.Q III	B-4U; Solid Stem Auge	sí					M	aple L	eaf.	Unili	ing l	imil	ied							IC REVIEW: R		RAFTE	



PRO	JECT: Environmental Site Assessment	:					BOREHOLE	-			NΩ): 1	10-	117	7.1	00			R	OR	EHOLE NO: BH-28		
	ATION: 208 St. Anne's Road, Winnipeg		nito	ba						C E					9.6						· · · · · · · · · · · · · · · · · · ·	012/0	14/27
	NT: Suncor Energy Inc.													: 9					⊢		PLETION DATE: 2		
	CHMARK; Fire hydrant located at the northeast co	mer of	the	Site	ASS	IGN	VED ELEVATION: 100.00														E 1 of 1		
	DESCRIPTION						MPLING	<u> </u>														<u></u>	
Depth (m) Water Level	STRATIGRAPHY	SYMBOL	NUMBER	SAMPLE TYPE	- 1	RECOVERY %		C	ONC	L V/ CEN (ppr 200	TR/ nv)	ATIC	NC		CON	۹CE ۹)	ENT 6LE	POL RAT L.)	ΓΙΟΙ		COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft) Water Level
0	√ASPHALT SAND (Fill) - medium brown, medium to fine √ grained, gravelly, damp	4									,												
-	CLAY - black, silty, some sand, damp, petroleum odour from 0.5 m to 1.2 m		1	G	-	-	8H-28-0.5-0.8 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DB/																<u>.</u>
-1 -1	grow holes 4.2 m		2	G	-											 							- - - -
Ā	- gray below 1.2 m SILT - gray, clayey, trace sand and clay, moist							[Groundwater Potentiometric Surface		5 5
-2	CLAY - olive, some silt, damp, gray and		3	ss	-																on 2012/06/13		-
_	orange mottling, white inclusions		4	ss	-		BH-28-2.3-2.6 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DB/																<u>-</u>
							, 1 (), 1,2 DOI1, 1,2 DOI																- - -
-3			5	SS	-	-																	F-10
.			6	ss	•	-								1									<u>-</u>
-4			1		-																Monitoring Well Installed, Screened from 0.9 m to		<u>-</u>
.			1	SS	+	\dashv	•										•				4.0 m, Well Dia. 51 mm		15
-5			8	ss	-	-																	
			9	ss	-	_													••••				
																							-
-6	END OF BOREHOLE AT 6,1 m	///	10	SS	•			\															20
.									::						·;··		·		· ; .				- - - -
-7																	<i>.</i>						- - - -
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			***************************************						.;						·!··		· .		· <u></u>				
10 START	DEPTH HOLE SIZE EQUIPMENT					_	100	ONTR	.: 401	(Up	<u>:</u>		:	Ŀ	:	: :	100	010	ET.	E0 7	TYPE: RKI Eagle		<u> </u>
0.0 m	127 mm B-40; Solid Stem Auge	r						aple L			ng L	imit	ed									AFTE	D: EHC
							**************************************													<i>A</i>	ARSOI		
																		-		<u>سم</u>	M DUI		

PRO	JECT: Environmental Site Assessmen			R	EF	. N	0:	1	0-1	177	7.1	00			E	3OF	REHC)LE N	10: B	H-29							
LOC	ATION: 208 St. Anne's Road, Winnipe	g, Ma	nito	ba	1				T	PC	Εl	E١	V.:		9	9.8	1 r	n		15	STA	ART D	ATE	:	2	012/0	4/27
CLIE	NT: Suncor Energy Inc.								G	RA	\DI	E	LE	٧.:	99	9,9	0 n	n		1	COI	MPLE	TION	I DAT	E: 2	2012/0)4/27
BEN	CHMARK: Fire hydrant located at the northeast o	omer o	fthe	Site	AS	SIGI	NED ELEVATION: 100.00)m (F	Refe	er to	Site	e Pla	an fo	or lo	catio	ก)				F	PAC	GE 1	of	1			
	DESCRIPTION				1	SA	MPLING																			40	
Depth (m) Water Level	STRATIGRAPHY	SYMBOL	NUMBER	SAMPLE TYPE					O	NCE (p	VAI ENT opm	RA v)	TIO		C	O	O(L ICE (%	NT 6LE	RA L)	TIC	NC	CC MOI	NITOF	NTS AI RING W TES	ND ELL	MONITORING WELL	Depth (ft) Water Level
0	√ASPHALT /	<u>,</u> , , ∢	П	Г	İ			1	:	: :	:		: :	:	1	:		:	:			1					
- - -	SAND (Fill) - medium brown, medium to fine grained, gravelly, some silt, trace clay, damp		1	G			***************************************							. į				. ! .	:::::::::::::::::::::::::::::::::::::::								
[- 1	CLAY - black, some silt, damp		Ë			<u> </u>		[::								
	SILT - gray, clayey, trace sand, moist		2	G	-	-	BH-29-1.1-1.4 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA, PAHs, Sel-Metals, Sel-Glycols							. <u>.</u>													-5
	CLAY - olive, silty, trace sand, damp		3	ss	·			.																			
- Ā	- trace silt		4	SS			BH-29-2.3-2.6 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA, PAHs, Sel-Metals, 4 Sel-Glycols	A														Grou	ındwatı	or.			Ā
-3			5	ss	-		,			<u>.</u> ,									;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;			Pote		tric Surf	ace		10
-			6	88		-				 				·				· : : : : : : : : : : : : : : : : : : :									
- -4 - -			7	SS	-	-												·	:::::::::::::::::::::::::::::::::::::::			Scree	ened fi	Well Ins om 0.9 Dia. 51	m to	E	, 1 , , , 1 ,
			8	ss		-								. <u> </u>													
_5 -			g	SS															:								-
- - - - -				SS	 - -					 																	
	END OF BOREHOLE AT 6.1 m																		***********							B000000000	20
-7 7 														***************************************					***************************************								25
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- - -9 -						***************************************																					30
<u> </u>																											-
10 START	DEPTH HOLE SIZE EQUIPMENT		Ш		1	_	l Co	L: ONT	: RA	: : CTC	: DR	: :	: :	:	<u>. :</u>	:	: :	: [G	: AS	: ME	TER	TYPE:	RKI	agle			<u> </u>
0.0 m	127 mm B-40; Solid Stem Auge	er	• • • •			•		aple				g Li	mite	eđ				L	OG	GE	D: G	WC F	REVIE	V: RAB	D	RAFTE	D: EHC
																					/	V E	76	5 (N	5

	CT: Environmental Site Assessment						REF. NO: 10-1177.100			OLE NO: BH-30	
	FION: 208 St. Anne's Road, Winnipeg, Manitoba										12/10/16 12/10/16
CLIEN	T: Suncor Energy Inc.									1 of 1	12/10/10
—	DECODIDION				C 4	MDI INIC		11.	YOL	1011	
	DESCRIPTION	· r		111		MPLING					
Depth (m)			NUMBER	퓝.	RECOVERY %			V4001/0		COMMENTS	BACKFILL Depth (ft)
ebt	STRATIGRAPHY	点	Ĕ	삙			▲ SOIL VAPOUR SOIL CONCENTRATION CONC	VAPOUR ENTRATION	N		ğ g
_		SYMBOL	M I	AME:		LAB SAMPLE NAME/ LAB ANALYSES	(ppmv) (100 200 300 400 20	%LEL) 10 60 80	-		"
		<u>σ</u>	_	0) =	14	DADVINESOFO	100 200 300 400 20 4	0 00 0	:		
											1 1 1
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	ODOLUD CURTOR										
⊢ 0	GROUND SURFACE _ASPHALT		_		-	- !					0
-	GRAVEL (Fill) - light brown, fine grained, some si	and] ,	DC -	. _						
-	and silt, damp, petroleum odour from 0.1 m to	and									
	3.8 m	4.4			\top	1 1			[]		
		113	2	oc .	. .	<u> </u>	, ‡. ‡. ‡. ‡. ‡. ‡. ‡. ‡. ‡. ‡. ‡. ‡.				
1 -		113]					
		717				BH301218/DTEY DHC			::		
-		33	3	DC	- -	BH-30-1.2-1.8 / BTEX, PHC F1-F4, Pb, 1,2-DCA 1,2-DBA					-5
[17.3				1,2700					
-2		4.4									
ļ ⁻		33	4	DC	٠ ٠	1			[[]		I F
- -		47.4		 	+	4					
		1				BH-30-2.4-3.1 / BTEX, PHC		<u>.i.i.i.i</u>			
ŀ		13.	5	DC	٠ -	BH-30-2.4-3.1/BTEX, PHC F1-F4, Pb, 1,2-DCA 1,2-DBA					
[−3		7) 7	 	\vdash	+	-		*****	***		10
<u>.</u>		3	6	DC	. .						_
Ŀ	- gray, fine grained, trace clay below 3.4 m					Ī					
-			\ <u></u>		+-	-			111		
! ,	CLAY - light brown, trace silt, moist	7//	7	DC	. .	BH-30-3,7-4.3 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA		4.4.4.4.	4-4-4		
-4						1,2-DBA					
E			8	DC	. .	_					
-	END OF BOREHOLE AT 4.6 m	///	4		-	-		****	::::	No Monitoring Well	15
ŀ	END OF BOREROLE AT 4.0 III	İ			İ			1.1.1.1.1.		Installed	- 1
<u> </u> 5	No Daylighting Performed										į.
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F		1						4-4-4-4			F 1
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OTA:	RT DATE START DEPTH HOLE SIZE EQ	UIPMENT			1_		CONTRACTOR	GAS ME	TER T	YPE: RKI Eagle	
2012		Sold Stem Auger			****		Maple Leaf Drilling Limited	LOGGE	D: ATK	REVIEW: ARN	DRAFTED: EFO
		-							A	RSO	NG
F										AT Read Conf	

PROJ	ECT: Environmental Site Assessment								REF. NO: 10-1177.	100		HOLE NO: BH-31	2/10/16	
	TION: 208 St. Anne's Road, Winnipeg, Mar	nitoba											2/10/16	
CLIEN	T: Suncor Energy Inc.											1 of 1		
	DESCRIPTION		Т		S	A۱	MPLING							
Ê	DECORAT HOLE			出	2	ج [1				COMMENTS		Depth (ft)
Depth (m)	STRATIGRAPHY	_	lk.	SAMPLE TYPE		į	ļ	A	SOIL VAPOUR	SOIL VAPOR	UR TION	COMMENTS	BACKFILL	Eg
å		SYMBOL	J.W.	J MP	F	3	LAB SAMPLE NAME/	0	(ppmv) 00 200 300 400	(%LEL)	HON		₩.	_
		8	ž	Ś	2 2	Ÿ	LAB ANALYSES	10	00 200 300 400	20 40 60	80			
		1	Į											
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	GROUND SURFACE							.			. [] . []	This borehole was drilled		-0
-0	ASPHALT		Y									on a 45 degree angle, all depths shown are		
-	GRAVEL (Fill) - light brown, fine grained some silt, damp	l, sandy,	1	DC	-	-	1	T.				down-hole depths.		
 -	. ,	14.3	+	+	+	_								
Ē			2	DC	-		BH-31-0.6-1.2 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA			1.4.4.4.4.4.4				-
 - 1	CLAY - black, some silt, trace gravel, da	lmb	1				1,2-DBA	ļ. <u>i</u> .						-
ŧ														-5
-			3	DC	-	٠		*						.
ŀ		\//	1	-	-							1		-
-2			14	DC			BH-31-1.8-24/BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA			1.4.4.4.4.4.4				-
<u> </u>			2				1,2-DBA	ļ. <u>i</u> .						
-			1											
ŀ			7 5	DC		-		A						
-3			1				-							-10
F	1		6	DC			8H-31-3.1-3.7 / 8TEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	A						-
-							1,2-DBA							
F			1											
-4	}		7	' DC	$ \cdot $	-		A :				1		F
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-	light brown, silty, moist, petroleum odou	jr from 4.5 m	71 8	B DC			BH-31-4.3-4.9 (DUP-31) / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA							-15
Ė	to 5.8 m						1,2-DCA, 1,2-DBA	A						
5						_	1							
•) DC				A				1		
				\perp			4	-:						F
ļ				0 DC				A .						<u> </u>
-6	gray, trace silt, damp											No Manhadan Wall		20
ľ	END OF BOREHOLE AT 6.1 m						1					No Monitoring Well Installed		-
128	No Daylighting Performed											•••		F
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ST4	ART DATE START DEPTH HOLE SIZE	EQUIPMENT			1	1_			ONTRACTOR			TYPE: RKI Eagle		
×	210/16 0.0 m 127 mm	B40; Solid Stem Auge	٢					M	laple Leaf Drilling Limited		GED: AT		RAFTED	
1177.10												\RSO	N!	
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		nmental Site Ass									REF. NO: 10-1177.	100			HOLE NO: BH-32	0/10/10	
			Winnipeg, Manitob)8												2/10/16 2/10/16	
CLIEN	T: Suncor E	nergy Inc.													1 of 1	2/10/10	-
		DEC	ODIDTION		Т			١٨١	MPLING				I	1 AGE	. 1 01 1	[
		DE9	CRIPTION			Lur			VIPLING								æ.
Depth (m)						SAMPLE TYPE		RECOVERY %	-		noil Libratio	A 0011	VADOU!		COMMENTS	BACKFILL	[]
ed		STRATIO	GRAPHY	SYMBOL	NUMBER	빌	'N' VALUE	2			SOIL VAPOUR CONCENTRATION	◆ SOIL CONCE	NTRATI	ION .		ğ	Del
				, AM	IŞ	W.	> 2	ŭ	LAB SAMPLE NAME/ LAB ANALYSES		(ppmv) 100 200 300 400	20 40	6LEL) 60	ខ្មា		_ m	16 (II) (III) Updag 0 5 5 10 10
				- 0	+	107		-	DAD A FACTOCO	:	100 200 300 400	20 40					
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	מפטוואר	SURFACE								:							
⊢o ∣	ASPHAL					+-	\vdash		İ	• • • •					This borehole was drilled		F"
	GRAVEL	(Fill) - light brown	n, fine grained, sa	ndy,	1	DC			ļ	.					on a 45 degree angle, all depths shown are		-
<u> </u>	some si	it, damp			.}				ļ						down-hole depths.		
-				3	:\[-	+											F
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[\[\bigsize\]				8H-32-1.2-1.8/ BTEX. PHC	:					-		_
-				233	3	DC	-	-	BH-32-1.2-1.8/BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	4	********						-5
	CLAY - b	lack, some silt, m	olst, orange staini	ng from	7_				1,200						.]		+
-2	1.7 m to) 2.1 M		1//													
-				1/	∄ ⁴	DC	-	•		:							F
				<i>//</i>	1	+						1.4.4.4.					-
[<i>\(\lambda\)</i>	1 5	DC			BH-32-24-3.1/BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA								ŁΙ
1	- dark gra	ıy, trace silt, mois	t below 2.7 m	<i>\(\lambda\)</i>	∄°	100		•	1,2-DBA	Ī							ŧ
-3				1//	1	+	\vdash			:::		1:1:1:1:			•		<u> </u> 10
				\(\frac{1}{2}\)	7 6	000											E
<u> </u>					1					Γ							[
-	- brown.	petroleum odour	from 3.7 m to 4.3	m //	1	\vdash				 '':					1		
-4		•			7	DC	-		BH-32-3.7-4.3 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						-
-	Refusal a	at 4.3 m		<i>//</i>					1,2-DBA								Ł I
-		BOREHOLE AT	4.3 m		1	1									No Monitoring Well Installed		<u> </u>
-	No Dovi	ghting Performed	1		ļ							1-1-1-1-					-15
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STAR	T DATE	START DEPTH	HOLE SIZE	EQUIPMENT					_1		ONTRACTOR		GAS M	ETER'	TYPE: RKI Eagle		
2012/10		0.0 m	127 mm	B40; Sold Stem Auge						M	taple Leaf Oriling Limited			ED: ATI		RAFTEC	
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	ECT: Environmental Si									REF. NO: 10-1177.1	100		HOLE NO: BH						
		Road, Winnipeg, Manito	ba						\perp				DATE:						
CLIEN	IT: Suncor Energy Inc.													2012/10/10					
		DESCRIPTION					RAP	MPLING				1							
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Depth (m)				NUMBER	T.		RECOVERY %			OOII VADOUD	A CON MADO	10	COMMENTS		<u>€</u>				
E D	STF	RATIGRAPHY	찞	BER	믬	ã	8		C	SOIL VAPOUR ONCENTRATION	 SOIL VAPO CONCENTRA 	TION		Ş	a B				
			SYMBOL	Š	SAM	> 2	띭	LAB SAMPLE NAME/ LAB ANALYSES	10	(ppmv) 0 200 300 400	(%LEL) 20 40 60	An		"					
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	GROUND SURFACE	=																	
-0	ASPHALT			-					***					**********	₽°				
	GRAVEL (Fill) - light	brown, fine grained, sa	andy,] ,	DC				<u>.</u> : . :						-				
	some silt, damp	, •	 * .*						[::						1				
-			343	1					*:										
ļ.				2	DC				A .			. į į į			- 1				
-1	CLAY - black, some from 0.9 m to 2.3 m	silt, damp, petroleum o	dour	1											F				
-	HOIR U.S IN TO 2.3 II		1//	1			H	DULOS CO CENTRAL SUIS				:::::			F				
Ļ.			V//	3	DC		-	BH-33-1.2-1.8/ BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	A			. į į į			-5				
ļ. ;	light gray, silty, mois	t	 					1,2-DBA							Ł				
ļ.,															F				
-2				4	DC	-	-		*		- <u></u>				F				
	light brown, trace sill	t, damo		9								. į į . į			<u> </u>				
-	18,772.2	•		1				BU 33.9 A.3.1 (BTEY DHC	1										
	***************************************			5	DC.	-	-	8H-33-2.4-3.1/8TEX, PHC F1-F4, Pb, 1,2-DCA 1,2-DBA	*						-				
-3	:		<i>\(\frac{\fin}}}}}}{\frac}\frac{\frac{\frac}}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}}}}}}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\f{\fi</i>	1_				1,2-UBA				<u>.i.i.i.</u> .			L ₁₀				
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 								BH-33-3.7-4.3 / BTEX. PHC							1				
-4			<i>\(\lambda\)</i>	7	DC.	-	-	BH-33-3.7-4.3 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	† †:						t				
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F			<i>\(\frac{\fin}}}}}}{\frac}\frac{\frac{\frac}\frac{\fra</i>	3											¥ ,,				
	END OF BOREHOL	E AT 4.6 m		1									No Monitoring Well Installed		15				
E													11979/sed		- 1				
-5	No Daylighting Perfe	ormea													Ł I				
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×	RT DATE START DE		EQUIPMENT							NTRACTOR	GAS	METER T	YPE: RKI Eagle REVIEW: ARN	DRAFTED): EFO				
盖 2012/10 量	0/16 0.0 m	127 mm	B40; Solid Stern Auger						Map	sie Leaf Drilling Limited									
1177.	1											$\mathcal{A}_{\mathcal{A}}$	rsc	JN:					
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		nmental Site Ass														177.									E NO:	BH-34	0/00/0:	
LOCA	TION: 208 S	t. Anne's Road,	Winnipeg, Manitob	oa .								[PC						.63						TDA			3/02/21	
CLIEN	IT: Suncor E	nergy Inc.									L	3RA	DE	EL	E۷.		99	.75	m					LET 1	ON DAT	=: 201	3/02/21	
BENC	HMARK: AS		ION: 100.00 m (Re	fer to Drawings	for lo	cation	1)		.	MDI BIO							Г					12/	4GE	. 1 (ו וט			-
_		DES	CRIPTION				F			MPLING							-									io Alie	נח	₌₌
Depth (m)							SAMPLE TYPE	'N' VALUE	%								<u> </u>							M	COMMENT ONITORIN	IG WELL	MONITORING WELL	Depth (ft)
th de		STRATIO	GRAPHY		힏	覓	핕	븳	削		A _C	SOI	L VA	PO	UR	N	1	• § ∩∩	SOIL	VA	POL RAT	JR HON	,		NOTE	S	E 및	Dep
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ŧ,	CLAY- b	rown, trace grave	el, sand and silt, m	oist	///					DITALLO SE POTEN DIRE													:				1:1:	<u> </u>
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≌	RT DATE	START DEPTH	HOLE SIZE	EQUIPMENT	Au-							NTF ole Le				vd			_				: ATI		: RKI Eag REVIEW:		RAFTE): EFO
盖 2013년 월	12/21	0.0 m	203 mm	B40; Hotow Stem	wuger						ma	, es c.e	اک مت	∞មូ	-111818					۲,								
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OCAT	ECT: Environmental Site Assessment							REF. NO: 10-1177	.100	ROKE	HOLE NO: BH-35	
	TION: 208 St. Anne's Road, Winnipeg, Manitoba							TPC ELEV.:	99.23 m			3/02/21
LIEN'	łT: Suncor Energy Inc.							GRADE ELEV.:	99.37 m		LETION DATE: 201 1 of 1	3/02/21
ENC	HMARK: ASSIGNED ELEVATION: 100.00 m (Refer to D	rawings for k	catio T	n)			4DUNO T			PAGE	1011	
Water Level	DESCRIPTION STRATIGRAPHY	SYMBOL	NUMBER	SAMPLE TYPE	'N' VALUE		MPLING LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	◆ SOIL VAP CONCENTR (%LEL	ration .)	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL Depth (ff)
-1 -2 -3 -4 -5	GROUND SURFACE ASPHALT GRAVEL (Fill) - light brown, coarse grained, sandy frozen SILT - dark gray, clayey, trace gravel and sand, frozen - damp below 0.9 m CLAY - grayish brown, silty, trace gravel and sand damp		3 3 4 5 5 6 7 7 9	DC SS SS SS SS SS		100 100 100 100	BH-35-4-2-4.8 / BTEX, PHC F1-F4, P6, 1,2-DCA 1,2-DBA BH-35-4.8-5.4 / Grain size	100 200 300 400 400 400 400 400 400 400 400 4	20 40 6	0 80 80 80 80 80 80 80 80 80 80 80 80 80	Monitoring Well Installed, 51 mm Dia. PVC Pipe, 10 Slot, Screened from 0.6 m to 3.7 m Groundwater Potentiometric Surface on 2013/03/14	
-9								CONTRACTOR	[6]	VS WETED 3	 IYPE: RKI Eagle	2 3 4 7 7 8 1 1 1
	RT DATE START DEPTH HOLE SIZE EQU	IPMENT						CONTRACTOR		GGED: ATH		
STAF 2013/0		lollow Stem Aug						Maple Leaf Drilling Limited	117	¥(4(4)+)1· Δ + 4	REVIEW: ARN [PAFTED: EF

	ECT: Environmer										- 1	RE	F. N	10:	10)-11	177.	100									BH-36		
			Winnipeg, Manitol	oa							\perp															DATE: ETION DATE:		3/02/21	
CLIE	NT: Suncor Energ	y inc.															_									of 1	201	3/02/21	
		DEC	ODIDTION						·Λħ	//PLING													111	١٥١	1	1 01 1	*****		
~		DE2	CRIPTION				iii T	- (**		VIFLING																			₽
Depth (m)							SAMPLE TYPE		RECOVERY %							_		L.		011	\ f4	201	10		-	COMMEN	TS	BACKFILL	Depth (ft)
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-2	sand, damp					4	ss		100	Į.	<u>.</u>								<u>;</u> .	٠					1				-
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F	- dark grayish	brown belov	v 2.4 m							BH36.2 4.3 0 / RTEY PHC										:									
ŀ						5	SS	-	100	BH-36-2.4-3.0 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	4 · ·		• • •		•	•	•	1:	••••	÷.,	: :	:	:::	•••	1				-
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ŀ	- dark grayish	hrown helo	w 5.6 m]				BH-36-5.4-6.0 (DUP-36)/		:	: :	:	i	: :				:		:	:						Ł
ļ.,	July 1511	2101111 2010	., ••			10	SS	-	100	BH-36-5.4-6.0 (DUP-36) / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA								1							Π				
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×		RT DEPTH	HOLE SIZE	EQUIPMENT									RA(eaf D			المعالم										PE: RKI Eagle REVIEW: AI		RAFTEO	: EFO
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	ECT: Environmental Site									REF. NO: 10-1177.	100		HOLE NO: BH		
1	TION: 208 St. Anne's Ro	ad, Winnipeg, Manito	pa											2013/02/21 2013/02/21	
CLIEN	IT: Suncor Energy Inc.								i				1 of 1	2010/02/21	-
	Di	ESCRIPTION		Τ		- 8	ΑN	MPLING							
Œ				<u> </u>	끮	-							0011151170	-	Depth (ft)
Depth (m)	STRA	ATIGRAPHY		K	SAMPLE TYPE	삙	RECOVERY %		•	SOIL VAPOUR	◆ SOIL VAPO CONCENTRA	UR	COMMENTS	BACKFILL	ept
a	0		SYMBOL	JMB	MPL	'N' VALUE	S S	LAB SAMPLE NAME/	(CONCENTRATION (ppmy)	(%LEL)	ATION		BA	
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-0	GROUND SURFACE								ļ.i.,				:		<u></u> L₀
F"	ASPHALT GRAVEL (Fill) - light b	rows coores areland	condu V:	ν.				BH-37-0.0-0.6 / BTEX, PHC						4:::::	
ŀ	frozen			1	DC	•	100	BH-37-0.0-0.6 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	Ť:						
Ī	SILT - black, clayey, tr	ace gravel and sand,	frozen	}	\vdash										f
! .	da halann 0.0 m			2	DC	- -	100		.						-
-1	- damp below 0.9 m			Ł					<u> :</u>						
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-2				1 4	ss	-	100	8H-37-1.8-2.4 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	.▲.		- <u>:</u> -:-:				- 1
E	yellowish brown, some from 2.1 m to 3.2 m	e clay, moist, petrolet	m ocour					1,2-DBA	 						
-	:														1
-				5	SS	-	100		*						
- 3	WHAT THE THE THE THE THE THE THE THE THE TH			-											-10
ŀ	CLAY - dark grayish b	rown, some silt, trace	gravel	6	ss		100	8H-37-3.0-3.6 / BTEX, PHC F1-F4, Pb, 1,2-DCA 1,2-DBA	<u>.</u>						1
F	and sand, damp		\//					1,2-DBA							
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-4			1//	7	SS	-	100		* :						
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-			<i>//</i>	/ a	SS	_	100	8H-37-4.2-4.8 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA							_ 15
ļ.	1		<i>\(\lambda\)</i>					1,2-DBA							
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Ŀ				1	\vdash					4.4.4.4.4.4.4.4					+
-			<i>\(\lambda\)</i>	/ 10	ss		100								-
<u>-</u> 6															20
ŀ	END OF BOREHOLE	AT 6.1 m		1									No Monitoring Well Installed		F 20
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STAF	 RT DATE START DEP1	TH HOLE SIZE	EQUIPMENT					<u> </u>	c	ONTRACTOR			J YPE: RKI Eagle		
20130		127 mm	B40; Solid Stern Auger					11.000		aple Leaf Drilling Limited			REVIEW: ARN	DRAFTED): EFO
1 77.46													RSC)N	5

		nmental Site Ass									HOLE NO: BH-38	- '
			Winnipeg, Manitob	a								3/02/21 3/02/21
CLIEN	T: Suncor E	nergy Inc.									1 of 1	3/02/21
		DEC	CRIPTION		$\overline{}$			Q A	MPLING	17101	7 01 1	
e		חבטו	JAPTION			i	II					, €
Depth (m)		STRATIO	GRAPHY	Į Q	MID OF	MBEX	MPLE 17P	COVERY 9	LAB SAMPLE NAME/	OIL VAPOUR NCENTRATION (ppmv) SOIL VAPOUR CONCENTRATION (%LEL)	COMMENTS	BACKFILL Depth (ft)
					5 2	z {	à ē	2 2	LAB ANALYSES	200 300 400 20 40 60 80		
1 2 3 4 4 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ASPHAL GRAVEL frozen SiLT - da frozen, c - damp, p - grayish CLAY - b damp SiLT - br sand, d CLAY - d damp	SURFACE (Fill) - light brown rk gray, some cla odour from 0.5 m etroleum odour fr brown below 1.5	n, coarse grained, y, trace gravel and to 0.9 m rom 0.9 m to 2.0 m in trace gravel and si ayey, trace gravel m, trace gravel and	d sand,		1 1 5 6 7 8 9	DC SSS SSS	- 10 - 10 - 10 - 10	BH-38-0.6-1.2/BTEX, PHC) F1-F4, Pb, 1,2-DCA 1,2-DBA BH-38-3.0-3.6 (DUP-38)/	NCENTRATION CONCENTRATION (ppmv) (%LEL)	No Monitoring Well Installed	BYXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
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9	•											
STAF	RT DATE	START DEPTH	HOLE SIZE	EQUIPMENT		l	Ш				TYPE: RKI Eagle	1
20130		0.0m	127 mm	840; Sold Stem Aug	jer					Leaf Drilling Limited LOGGED: AT		RAFTED: EFO
201										PA	\RSO	NS_

PROJ	ECT: Environmental Site Assessment						LIIOLL LOC		REF, NO: 10-1177.1	100			IOLE NO: BH-		
LOCA	TION: 208 St. Anne's Road, Winnipeg, Manitoba													2013/02/21	
CLIEN	IT: Suncor Energy Inc.							i					ETION DATE:	2013/02/21	
l	DESCRIPTION					SAN	VPLING					Ī			
E	DESCRIPTION			'n	$\overline{}$		VII EIITO					ļ		_	€
Depth (m)	STRATIGRAPHY	ب	NUMBER	ΕŢ	띡	RECOVERY %		_	SOIL VAPOUR	♦ SOIL VA	POUR		COMMENTS	BACKFILL	Depth (ft)
Del	STRATIGIATITI	SYMBOL	MBE	MPL	'N' VALUE	8	LAB SAMPLE NAME/	(CONCENTRATION	CONCENT	ration :11	l		BAC	Δ
		S	₹	SAI	z	밑	LAB ANALYSES	1	(ppmv) 100 200 300 400	(%L1 20 40	60 80				
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	GROUND SURFACE														
-0	ACDUAL T		-		-	\dashv	:	;						***********	F°
-	GRAVEL (Fill) - light brown, coarse grained, sandy,		1	DC	-	100		.	4.4.4.4.4.4.4.4.		•••••••••••••••••••••••••••••••••••••••				-
<u> </u>	frozen SILT - black, some clay, trace gravel and sand,	İΠ	L							<u></u>		.:.			
[frozen	Ш					BH-39-0.6-1.2 / BTEX, PHC								
<u> </u>	- damp below 0.9 m		2	DC	•	100	BH-39-0.6-1.2 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	Ť			· · · · · · · · · · · · · · · · · · ·				Į.
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[- grayich brown helow 2.1 m. netroteum adour from	Ш	4	SS		100	BH-39-1.8-2.4 / BTEX, PHC F1-F4, Pb, 1,2-DCA 1,2-DBA		.						
ļ	- grayish brown below 2.1 m, petroleum odour from 2.1 m to 3.0 m	Ш	L	ļ			1,2-004								£
F		Ш													
Ė		Ш	5	SS	•	100	•	•							F
-3	- yellowish brown below 3.0 m	Ш	┞	-		-						••••			-10
ļ.	CLAY - dark grayish brown, trace gravel and sand,	///	6	SS		100	8H-39-3.0-3.6 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA								<u></u>
F	damp		1	**			1,2-DBA	T							#
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, -	END OF BOREHOLE AT 6.1 m												Installed		F L
-	No Daylighting Performed														E
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<u> </u>	RT DATE START DEPTH HOLE SIZE EQUIPMENT	uas:							ONTRACTOR daple Leaf Drilling Limited		AS MET		YPE: RKI Eagle REVIEW: ARN	DRAFTED): EFO
2013/0	2/21 0.0 m 127 mm B40; Solid Stem A	uyer						M	er-o con rum Grunnan					1	
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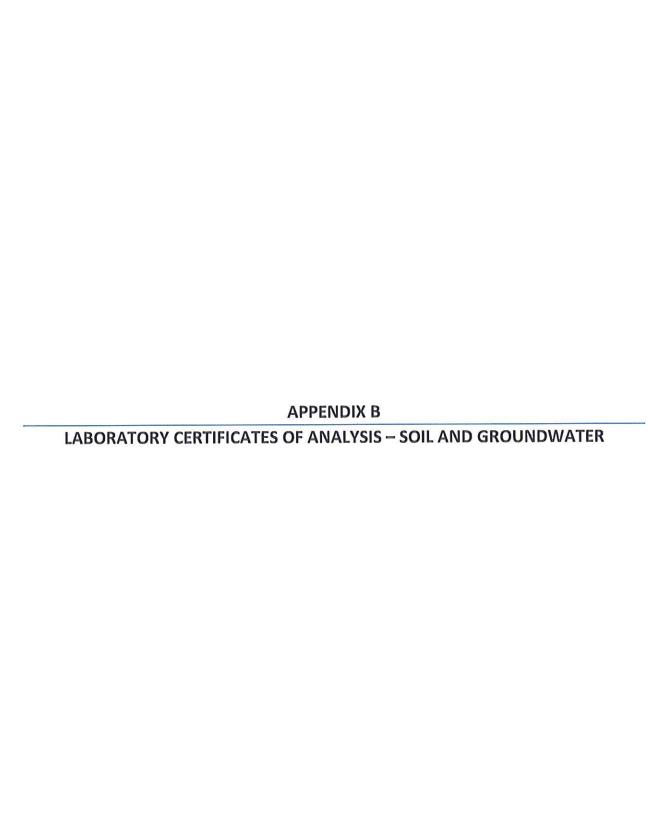
PRO.	ECT: Envir	onmental Site As	ssessment							REF. NO: 10-1177,100 BOREHOLE NO: BH-40	
			, Winnipeg, Manito	ba							3/02/22 3/02/22
CLIE	1T: Suncor	Energy Inc.								COMPLETION DATE: 201: PAGE 1 of 1	3/02/22
	1	חבכ	SCRIPTION		Т			QΔ	MPLING	17/00 1 01 1	
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Depth (m)		STRAT	IGRAPHY		; ; @	SAMPLE TYPE	当	RECOVERY %		▲ SOIL VAPOUR CONCENTRATION COMMENTS	BACKFILL
Ď				ONWA		SAMP	'V' VA	RECO	LAB SAMPLE NAME/ LAB ANALYSES	(opmv) (%LEL)	8 5
0 1 2 3 4 5 6 7 8 9	GRAVEI sand a	. (Fill) - light brov it, frozen ill) - light brown, ravel, frozen elow 0.9 m - (Fill) - light brov nd slit, damp		silty,	<u> </u>	2		100 0 0 0 0	BH-40-4-8-5-4/BTEX, PHC F1-F4, Pb, 1,2-DCA 1,2-DBA BH-40-4-8-5-4/BTEX, PHC F1-F4, Pb, 1,2-DCA 1,2-DBA	10 20 30 40 20 40 80 80 80 80 80 80 80 80 80 80 80 80 80	
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× – –	RT DATE	START DEPTH	HOLE SIZE	EQUIPMENT						CONTRACTOR GAS METER TYPE: RKI Eagle Maple Leaf Drilling Limited LOGGED: ATK REVIEW: ARN DR	AFTED: EF
돌 2013/0 용	2522	0.0 m	127 mm	B40; Solid Stem Auge	r						
5113				1						PARSOI	٧C
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PRO	JECT: Enviro	mental Site Ass	essment								REF. NO: 10-1177.1	00		HOLENO: BH		
			Winnipeg, Manitob	a						\perp				DATE: LETION DATE:	2013/02/22 2013/02/22	
CLI	NT: Suncor E	nergy Inc.												1 of 1	2010/02/22	
	T	DECC	PDIDTION					Q A N	MPLING				ITAGE	1 01 1		
<u>ج</u> ا		DESC	CRIPTION		+	Tш			VIFLING							€
Depth (m)		STRATIO	GRAPHY	SYMBOL	NIMBER	SAMPLE TYPE	'N' VALUE	OVERY 9	LAD SAMDLE NAME	С	SOIL VAPOUR CONCENTRATION	SOIL VAPO CONCENTRA	UR TION	COMMENTS	BACKFILL	Depth (ft)
_				SYN	Ž	₩.	ž	REC	LAB ANALYSES	10	(ppmv) 90 200 300 400	20 40 60	80			
3 6 7 8 8 10 20 20 10 20 20 20 20 20 20 20 20 20 20 20 20 20	GROUND ASPHALT GRAVEL sand, tra - wet belo CLAY (Ti moist	(Fill) - light browr ice silt, frozen w 1.2 m		some		G		0 0 100 100 100 100 100 100 100 100 100	BH41-24-38/BTEX, PHC F1-F4, Pb, 1,2-DCA 1,2-DBA BH41-36-36/BTEX, PHC F1-F4, Pb, 1,2-DCA 1,2-DBA BH41-36-42/BTEX, PHC F1-F4, Pb, 1,2-DCA 1,2-DBA		(ppmv) 00 200 300 400	(%LEL)	60	No Monitoring Well Installed		-0 -10 -15 -15 -20
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M.GPJ									<u> </u>	<u> </u>	OUTDICES.	<u> </u>	UETCO :	PVDE, DVIE		
	ART DATE	START DEPTH	HOLE SIZE	EQUIPMENT Vacuum Excavator, V	Jater)	anne					ONTRACTOR adger Daylighting Inc.	GAS	METER S	YPE: RKI Eagle REVIEW: ARN	DRAFTED): EFO
章 20 20	3/02/22 13/02/22	0.0 m 2.4 m	203 mm 127 mm	Vacuum Excavator, v B40; Solid Stem Aug		11 TOS					aple Leaf Drilling Limited	<u> </u>				
1177													 /-	\RSC	JIV:	

	ECT: Environmental Site Asse								_	REF	, NO): 1	10-	177	.10	0								BH-42	2/02/22	
	TION: 208 St. Anne's Road, V	Winnipeg, Manitob	oa						_								_						DATE: ETION DATE:		3/02/22 3/02/22	
CLIEN	T: Suncor Energy Inc.												-										1 of 1	201	OIVELL	
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Deç	STRATIO	3KAFIII	SYMBOL		SAMPLET	I	8	LAB SAMPLE NAME/	C	ONO	EN'	TRA	TIC	N		CC	ONC	CEN	APC	TIC	N	1			BAC	<u>~</u>
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	SiLT - dark gray, clayey, tra	ace gravel and sa		╢	٠ ا	-	100	1		: :	;		:	1		: :	i	:	1							[]
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E	and sand, damp			1	ā D	c -	100	1	k	-	•	• • •	٠.		-	-		••••		• •		-				F
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-	- brown, trace gravel, sand	and silt below 3.	4 m		6 D	c ·	100	BH-42-3.0-3.6 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	k		•	•••	•	**:	•	: :	. :	•	: :	•						
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		onmental Site As										RE	F.	NO	1	0-11	77.	100									BH-43		
			Winnipeg, Manito	ba							_												_			DATE:		13/02/22	
CLIEN	II: Suncor	Energy Inc.																								LETION DATE 1 of 1	20	13/02/22	·
 		DEC	CDIDTION						2 / 1	MPLING														ΓN	95	01 1		<u> </u>]
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PROJ	IECT: Envir	onmental Site As	ssessment									REF. NO: 10-1177.	100				H-44	
			l, Winnipeg, Manito	ba												T DATE:	2013/02/2	
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		DES	SCRIPTION						SA	MPLING								_
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F					Ш	3	ВC	-	100	BH-44-1.2-1.8 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	:::		∤ ::: * ::			1		-5
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-2	SILT-g	rayish, trace grav	vel, sand and silt, r	noist,						BH-44-1.8-2.4 (DUP-44) /	:							#
ļ -	petrole	um odour from 1	1.0 III (O 3.0 M			4	DC	-	100	BH-44-1.8-2.4 (DUP-44) / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA	1:::	:::::::::	1.		::::::			#
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F,	CLAY -	grayish brown, so	ome silt, trace grav	vel and	//	<u> </u>		П	П	DI 1100000000000000000000000000000000000	1.1.		1::::					<u>–</u> 10
[sand, d	damp	-	ŀ.	///	6	DC	-	100	BH-44-3.0-3.6 / BTEX, PHC F1-F4, Pb, 1,2-DCA, 1,2-DBA			1.4.1.4.		<u>.</u>			
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Your Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA

Your C.O.C. #: S005955

Attention: Adam Wickman
O'CONNOR ASSOCIATES ENVIRONMENTAL
7 TERRACON PLACE
WINNIPEG, MB
CANADA R2J 4B3

Report Date: 2012/05/07

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B234555 Received: 2012/04/28, 11:57

Sample Matrix: Soil # Samples Received: 10

		Date	Date		
Analyses	Quantity	Extracted	Analyzed L	aboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	8	2012/04/28	2012/04/30 A	AB SOP-00039	CCME, EPA 8260C
BTEX/F1 by HS GC/MS (MeOH extract)	2	2012/04/28	2012/05/01 A	\B SOP-00039	CCME, EPA 8260C
CCME Hydrocarbons (F2-F4 in soil)	10	2012/05/03		AB SOP-00040 AB SOP-00036	CCME PHC-CWS
Charal in Sail by CC/EID (1)	4	2012/05/01	•		EPA 8015 D
Glycol in Soil by GC/FID (1) Glycol in Soil by GC/FID (1)	1	2012/05/01			EPA 8015 D
Elements by ICPMS - Soils	2	2012/04/30	2012/05/01 A	\B SOP-00043	EPA 200.8
Moisture	10	N/A	2012/04/29 E	EENVSOP-00139	Carter SSMA 51.2
Benzo[a]pyrene Equivalency	2	N/A	2012/05/02 A	\B SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons in soil	1	2012/04/28		AB SOP-00003 AB SOP-00036	EPA 3540C/8270D
Polycyclic Aromatic Hydrocarbons in soil	1	2012/04/28		AB SOP-00003 AB SOP-00036	EPA 3540C/8270D
Lead	8	2012/04/30	2012/04/30 A	AB SOP-00043	EPA 200.8
Low Level VOC in Soli	10	2012/04/28	2012/04/30 E	ENVSOP-00021	EPA SW846, 8260C

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

(1) This test was performed by Maxxam Calgary Environmental

Encryption Key

Machine Desirae Hopkinson

07 May 2012 14:05:33 -06:00

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

Desirae Hopkinson, Project Manager Email: DHopkinson@maxxam.ca

Phone# (780) 577-7104

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section



Your Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA

Your C.O.C. #: S005955

Attention: Adam Wickman O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2012/05/07

CERTIFICATE OF ANALYSIS -2-

5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA

Sampler Initials: GC

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		DH0621	DH0621	DH0622	DH0623		
Sampling Date		2012/04/26	2012/04/26	2012/04/26	2012/04/26		
2001		18:15	18:15	18:15	18:30		
COC Number	Units	S005955 BH-23-2.3-2.6	S005955 BH-23-2.3-2.6	S005955 DUP-23	S005955 BH-23-2.9-3.2	RDL	QC Batch
	Units	D11-23-2.3-2.0	Lab-Dup	DOI -2.0	B11-20-2.0-0.2	1,05	QC Baton
Physical Properties							
Moisture	%	18	N/A	18	33	0.30	5799442
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	100	N/A	60	<10	10	5799766
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	N/A	10	16	10	5799766
F4 (C34-C50 Hydrocarbons)	mg/kg	13	N/A	18	13	10	5799766
Reached Baseline at C50	mg/kg	Yes	N/A	Yes	Yes	N/A	5799766
Volatiles							
Benzene	mg/kg	0.31	0.28	0.23	<0.0050	0.0050	5800005
Toluene	mg/kg	0.16	0.11	0.084	<0.020	0.020	5800005
Ethylbenzene	mg/kg	7.1	3.9 (1)	2.3	<0.010	0.010	5800005
Xylenes (Total)	mg/kg	41	23 (1)	13	<0.040	0.040	5800005
m & p-Xylene	mg/kg	29	16 (1)	9.2	<0.040	0.040	5800005
o-Xylene	mg/kg	13	7.0 (1)	4.2	<0.020	0.020	5800005
F1 (C6-C10) - BTEX	mg/kg	230	97 (1)	53	<12	12	5800005
(C6-C10)	mg/kg	280	120 (1)	69	<12	12	5800005
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	108	109	109	116	N/A	5800005
4-BROMOFLUOROBENZENE (sur.)	%	102	99	101	100	N/A	5800005
D10-ETHYLBENZENE (sur.)	%	127	126	130	130	N/A	5800005
D4-1,2-DICHLOROETHANE (sur.)	%	98	97	103	99	N/A	5800005
O-TERPHENYL (sur.)	%	113	N/A	111	95	N/A	5799766

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.



Client Project #: 10-1177.100 Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA

Sampler Initials: GC

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		DH0722	DH0723	DH0724	DH0725		
Sampling Date		2012/04/26	2012/04/27	2012/04/27	2012/04/27		
		18:45	08:30	08:45	08:00	ļ	
COC Number	Units	S005955 BH-23-4.7-5.0	S005955 BH-27-1.7-2.0	S005955 BH-27-2.3-2.6	S005955 BH-28-0.5-0.8	RDL	QC Batch
	Units	ВП-23-4.1-3.0	<u>БП-27-1.7-2.0</u>	DN-21-2.3-2.0	ВП-20-0.5-0.8	INDL	QC Dateii
Physical Properties							
Moisture	%	35	17	31	20	0.30	5799442
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	200	<10	90	10	5799766
F3 (C16-C34 Hydrocarbons)	mg/kg	39	<10	24	1900	10	5799766
F4 (C34-C50 Hydrocarbons)	mg/kg	23	11	<10	3000	10	5799766
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	5799766
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5800005
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	5800005
Ethylbenzene	mg/kg	<0.010	8.2	<0.010	0.19	0.010	5800005
Xylenes (Total)	mg/kg	<0.040	12	<0.040	0.57	0.040	5800005
m & p-Xylene	mg/kg	<0.040	12	<0.040	0.33	0.040	5800005
o-Xylene	mg/kg	<0.020	<0.020	<0.020	0.24	0.020	5800005
F1 (C6-C10) - BTEX	mg/kg	<12	660	<12	43	12	5800005
(C6-C10)	mg/kg	<12	680	<12	44	12	5800005
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	116	108	116	108	N/A	5800005
4-BROMOFLUOROBENZENE (sur.)	%	100	100	101	100	N/A	5800005
D10-ETHYLBENZENE (sur.)	%	127	151 (1)	115	127	N/A	5800005
D4-1,2-DICHLOROETHANE (sur.)	%	99	97	99	102	N/A	5800005
O-TERPHENYL (sur.)	%	97	104	107	102	N/A	5799766

N/A = Not Applicable
RDL = Reportable Detection Limit

(1) Surrogate recovery exceeds acceptance criteria due to matrix interference. Reanalysis yields similar results.



Client Project #: 10-1177.100 Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA Sampler Initials: GC

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		DH0726	DH0748	DH0752	DH0752		
Sampling Date		2012/04/27	2012/04/27	2012/04/27	2012/04/27		
		09:15	09:30	10:00	10:00		
COC Number	Units	S005955 BH-2.8-2.3-2.6	\$005955 BH-29-1.1-1.4	S005955 BH-29-2.3-2.6	S005955 BH-29-2,3-2,6	RDL	QC Batch
	บกแร	Б11-2.0-2.3-2.0	B(1-20-1.1-1.4	B) (-23-2:3-2:0	Lab-Dup	I KOL	do Baton
Division Decembra						T	
Physical Properties Moisture	%	31	22	33	32	0.30	5799442
Ext. Pet. Hydrocarbon	/0	31	22	33	02	0.00	0700442
	7	-40	-40	-40	NIA	10	5799766
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	N/A		ļ
F3 (C16-C34 Hydrocarbons)	mg/kg	20	<10	17	N/A	10	5799766
F4 (C34-C50 Hydrocarbons)	mg/kg	10	<10	10	N/A	10	5799766
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	N/A	N/A	5799766
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	N/A	0.0050	5800005
Toluene	mg/kg	<0.020	<0.020	<0.020	N/A	0.020	5800005
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	N/A	0.010	5800005
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	N/A	0.040	5800005
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	N/A	0.040	5800005
o-Xylene	mg/kg	<0.020	<0.020	<0.020	N/A	0.020	5800005
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	N/A	12	5800005
(C6-C10)	mg/kg	<12	<12	<12	N/A	12	5800005
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	114	107	114	N/A	N/A	5800005
4-BROMOFLUOROBENZENE (sur.)	%	100	99	100	N/A	N/A	5800005
D10-ETHYLBENZENE (sur.)	%	129	124	114	N/A	N/A	5800005
D4-1,2-DICHLOROETHANE (sur.)	%	102	105	103	N/A	N/A	5800005
O-TERPHENYL (sur.)	%	106	107	108	N/A	N/A	5799766

RDL = Reportable Detection Limit



Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA Sampler Initials: GC

GLYCOLS BY GC-FID (SOIL)

Maxxam ID		DH0748	DH0752		
Sampling Date		2012/04/27	2012/04/27	<u>"</u>	
1		09:30	10:00		
COC Number		S005955	S005955		
	Units	BH-29-1.1-1.4	BH-29-2.3-2.6	RDL	QC Batch

Glycols					
Extractable (Water) Ethylene Glycol	mg/kg	<10	<10	10	5806519
Extractable (Water) Propylene Glycol	mg/kg	<10	<10	10	5806519
Surrogate Recovery (%)					
Extractable (Water) Methyl Sulfone (sur.)	%	59	56	N/A	5806519



Client Project #: 10-1177.100
Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA
Sampler Initials: GC

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Polycyclic Aromatics	Johns				
	Units	BH-29-1.1-1.4	BH-29-2.3-2.6	RDL	QC Batch
COC Number		S005955	S005955		
		09:30	10:00		
Sampling Date		2012/04/27	2012/04/27		
Maxxam ID		DH0748	DH0752		

Polycyclic Aromatics					
Benzo[a]pyrene equivalency	mg/kg	<0.10	<0.10	0.10	5799368
Benzo(a)pyrene	mg/kg	<0.0050	<0.0050	0.0050	5799336
Naphthalene	mg/kg	<0.0050	<0.0050	0.0050	5799336
Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	83	86	N/A	5799336
D12-BENZO(A)PYRENE (sur.)	%	94	100	N/A	5799336
D8-ACENAPHTHYLENE (sur.)	%	87	85	N/A	5799336
TERPHENYL-D14 (sur.)	%	97	97	N/A	5799336



Client Project #: 10-1177.100
Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA
Sampler Initials: GC

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		DH0621	DH0622	DH0623	DH0722	DH0723	1	
Sampling Date		2012/04/26	2012/04/26	2012/04/26	2012/04/26	2012/04/27		
. •		18:15	18:15	18:30	18:45	08;30		
COC Number		\$005955	S005955	S005955	\$005955	S005955		
	1116	DULGGGGGG	DUD 22	BH-23-2.9-3.2	BH-23-4.7-5.0	BH-27-1.7-2.0	BUI	QC Batch
	Units	BH-23-2.3-2.6	DUP-23	D11-23-2.5-3.2	DIF-20-4:1-0:0	D -27-111-2.0	į (OL	AO MAIO
Flements	Units	BH-23-2.3-2.6	DUP-23	Bn-23-2.8-3.2	B11-23-4.7-0.0		1	
Elements Total Lead (Pb)	mg/kg	4.1	5.3	16	16	2.9	1.0	5801629

Maxxam ID		DH0724	DH0725	DH0726	DH0748	DH0752		
Sampling Date		2012/04/27	2012/04/27	2012/04/27	2012/04/27	2012/04/27		
		08:45	08:00	09:15	09:30	10:00		
COC Number		S005955	S005955	\$005955	S005955	S005955		
	Units	BH-27-2.3-2.6	BH-28-0.5-0.8	BH-2.8-2.3-2.6	BH-29-1.1-1.4	BH-29-2.3-2.6	RDL	QC Batch
								.
Elements								
Total Arsenic (As)	mg/kg	N/A -	N/A	N/A	4.5	11	1.0	5802356
Total Lead (Pb)	mg/kg	15	36	16	N/A	N/A	1.0	5801629
Total Barium (Ba)	mg/kg	N/A	N/A	N/A	120	220	10	5802356
Total Chromium (Cr)	mg/kg	N/A	N/A	N/A	21	58	1.0	5802356
Total Copper (Cu)	mg/kg	N/A	N/A	N/A	14	41	5.0	5802356
Total Lead (Pb)	mg/kg	N/A	N/A	N/A	7.8	18	1.0	5802356
Total Zinc (Zn)	mg/kg	N/A	N/A	N/A	32	100	10	5802356



Client Project #: 10-1177.100 Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA Sampler Initials: GC

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		DH0621		DH0621		DH0622		
Sampling Date		2012/04/26		2012/04/26		2012/04/26		
. 0		18:15		18:15		18:15		
COC Number		S005955		S005955		S005955		
	Units	BH-23-2.3-2.6	RDL	BH-23-2.3-2.6 Lab-Dup	RDL	DUP-23	RDL	QC Batch
Volatiles								
1,2-dibromoethane	mg/kg	<0.040 (1)	0.040	<0.030 (1)	0.030	<0.020 (1)	0.020	5800022
1,2-dichloroethane	mg/kg	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	5800022
Surrogate Recovery (%)								
4-BROMOFLUOROBENZENE (sur.)	%	101	N/A	103	N/A	103	N/A	5800022
D10-ETHYLBENZENE (sur.)	%	128	N/A	119	N/A	112	N/A	5800022
D4-1,2-DICHLOROETHANE (sur.)	%	93	N/A	95	N/A	96	N/A	5800022
D8-TOLUENE (sur.)	%	100	N/A	100	N/A	99	N/A	5800022

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference.

Maxxam ID		DH0623	DH0722	DH0723	DH0724		
Sampling Date		2012/04/26	2012/04/26	2012/04/27	2012/04/27		
		18:30	18:45	08:30	08:45		
COC Number		S005955	S005955	S005955	S005955		
	Units	BH-23-2.9-3.2	BH-23-4.7-5.0	BH-27-1.7-2.0	BH-27-2.3-2.6	RDL	QC Batch
Volatiles							
1,2-dibromoethane	mg/kg	<0.0020	<0.0020	0.0402	<0.0020	0.0020	5800022
1,2-dichloroethane	mg/kg	0.121	<0.0020	<0.0020	<0.0020	0.0020	5800022
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	102	101	98	105	N/A	5800022
D10-ETHYLBENZENE (sur.)	%	122	122	116	125	N/A	5800022
D4-1,2-DICHLOROETHANE (sur.)	%	97	96	95	95	N/A	5800022
D8-TOLUENE (sur.)	%	97	98	99	99	N/A	5800022



Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA

Sampler Initials: GC

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		DH0725		DH0726	DH0748		
Sampling Date		2012/04/27		2012/04/27	2012/04/27		
		08:00		09:15	09:30		
COC Number		\$005955		S005955	\$005955		
	Units	BH-28-0.5-0.8	RDL	BH-2.8-2.3-2.6	BH-29-1.1-1.4	RDL	QC Batch
Volatiles						T	
1,2-dibromoethane	mg/kg	<0.020 (1)	0.020	<0.0020	<0.0020	0,0020	5800022
1,2-dichloroethane	mg/kg	<0.0020	0.0020	<0.0020	<0.0020	0.0020	5800022
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	103	N/A	106	107	N/A	5800022
D10-ETHYLBENZENE (sur.)	%	114	N/A	126	117	N/A	5800022
D4-1,2-DICHLOROETHANE (sur.)	%	101	N/A	97	97	N/A	5800022
D8-TOLUENE (sur.)	%	100	N/A	99	98	N/A	5800022

N/A = Not Applicable RDL = Reportable Detection Limit

(1) Detection limits raised due to matrix interference.

1,2-dibromoethane	mg/kg	<0.0020	0.0020	5800022
Volatiles				
	Units	BH-29-2.3-2.6	RDL	QC Batch
COC Number		S005955		
		10:00		
Sampling Date		2012/04/27		
Maxxam ID		DH0752		

mg/kg	<0.0020	0,0020	5800022
mg/kg	<0.0020	0.0020	5800022
%	102	N/A	5800022
%	125	N/A	5800022
%	98	N/A	5800022
%	99	N/A	5800022
	mg/kg % %	mg/kg <0.0020 % 102 % 125 % 98	mg/kg <0.0020 0.0020 % 102 N/A % 125 N/A % 98 N/A



Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA

Sampler Initials: GC

Package 1 1.0°C

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

General Comments

Results relate only to the Items tested.



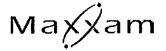
Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA

Quality Assurance Report Maxxam Job Number: EB234555

QA/QC			Date				
Batch			Analyzed		_		
Num Init	QC Type	Parameter CALLED A CENTER ()	yyyy/mm/dd	Value	Recovery	Units	QC Limits
5799336 YC1	Matrix Spike	D10-ANTHRACENE (sur.)	2012/04/30		74	%	50 - 130
		D12-BENZO(A)PYRENE (sur.)	2012/04/30		46 (1)	%	50 - 130
		D8-ACENAPHTHYLENE (sur.)	2012/04/30		77	%	50 - 130
		TERPHENYL-D14 (sur.)	2012/04/30		88	%	50 - 130
	6 " 1 B) 1	Naphthalene	2012/04/30		91	%	50 - 130
	Spiked Blank	D10-ANTHRACENE (sur.)	2012/04/30		90	%	50 - 130
		D12-BENZO(A)PYRENE (sur.)	2012/04/30		99	%	50 - 130
		D8-ACENAPHTHYLENE (sur.)	2012/04/30		94	%	50 - 130
		TERPHENYL-D14 (sur.)	2012/04/30		91	%	50 - 130
		Benzo(a)pyrene	2012/04/30		91	%	50 - 130
		Naphthalene	2012/04/30		90	%	50 - 130
	Method Blank	D10-ANTHRACENE (sur.)	2012/04/30		92	%	50 - 130
		D12-BENZO(A)PYRENE (sur.)	2012/04/30		99	%	50 - 130
		D8-ACENAPHTHYLENE (sur.)	2012/04/30		88	%	50 - 130
		TERPHENYL-D14 (sur.)	2012/04/30		97	%	50 - 130
		Benzo(a)pyrene	2012/04/30	<0.0050		mg/kg	
		Naphthalene	2012/04/30	<0.0050		mg/kg	
	RPD	Benzo(a)pyrene	2012/04/30	NC		%	50
		Naphthalene	2012/04/30	19.9		%	50
5799442 KH7	Method Blank	Moisture	2012/04/29	<0.30		%	
	RPD [DH0752-01]	Moisture	2012/04/29	0.3		%	20
5799766 AK8	Matrix Spike	O-TERPHENYL (sur.)	2012/05/03		107	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/05/03		77	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2012/05/03		81	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2012/05/03		86	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/05/03		99	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/05/03		81	%	70 - 130
		F3 (C16-C34 Hydrocarbons)	2012/05/03		89	%	70 - 130
		F4 (C34-C50 Hydrocarbons)	2012/05/03		96	%	70 - 130
	Method Blank	O-TERPHENYL (sur.)	2012/05/03		116	%	50 - 136
		F2 (C10-C16 Hydrocarbons)	2012/05/03	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2012/05/03	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2012/05/03	<10		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2012/05/03	NC		%	50
		F3 (C16-C34 Hydrocarbons)	2012/05/03	11.6		%	50
		F4 (C34-C50 Hydrocarbons)	2012/05/03	NC		%	50
5800005 JCC	Matrix Spike	,					
	IDH0622-011	1,4-Difluorobenzene (sur.)	2012/04/30		106	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2012/04/30		101	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2012/04/30		126	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/04/30		103	%	60 - 140
		Benzene	2012/04/30		97	%	60 - 140
		Toluene	2012/04/30		105	%	60 - 140
		Ethylbenzene	2012/04/30		NC (2)	%	60 - 140
		m & p-Xylene	2012/04/30		NC (3)	%	60 - 140
		o-Xylene	2012/04/30		NC (4)	%	60 - 140
		(C6-C10)	2012/04/30		96	%	60 - 140
	Spiked Blank	1,4-Difluorobenzene (sur.)	2012/05/04		94	%	60 - 140
	Shuss signi	4-BROMOFLUOROBENZENE (sur.)	2012/05/04		101	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2012/05/04		126	%	60 - 13
		D4-1,2-DICHLOROETHANE (sur.)	2012/05/04		93	%	60 - 14
		Benzene	2012/05/04		95 95	%	60 - 14
		Toluene	2012/05/04		100	%	60 - 140
					97	% %	60 - 14
		Ethylbenzene m & p-Xylene	2012/05/04 2012/05/04		98	% %	60 - 140



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA

Quality Assurance Report (Continued)

Maxxam Job Number: EB234555

QA/QC			Date				
Batch			Analyzed	Makes	D	Unito	OC Limit
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	Units	QC Limit
800005 JCC	Spiked Blank	o-Xylene	2012/05/04		94	%	60 - 14
		(C6-C10)	2012/05/04		107	%	60 - 14
	Method Blank	1,4-Difluorobenzene (sur.)	2012/04/30		87	%	60 - 14
		4-BROMOFLUOROBENZENE (sur.)	2012/04/30		103	%	60 - 14
		D10-ETHYLBENZENE (sur.)	2012/04/30		101	%	60 - 13
		D4-1,2-DICHLOROETHANE (sur.)	2012/04/30		147 (1)	%	60 - 14
		Benzene	2012/04/30	<0.0050		mg/kg	
		Toluene	2012/04/30	<0.020		mg/kg	
		Ethylbenzene	2012/04/30	<0.010		mg/kg	
		Xylenes (Total)	2012/04/30	<0.040		mg/kg	
		m & p-Xylene	2012/04/30	<0.040		mg/kg	
		o-Xylene	2012/04/30	<0.020		mg/kg	
		F1 (C6-C10) - BTEX	2012/04/30	<12		mg/kg	
		(C6-C10)	2012/04/30	<12		mg/kg	
	RPD [DH0621-01]	Benzene	2012/05/01	12.5		%	5
	[Toluene	2012/05/01	34.3		%	ŧ
		Ethylbenzene	2012/05/01	57.5 (5)		%	
		Xylenes (Total)	2012/05/01	57.8 (5)		%	
		m & p-Xylene	2012/05/01	57.6 (5)		%	ļ
		o-Xylene	2012/05/01	58.3 (5)		%	
		F1 (C6-C10) - BTEX	2012/05/01	81.4 (5)		%	
		(C6-C10)	2012/05/01	76.9 (5)		%	
800022 PS7	Matrix Spike	(00-010)	2012/00/01	10.0 (0)		70	
300022 F31	[DH0622-01]	4-BROMOFLUOROBENZENE (sur.)	2012/04/30		98	%	60 - 1
	[DH0022-01]	D10-ETHYLBENZENE (sur.)	2012/04/30		109	%	30 - 1
			2012/04/30		106	%	60 - 1
		D4-1,2-DICHLOROETHANE (sur.)			100	%	60 - 1
		D8-TOLUENE (sur.)	2012/04/30		120	%	60 - 1
		1,2-dibromoethane	2012/04/30			%	60 - 1
		1,2-dichloroethane	2012/04/30		128		
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/04/30		95	%	60 - 1
		D10-ETHYLBENZENE (sur.)	2012/04/30		103	%	30 - 1
		D4-1,2-DICHLOROETHANE (sur.)	2012/04/30		106	%	60 - 1
		D8-TOLUENE (sur.)	2012/04/30		99	%	60 - 1
		1,2-dibromoethane	2012/04/30		111	%	60 - 1
		1,2-dichloroethane	2012/04/30		123	%	60 - 1
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/04/30		106	%	60 - 1
		D10-ETHYLBENZENE (sur.)	2012/04/30		109	%	30 - 1
		D4-1,2-DICHLOROETHANE (sur.)	2012/04/30		97	%	60 - 1
		D8-TOLUENE (sur.)	2012/04/30		98	%	60 - 1
		1,2-dibromoethane	2012/04/30	<0.0020		mg/kg	
		1,2-dichloroethane	2012/04/30	<0.0020		mg/kg	
	RPD [DH0621-01]	1,2-dibromoethane	2012/04/30	NC (6)		%	
		1,2-dichloroethane	2012/04/30	NC		%	
801629 HM3	Matrix Spike	Total Lead (Pb)	2012/04/30		82	%	75 - 1
00 (020 (11110	QC Standard	Total Lead (Pb)	2012/04/30		100	%	54 - 1
	Spiked Blank	Total Lead (Pb)	2012/04/30		113	%	75 - 1
	Method Blank	Total Lead (Pb)	2012/04/30	<1.0		mg/kg	
	RPD	Total Lead (Pb)	2012/04/30	NC		%	
802356 SG8	Matrix Spike	Total Arsenic (As)	2012/05/01	1.40	95	%	75 - 1
JUZJUU JUO	mann Ohive	Total Barium (Ba)	2012/05/01		NC	%	75 - 1
		Total Chromium (Cr)	2012/05/01		NC	%	75 - 1
					92	%	75 - 1
		Total Copper (Cu)	2012/05/01				
		Total Lead (Pb)	2012/05/01		100 NC	%	75 - 1
		Total Zinc (Zn)	2012/05/01		NC	%	75 - 1
	QC Standard	Total Arsenic (As)	2012/05/01		114	%	50 - 1



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNES ROAD, WINNIPEG, MANITOBA

Quality Assurance Report (Continued)

Maxxam Job Number: EB234555

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	Units	QC Limits
5802356 SG8 QC	QC Standard	Total Barium (Ba)	2012/05/01		111	%	69 - 131
		Total Chromium (Cr)	2012/05/01		110	%	41 - 159
		Total Copper (Cu)	2012/05/01		104	%	72 - 127
		Total Lead (Pb)	2012/05/01		102	%	54 - 146
		Total Zinc (Zn)	2012/05/01		104	%	72 - 128
	Spiked Blank	Total Arsenic (As)	2012/05/01		95	%	75 - 125
		Total Barium (Ba)	2012/05/01		91	%	75 - 125
		Total Chromium (Cr)	2012/05/01		93	%	75 - 125
		Total Copper (Cu)	2012/05/01		94	%	75 - 125
		Total Lead (Pb)	2012/05/01		114	%	75 - 125
		Total Zinc (Zn)	2012/05/01		94	%	75 - 125
Method Blank		Total Arsenic (As)	2012/05/01	<1.0		mg/kg	
		Total Barium (Ba)	2012/05/01	<10		mg/kg	
		Total Chromium (Cr)	2012/05/01	<1.0		mg/kg	
		Total Copper (Cu)	2012/05/01	<5.0		mg/kg	
		Total Lead (Pb)	2012/05/01	<1.0		mg/kg	
		Total Zinc (Zn)	2012/05/01	<10		mg/kg	
	RPD	Total Arsenic (As)	2012/05/01	0.3		%	35
		Total Barium (Ba)	2012/05/01	0.8		%	35
		Total Chromium (Cr)	2012/05/01	3.9		%	35
		Total Copper (Cu)	2012/05/01	NC		%	35
		Total Lead (Pb)	2012/05/01	1,9		%	35
		Total Zinc (Zn)	2012/05/01	1.1		%	35
5806519 JW0 Matrix Spike		Extractable (Water) Methyl Sulfone (sur.)	2012/05/03		65	%	50 - 130
0000010 0110	mann opmo	Extractable (Water) Ethylene Glycol	2012/05/03		95	%	30 - 130
		Extractable (Water) Propylene Glycol	2012/05/03		72	%	30 - 130
	Spiked Blank	Extractable (Water) Methyl Sulfone (sur.)	2012/05/03		83	%	50 - 130
	Opinou Biann	Extractable (Water) Ethylene Glycol	2012/05/03		92	%	30 - 130
		Extractable (Water) Propylene Glycol	2012/05/03		75	%	30 - 130
	Method Blank	Extractable (Water) Methyl Sulfone (sur.)	2012/05/03		80	%	50 - 130
	(4,00100 Didiff	Extractable (Water) Ethylene Glycol	2012/05/03	<10	30	mg/kg	
		Extractable (Water) Propylene Glycol	2012/05/03	<10		mg/kg	
	RPD	Extractable (Water) Ethylene Glycol	2012/05/03	NC		%	50
	10 0	Extractable (112(c)) Ethylene Clycol	LQ 12,00,00	110			

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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.
- (2) Matrix Spike below acceptance limits for Ethylbenzene, due to matrix interference. Reanalysis yields similar results.
- (3) Matrix Spike below acceptance limits for map xylene, due to matrix interference. Reanalysis yields similar results.
- (4) Matrix Spike below acceptance limits for ortho-xylene, due to matrix interference. Reanalysis yields similar results.
- (5) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
- (6) Detection limits raised due to matrix interference.

Maxxam Analytics International Corporation o/a Maxxam Analytics Edmonton: 9331 - 48th Street T6B 2R4 Telephone(780)577-7100 Fax(780)450-4187



Validation Signature Page

Maxxam Job #: B234555
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).
Carol Gebhart, Senior Analyst
Daniel Reslan, Volatiles Supervisor
Kristopher-Beaudet, B.Sc., P.Chem, Scientific Specialist
Karla Offord, Senior Analyst, Organics Department
LSM

Luba Shymushovska, Senior Analyst, Organic Department



Validation Signature Page

Maxxam Job #: B234555										
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).										
Pui Hang Tam, Senior Analyst										
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.										

TOIL THE SECTION SECTION OF CUSTODY TO THE PRINCE OF SUNCOR ENERGY

\$005955

Odgary: 4009 19st St. NE, TZE 6P8, Ph. (400) 291-3077, Fax: (403) 735-2240, II	Edmonton: 9301 - 49 Street, 165 JR4. Ph. (760) 577-7100, Fax: (780) 450-4167.
، ک	
CARGANY: 4000 19st St. NE, TZE 6P8, Ptr. (400) 251	Edmonton: 9331 - 49 Szeet, 165 #RA, Phr (780) 53

Page: { of {	ABGOLATIONY GOIDELINES:	CCME LOW		9	ENERGY /		Other Analysis DOWNSTREAM 📉 3	· · · · · · · · · · · · · · · · · · ·	21140	ا ا	202 202 202 202 202 202 202 202 202 202	z/10/2	y See	(A) (A) (A) (A) (A) (A) (A) (A) (A) (A)	15. (6. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15	0 5/1 0 5/1	XX Other:		XX UPSTREAM		X	XX AFE#:	X X	XXX Senior Suncor Advisor:	Milke Morden Ben Parsons		Russell Browne	XXX Hussell Browne	X X X A D Hussell Browne	X X X Browne	Russell Browne	Russell Browne Other: LAB USE ONLY LAB USE ONLY Maxxam Job #	Russell Browne	Russell Browne	Russell Browne Phil Scalia Other: LAB USE ONLY LAB USE ONLY LAB USE O	Russell Browne Dhil Scalia Other: LAB USE ONLY LAB USE O	Russell Browne
Dance Olevhudes (E. Matti.	actom Distribution (E-mail):						SOIL WATER	/8JB	(1) - - - - - - - - - - - - -	TA/	ME,	00) 8□ F□ 998	alate S Teler	s mic ed Me f F1 F1 F1.F Men Men	L)	off (3) IssoT ossi(0 ossi(0		Jenzas Sans Start	(36) 830 X		1) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	13,04,27 ogss X	12004,03 V8:04 X	(12/c4/270434X	,	4/27 tows \\	33	33	1 33	(2.7 tox). (2.4.30):	47 (9%)	(MM/DD): Time (24:00): NMM/DD): Time (24:00): Ra	(27 t0xs	(3-7 1930)	(3-7 1930)	(3-7 1300)
MANA, MANA, MANA, MANA, COL	Sonsulting O'Connor Associates Environmental In	V / 0	Place, Winnips	PION: Manitaba PC: R	Sontact #5: Pr. 204 - 489 - 2964 Car. N/A	Project ID: 10 - 1177, 100	Sampled By: Gorchon Chambellain			2 DAY	SERVICE CAT CAT	Date	M REGULAR (5 Days)		il samples are total for 60 calendar days after sample receipt, univos specified elifernise.	Sample ID Curity Soil Soil		33	3 BH-23-2.9-3.2 m Seil Bourse	5-4.7-5.0 m Soil	7-1.7-2.0 m So.1	1.05	8-0.5-0.8 na Soil	2,3-2,6 m Soil	-29-11-1.4 m Soil	10 BH-29-2.3-2.6 m Soil 12/04,	_	11	12	11 12 Please indicate Filtered, Preserved or Both (F. P, F/P)	Please indicate Filtered, Preserved or Both (F. P, F.	red, Preserved or Both (F. P., F.	red, Preserved or Both (F. P, F.	red, Preserved or Both (F. P., F.	red, Preserved or Both (F. P. F.	red, Preserved or Both (F. P, F.	red, Preserved or Both (F. P. F.

<u>2</u>

Maxxam Analytics International Corporation of a Maxxam Analytics

AB FCD-00218 Rewt 2010/05



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

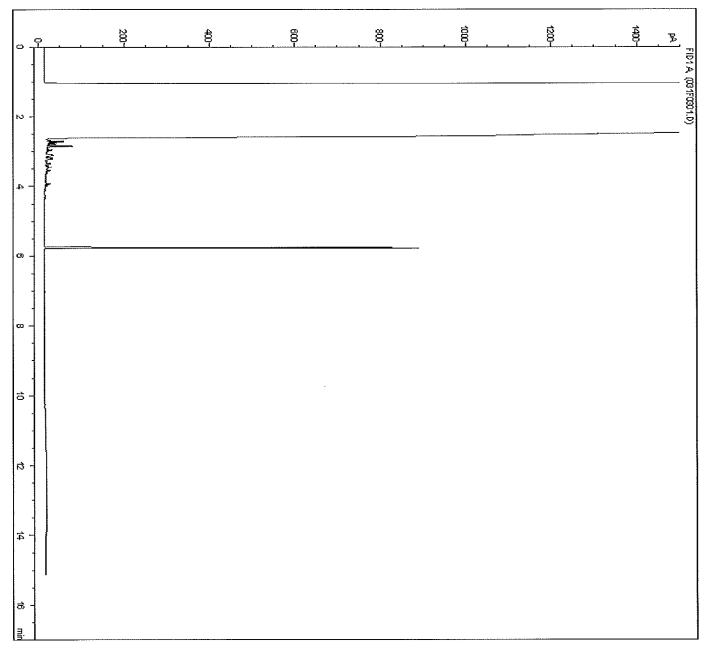
Site Reference: 208 ST. ANNES ROAD, WINNIPEG,

Client ID: BH-23-2.3-2.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\031F0301.D

Sample Name: DH0621



*** End of Report ***

Instrument 1 2012/05/04 11:44:58 AM AK8

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O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

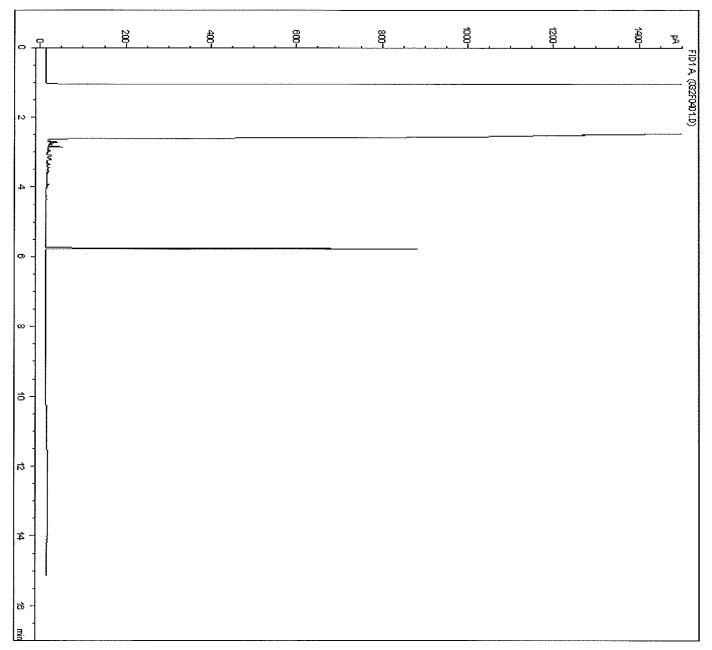
Site Reference: 208 ST. ANNES ROAD, WINNIPEG,

Client ID: DUP-23

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\032F0401.D

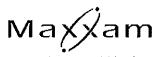
Sample Name: DH0622



*** End of Report ***

Instrument 1 2012/05/04 11:45:00 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

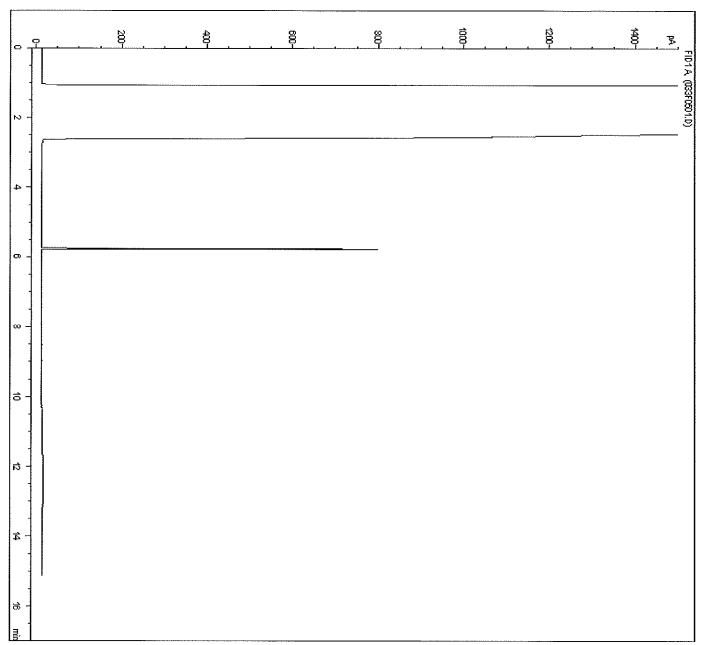
Site Reference: 208 ST. ANNES ROAD, WINNIPEG,

Client ID: BH-23-2.9-3.2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\033F0501.D

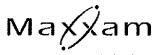
Sample Name: DH0623



*** End of Report ***

Instrument 1 2012/05/04 11:45:03 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

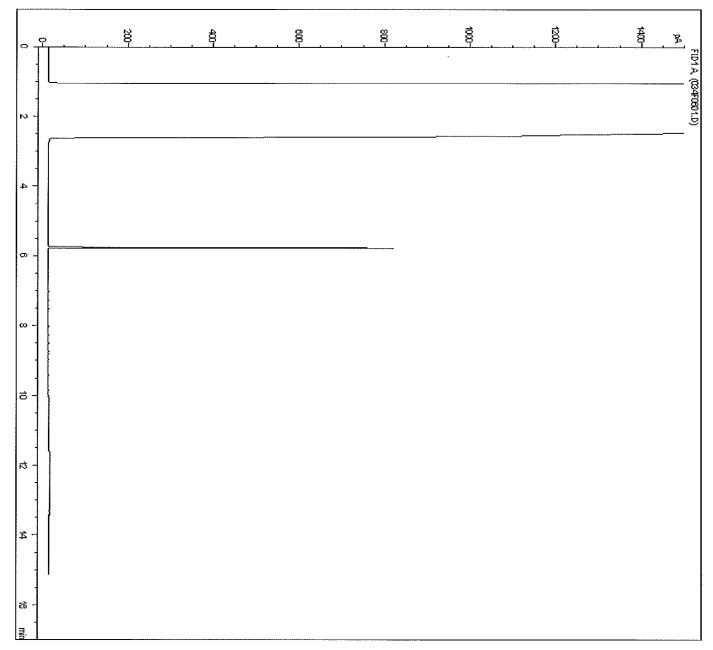
Site Reference: 208 ST. ANNES ROAD, WINNIPEG,

Client ID: BH-23-4.7-5.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\034F0601,D

Sample Name: DH0722



*** End of Report ***

Instrument 1 2012/05/04 11:45:05 AM AK8

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O'CONNOR ASSOCIATES ENVIRONMENTAL

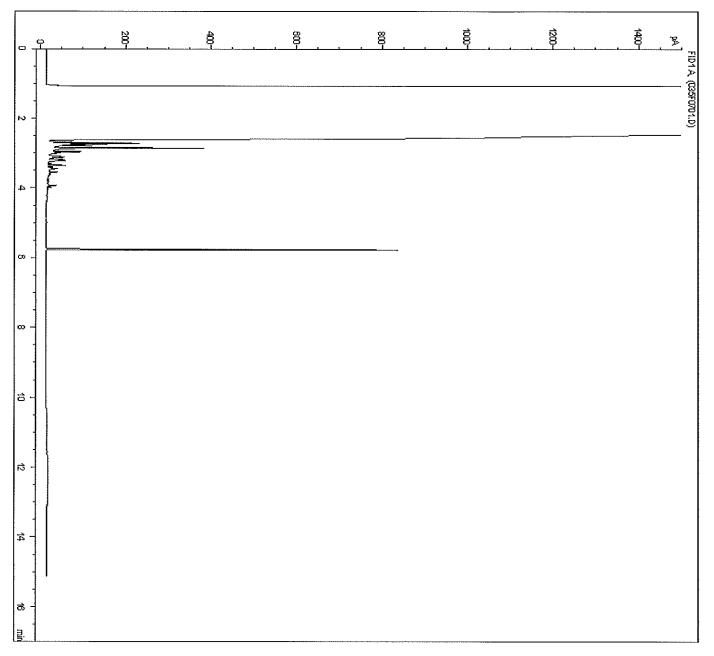
Client Project #: 10-1177.100

Site Reference: 208 ST. ANNES ROAD, WINNIPEG,

Client ID: BH-27-1.7-2.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

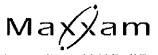
Data File C:\CHEM32\1\DATA\GMA0503A\GMA0503A 2012-05-03 15-33-35\035F0701.D Sample Name: DH0723



*** End of Report ***

Instrument 1 2012/05/04 11:45:07 AM AK8

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O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

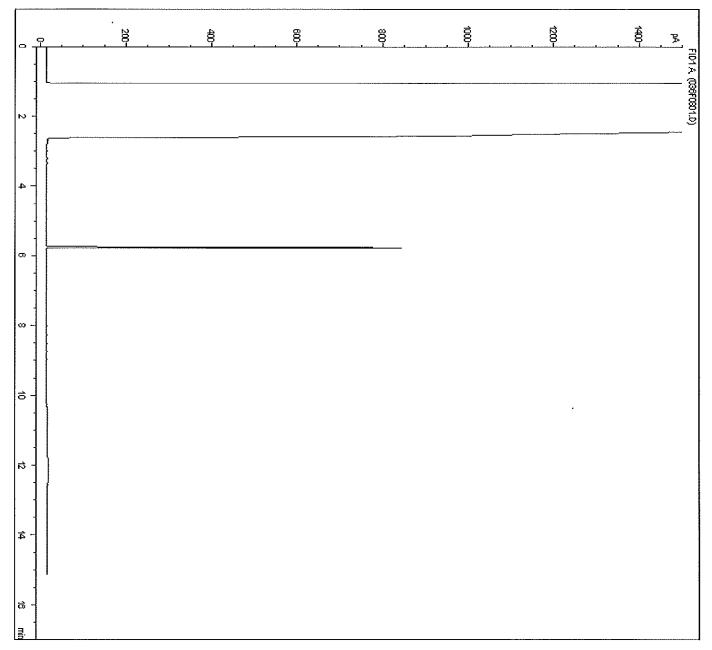
Site Reference: 208 ST. ANNES ROAD, WINNIPEG,

Client ID: BH-27-2.3-2.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\036F0801.D

Sample Name: DH0724



*** End of Report ***

Instrument 1 2012/05/04 11:45:09 AM AK8

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O'CONNOR ASSOCIATES ENVIRONMENTAL

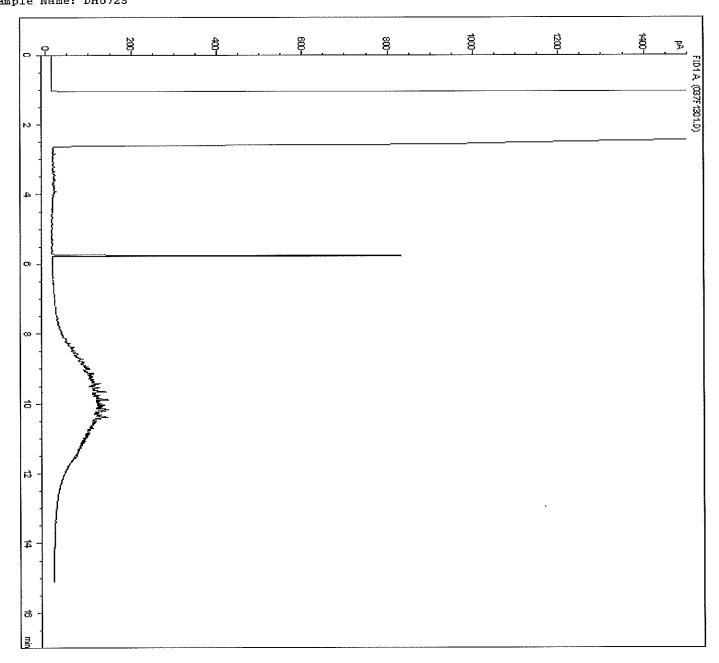
Client Project #: 10-1177.100

Site Reference: 208 ST. ANNES ROAD, WINNIPEG,

Client ID: BH-28-0.5-0.8

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\037F1301.D Sample Name: DH0725



*** End of Report ***

Instrument 1 2012/05/04 11:45:20 AM AK8

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O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

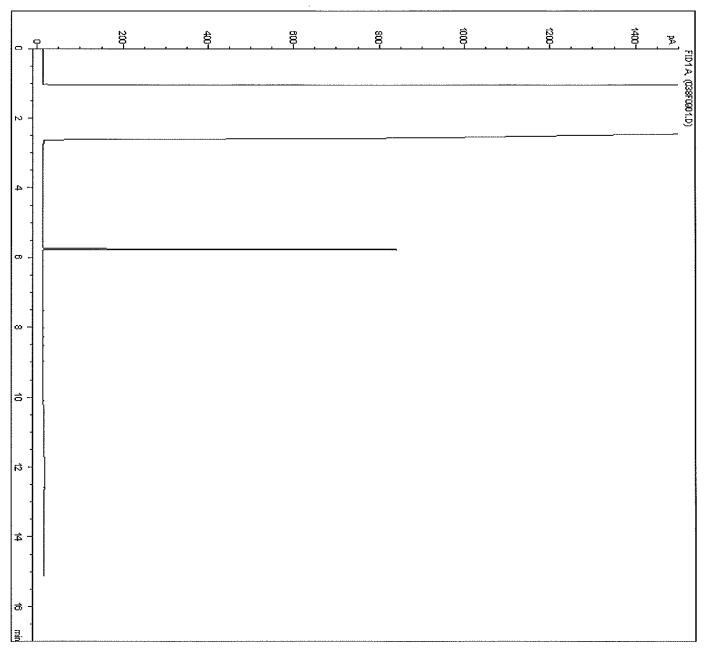
Site Reference: 208 ST. ANNES ROAD, WINNIPEG,

Client ID: BH-2.8-2.3-2.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\038F0901.D

Sample Name: DH0726



*** End of Report ***

Instrument 1 2012/05/04 11:45:11 AM AK8

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O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

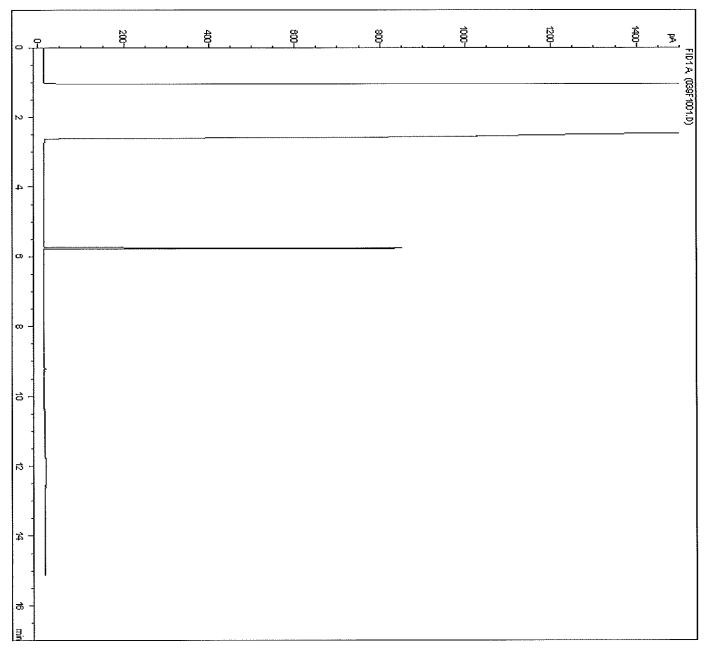
Site Reference: 208 ST. ANNES ROAD, WINNIPEG,

Client ID: BH-29-1.1-1.4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\039F1001.D

Sample Name: DH0748



*** End of Report ***

Instrument 1 2012/05/04 11:45:13 AM AK8

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O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

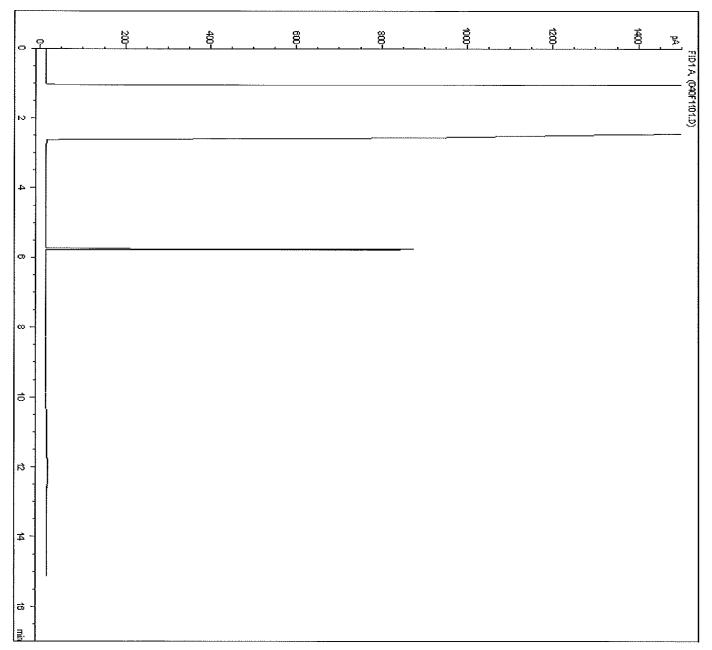
Site Reference: 208 ST. ANNES ROAD, WINNIPEG,

Client ID: BH-29-2.3-2.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\040F1101.D

Sample Name: DH0752



*** End of Report ***

Instrument 1 2012/05/04 11:45:16 AM AK8

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons.				Sampling Date: 2	2012/04/26 and 2012/04/27
Location: 208 St. Anne	's Road, Winnip	eg, MB		Laboratory : 1	Maxxam Analytics Inc.
Consultant Project Number: 1	0-1177.100			Sample Subn	nission Number: <u>B234555</u>
Are All Laboratory QC Samples W	ithin Acceptanc	e Criteria	(Yes, No,	Not Applicable)?	
	Yes	No	NA	TI I II II II.	Comments PD is below the control limit.
Instrument Surrogate Recovery Extraction Surrogate Recovery Method Blank Concentration Matrix Duplicate RPD Matrix Spike Recovery Lab Control Sample Recovery	X X	X X	X X		ery is below the control limit.
Are All Field QC Samples Within	Alert Limits (Ye	es, No, No	t Applicat	ole)?	
-	Yes	No	NA	I 	Comments
Field Blank Concentration Trip Blank Concentration Field Duplicate RPD		X	X X	The field duplicate RP	D is beyond the acceptable limits.
Has CoA been signed off (Yes/No) Has lab warranted all tests were in Has lab warranted all tests were an Were all samples analyzed within I All volatiles samples methanol ext Is Chain of Custody completed and Were sample temperatures accepta	statistical contralyzed followin hold times (Yes, racted, if required signed (Yes/N	g SOP's in /No)?: ed, within o)?:	CoA (Ye	s, No or N/A)?: (Yes, No or N/A)?:	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
Was a Data Quality Waiver (DQW	') issued (Yes, N	No or N/A)	?:		No
Date Issued:			-	Date of Response:	
Is data considered to be reliable (Y If answer is "No", describe and pro				Yes	
Data Reviewed by (Print): Review Date: Revision Date (if applicable):	2013/02/21	1000	-		ed by (Signature):



Your Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Your C.O.C. #: S005952, S005953

Attention: Adam Wickman
O'CONNOR ASSOCIATES ENVIRONMENTAL
7 TERRACON PLACE
WINNIPEG, MB
CANADA R2J 4B3

Report Date: 2012/05/07

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B234556 Received: 2012/04/28, 11:57

Sample Matrix: Soil # Samples Received: 20

		Date	Date	
Analyses	Quantity	Extracted	Analyzed Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	20	2012/04/28	2012/04/30 AB SOP-00039	CCME, EPA 8260C
CCME Hydrocarbons (F2-F4 in soil)	19	2012/04/28	2012/05/03 AB SOP-00040	CCME PHC-CWS
			AB SOP-00036	
CCME Hydrocarbons (F2-F4 in soll)	1	2012/05/04	2012/05/04 AB SOP-00040	CCME PHC-CWS
			AB SOP-00036	
Glycol in Soil by GC/FID (1)	2	2012/05/01	2012/05/04 CAL SOP-00093	EPA 8015 D
Elements by ICPMS - Solls	1	2012/05/01	2012/05/01 AB SOP-00043	EPA 200.8
Elements by ICPMS - Solls	1	2012/05/01	2012/05/07 AB SOP-00043	EPA 200.8
Moisture	20	N/A	2012/04/29 EENVSOP-00139	Carter SSMA 51.2
Benzo[a]pyrene Equivalency	2	N/A	2012/05/02 AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons in soll	2	2012/04/28	2012/05/01 AB SOP-00003	EPA 3540C/8270D
			AB SOP-00036	
Lead	16	2012/05/01	2012/05/03 AB SOP-00043	EPA 200.8
Lead	2	2012/05/01	2012/05/04 AB SOP-00043	EPA 200.8
Low Level VOC in Soil	20	2012/04/28	2012/04/30 EENVSOP-00021	EPA SW846, 8260C

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

(1) This test was performed by Maxxam Calgary Environmental

Encryption Key

کایدی Desirae Hopkinsor

07 May 2012 16:56:24 -06:00

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

Desirae Hopkinson, Project Manager Email: DHopkinson@maxxam.ca

Phone# (780) 577-7104

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section



Your Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Your C.O.C. #: S005952, S005953

Attention: Adam Wickman O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2012/05/07

CERTIFICATE OF ANALYSIS -2-

5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Client Project #: 10-1177.100 Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA Sampler Initials: GC

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		DH0728	DH0728	DH0729	T	
Sampling Date		2012/04/26	2012/04/26	2012/04/26		
2001		09:00	09:00	09:15		
COC Number	Units	\$005952 BH-19-1,1-1,4	S005952 BH-19-1.1-1.4	S005952 BH-19-4.1-4.4	RDL	QC Batch
	Office	L311-13-1, (-1,4	Lab-Dup	D) -10-4.1-4.4	I NOL	GO Daton
Physical Properties						
Molsture	%	4.1	4.8	33	0.30	5799443
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	N/A	<10	10	5799758
F3 (C16-C34 Hydrocarbons)	mg/kg	78	N/A	73	10	5799758
F4 (C34-C50 Hydrocarbons)	mg/kg	110	N/A	46	10	5799758
Reached Baseline at C50	mg/kg	Yes	N/A	Yes	N/A	5799758
Volatiles						
Benzene	mg/kg	<0.0050	<0.0050	0.047	0.0050	5799989
Toluene	mg/kg	<0.020	<0.020	<0.020	0.020	5799989
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	0.010	5799989
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	0.040	5799989
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	0.040	5799989
o-Xylene	mg/kg	<0.020	<0.020	<0.020	0.020	5799989
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	12	5799989
(C6-C10)	mg/kg	<12	<12	<12	12	5799989
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	104	103	119	N/A	5799989
4-BROMOFLUOROBENZENE (sur.)	%	99	98	97	N/A	5799989
D10-ETHYLBENZENE (sur.)	%	112	109	113	N/A	5799989
D4-1,2-DICHLOROETHANE (sur.)	%	98	99	98	N/A	5799989
O-TERPHENYL (sur.)	%	113	N/A	117	N/A	5799758



Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA Sampler Initials: GC

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		DH0730	DH0730		DH0731		
Sampling Date		2012/04/26	2012/04/26		2012/04/26		
		10:15	10:15		10:30		
COC Number	Units	S005952 BH-20-2.3-2.6	S005952 BH-20-2.3-2.6	RDL	\$005952 BH-20-3.5-3.8	RDL	QC Batch
	Olinta	B()-20-2.3-2.0	Lab-Dup	1.02	B11-20 0,0 0.0		
Physical Properties]	
Moisture	%	19	N/A	0.30	34	0.30	5799443
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	170	230	10	<10	10	5799758
F3 (C16-C34 Hydrocarbons)	mg/kg	19	20	10	46	10	5799758
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	10	19	10	5799758
Reached Baseline at C50	mg/kg	Yes	Yes	N/A	Yes	N/A	5799758
Volatiles							
Benzene	mg/kg	<0.060 (1)	N/A	0.060	<0.0050	0.0050	5799989
Toluene	mg/kg	0.11	N/A	0.020	<0.020	0.020	5799989
Ethylbenzene	mg/kg	11	N/A	0.010	<0.010	0.010	5799989
Xylenes (Total)	mg/kg	44	N/A	0.040	<0.040	0.040	5799989
m & p-Xylene	mg/kg	38	N/A	0.040	<0.040	0.040	5799989
o-Xylene	mg/kg	5.7	N/A	0.020	<0.020	0.020	5799989
F1 (C6-C10) - BTEX	mg/kg	860	N/A	12	<12	12	5799989
(C6-C10)	mg/kg	920	N/A	12	<12	12	5799989
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	115	N/A	N/A	118	N/A	5799989
4-BROMOFLUOROBENZENE (sur.)	%	111	N/A	N/A	99	N/A	5799989
D10-ETHYLBENZENE (sur.)	%	153 (2)	N/A	N/A	115	N/A	5799989
D4-1,2-DICHLOROETHANE (sur.)	%	100	N/A	N/A	100	N/A	5799989
O-TERPHENYL (sur.)	%	109	109	N/A	101	N/A	5799758

N/A = Not Applicable

RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference
(2) Surrogate recovery exceeds acceptance criteria (recovery outside 60-130%) due to matrix interference. Reanalysis yields similar results.



Client Project #: 10-1177.100
Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA
Sampler Initials: GC

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		DH0732	DH0733	DH0734	DH0735		
Sampling Date		2012/04/26	2012/04/26	2012/04/26	2012/04/26		
COC Number	┼	10:45 S005952	11:45 S005952	12:00 \$005952	13:00 \$005952	-	
COC Namber	Units	BH-20-4.7-5.0	BH-21-2.3-2.6	BH-21-3.5-3.8	BH-22-2.3-2.6	RDL	QC Batch
	1017110			, _,,_,	, -,,		AC PRIOR
Physical Properties							
Moisture	%	35	N/A	N/A	24	0.30	5799443
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	180	<10	40	10	5799758
F3 (C16-C34 Hydrocarbons)	mg/kg	20	67	73	<10	10	5799758
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	20	34	<10	10	5799758
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	5799758
Volatiles							
Benzene	mg/kg	<0.0050	0.019	<0.0050	3.6	0,0050	5799989
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	5799989
Ethylbenzene	mg/kg	<0.010	0.32	<0.010	7.0	0.010	5799989
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	8.5	0.040	5799989
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	8.5	0.040	5799989
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	5799989
F1 (C6-C10) - BTEX	mg/kg	<12	47	<12	130	12	5799989
(C6-C10)	mg/kg	<12	48	<12	150	12	5799989
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	119	118	121	110	N/A	5799989
4-BROMOFLUOROBENZENE (sur.)	%	98	101	101	102	N/A	5799989
D10-ETHYLBENZENE (sur.)	%	113	122	120	121	N/A	5799989
D4-1,2-DICHLOROETHANE (sur.)	%	97	98	99	99	N/A	5799989
O-TERPHENYL (sur.)	%	86	115	124	109	N/A	5799758



Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Sampler initials: GC

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		DH0736	DH0737	DH0738	DH0739	<u> </u>	
Sampling Date		2012/04/26	2012/04/26	2012/04/26	2012/04/26		
		13:00	13:15	13:30	14:30	<u> </u>	
COC Number	Units	S005952	S005952	S005952	\$005953	DOL	00 0-4-6
	Units	DUP-22	BH-22-3.5-3.8	BH-22-4.7-5.0	BH-24-2.3-2.6	RDL	QC Batch
Physical Properties							
Moisture	%	33	35	36	19	0.30	5799443
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	86	<10	<10	130	10	5799758
F3 (C16-C34 Hydrocarbons)	mg/kg	11	62	200	29	10	5799758
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	31	100	<10	10	5799758
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	5799758
Volatiles							
Benzene	mg/kg	4.0	<0.0050	<0.0050	7.0	0.0050	5799989
Toluene	mg/kg	<0.020	<0.020	<0.020	20	0.020	5799989
Ethylbenzene	mg/kg	8.2	<0.010	<0.010	8.4	0.010	5799989
Xylenes (Total)	mg/kg	10	<0.040	<0.040	44	0.040	5799989
m & p-Xylene	mg/kg	10	<0.040	<0.040	30	0.040	5799989
o-Xylene	mg/kg	<0.020	<0.020	<0.020	14	0.020	5799989
F1 (C6-C10) - BTEX	mg/kg	140	<12	<12	110	12	5799989
(C6-C10)	mg/kg	160	<12	<12	190	12	5799989
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	114	118	119	107	N/A	5799989
4-BROMOFLUOROBENZENE (sur.)	%	102	100	100	105	N/A	5799989
D10-ETHYLBENZENE (sur.)	%	126	114	113	118	N/A	5799989
D4-1,2-DICHLOROETHANE (sur.)	%	98	99	97	99	N/A	5799989
O-TERPHENYL (sur.)	%	111	96	104	96	N/A	5799758



Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA Sampler Initials: GC

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		DH0740	DH0741	DH0742	DH0743		L
Sampling Date		2012/04/26	2012/04/26	2012/04/26	2012/04/26		
COC Number	ļ	14:45	15:00 S005953	16:00 S005953	16:00		
COC Number	Units	S005953 BH-24-3.5-3.8	BH-24-4.7-5.0	BH-25-1.7-2.0	S005953 DUP-25	RDL	QC Batch
	1						
Physical Properties	ļ						
Moisture	%	33	33	24	23	0.30	5799443
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	170	89	10	5799758
F3 (C16-C34 Hydrocarbons)	mg/kg	74	41	16	13	10	5799758
F4 (C34-C50 Hydrocarbons)	mg/kg	41	27	<10	<10	10	5799758
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	5799758
Volatiles							
Benzene	mg/kg	0.031	<0.0050	0,62	1.8	0.0050	5799989
Toluene	mg/kg	0.071	<0.020	0.056	0.091	0.020	5799989
Ethylbenzene	mg/kg	<0.010	<0.010	2.9	4.2	0.010	5799989
Xylenes (Total)	mg/kg	<0.040	<0.040	3.9	5.5	0.040	5799989
m & p-Xylene	mg/kg	<0.040	<0.040	3.9	5.4	0.040	5799989
o-Xylene	mg/kg	<0.020	<0.020	0.061	0.087	0.020	5799989
F1 (C6-C10) - BTEX	mg/kg	<12	<12	140	170	12	5799989
(C6-C10)	mg/kg	<12	<12	150	180	12	5799989
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	117	117	113	112	N/A	5799989
4-BROMOFLUOROBENZENE (sur.)	%	100	100	101	102	N/A	5799989
D10-ETHYLBENZENE (sur.)	%	114	112	124	126	N/A	5799989
D4-1,2-DICHLOROETHANE (sur.)	%	100	100	101	101	N/A	5799989
O-TERPHENYL (sur.)	%	109	102	104	107	N/A	5799758



Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Sampler Initials: GC

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		DH0744	DH0745	DH0746	DH0747		
Sampling Date		2012/04/26	2012/04/26	2012/04/26	2012/04/26		
		16:15	16:30	17:30	17:45		
COC Number		S005953	S005953	S005953	S005953		00 0-4-5
	Units	BH-25-3.5-3.8	BH-25-4.7-5.0	BH-26-1.7-2.0	BH-26-2.3-2.6	RDL	QC Batch
Physical Properties						Τ	
Moisture	%	33	34	31	32	0.30	5799443
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	10	5799758
F3 (C16-C34 Hydrocarbons)	mg/kg	72	70	42	50	10	5799758
F4 (C34-C50 Hydrocarbons)	mg/kg	39	35	19	24	10	5799758
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	5799758
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5799989
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	5799989
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5799989
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	5799989
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	5799989
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	5799989
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	12	5799989
(C6-C10)	mg/kg	<12	<12	<12	<12	12	5799989
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	117	118	115	105	N/A	5799989
4-BROMOFLUOROBENZENE (sur.)	%	101	98	98	105	N/A	5799989
D10-ETHYLBENZENE (sur.)	%	113	114	110	92	N/A	5799989
D4-1,2-DICHLOROETHANE (sur.)	%	99	97	101	146 (1)	N/A	5799989
O-TERPHENYL (sur.)	%	105	93	103	107	N/A	5799758

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100
Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA
Sampler Initials: GC

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		DH0733	DH0734		
Sampling Date		2012/04/26	2012/04/26		
		11:45	12:00		
COC Number	i	S005952	S005952		
	Units	BH-21-2.3-2.6	BH-21-3.5-3.8	RDL	QC Batch

Physical Properties	5				
Moisture	%	30	36	0.30	5799443



Client Project #: 10-1177.100
Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA
Sampler Initials: GC

GLYCOLS BY GC-FID (SOIL)

Maxxam ID		DH0733	DH0734	
Sampling Date		2012/04/26	2012/04/26	
		11:45	12:00	
COC Number		S005952	S005952	
	Units	BH-21-2.3-2.6	BH-21-3.5-3.8	RDL QC Batch

Glycols					
Extractable (Water) Ethylene Glycol	mg/kg	<10	<10	10	5806519
Extractable (Water) Propylene Glycol	mg/kg	<10	<10	10	5806519
Surrogate Recovery (%)					
Extractable (Water) Methyl Sulfone (sur.)	%	55	51	N/A	5806519



Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Sampler Initials: GC

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		DH0733	I	DH0734		
Sampling Date		2012/04/26		2012/04/26		
		11:45		12:00		
COC Number		S005952		S005952		
	Units	BH-21-2.3-2.6	RDL	BH-21-3.5-3.8	RDL	QC Batch

mg/kg	<0.10	0.10	<0.10	0.10	5799368
mg/kg	<0.0050	0.0050	<0.0050	0.0050	5799336
mg/kg	<0.041 (1)	0.041	<0.0050	0.0050	5799336
%	82	N/A	83	N/A	5799336
%	92	N/A	92	N/A	5799336
%	78	N/A	85	N/A	5799336
%	87	N/A	93	N/A	5799336
	mg/kg mg/kg % %	mg/kg <0.0050 mg/kg <0.041 (1) % 82 % 92 % 78	mg/kg <0.0050 0.0050 mg/kg <0.041 (1) 0.041 % 82 N/A % 92 N/A % 78 N/A	mg/kg <0.0050 0.0050 <0.0050 mg/kg <0.041 (1)	mg/kg <0.0050 0.0050 <0.0050 0.0050 mg/kg <0.041 (1)

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference



Client Project #: 10-1177.100
Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA
Sampler Initials: GC

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		DH0728	DH0728	DH0729	DH0730	DH0731		
Sampling Date		2012/04/26	2012/04/26	2012/04/26	2012/04/26	2012/04/26		
, ,		09:00	09:00	09:15	10:15	10:30		
COC Number		S005952	S005952	S005952	S005952	S005952		
	Units	BH-19-1.1-1.4	BH-19-1.1-1.4 Lab-Dup	BH-19-4.1-4.4	BH-20-2.3-2.6	BH-20-3.5-3.8	RDL	QC Batch
Elements								

Maxxam ID		DH0732	DH0733		DH0734	DH0735		Ì
Sampling Date		2012/04/26	2012/04/26		2012/04/26	2012/04/26		
		10:45	11:45		12:00	13:00		
COC Number		\$005952	S005952		S005952	S005952		
	Units	BH-20-4.7-5.0	BH-21-2.3-2.6	QC Batch	BH-21-3.5-3.8	BH-22-2.3-2.6	RDL	QC Batch
	1					E		
Elements								
Total Arsenic (As)	mg/kg	N/A	11	5807874	13	N/A	1.0	5803936
Total Lead (Pb)	mg/kg	14	N/A	5803921	N/A	11	1.0	5803921
Total Barium (Ba)	mg/kg	N/A	260	5807874	210	N/A	10	5803936
Total Chromium (Cr)	mg/kg	N/A	60	5807874	49	N/A	1.0	5803936
Total Copper (Cu)	mg/kg	N/A	41	5807874	38	N/A	5.0	5803936
Total Lead (Pb)	mg/kg	N/A	17	5807874	15	N/A	1,0	5803936
Total Zinc (Zn)	mg/kg	N/A	100	5807874	98	N/A	10	5803936

Maxxam ID		DH0736	DH0737	DH0738	DH0739	DH0740		
Sampling Date		2012/04/26	2012/04/26	2012/04/26	2012/04/26	2012/04/26		
. •		13:00	13:15	13:30	14:30	14:45		
COC Number		S005952	S005952	S005952	S005953	S005953		
	Units	DUP-22	BH-22-3.5-3.8	BH-22-4.7-5.0	BH-24-2.3-2.6	BH-24-3.5-3.8	RDL	QC Batch
Elements								
ciellienre			1					



Client Project #: 10-1177.100 Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Sampler Initials: GC

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		DH0741	DH0742	DH0743	DH0744	DH0745		
Sampling Date		2012/04/26	2012/04/26	2012/04/26	2012/04/26	2012/04/26		1
• •		15:00	16:00	16:00	16:15	16:30		
COC Number		\$005953	S005953	S005953	S005953	S005953		
	5.1 14	DUDATES	DU 05 4 7 0 0	DUP-25	BH-25-3.5-3.8	BH-25-4.7-5.0	DDI	QC Batch
	Units	BH-24-4.7-5.0	BH-25-1.7-2.0	D0F-25	DH-20-0.0-0.0	BH-23-4.7-5.0	INDL	NO DAICH
	Units	BH-24-4.7-5.U	BH-25-1.7-2.0	DQF-23	Г БП-23-3,0-3,0	ВП-23-4.7-3.0	KDL	QC Batch
Elements Total Lead (Pb)	mg/kg	11	8,8	9.8	13	12	1.0	5803921

Maxxam ID		DH0746	DH0747		
Sampling Date		2012/04/26	2012/04/26		
, ,		17:30	17:45		
COC Number		S005953	S005953		
	11111	BH-26-1.7-2.0	BH-26-2.3-2.6	PNI	QC Batch
	Units	BD-20-1.7-2.0	B11-20-2.3-2.0	IVDL	QO Daton
Elemente	Units	Bn-20-1.7-2.0	B(1-20-2.3-2.0	T	T Daten
Elements Total Lead (Pb)	mg/kg	12	12	1.0	5803921



Client Project #: 10-1177.100 Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Sampler Initials: GC

VOLATILE ORGANICS BY GC-MS (SOIL)

	DH0728	DH0728	DH0729		l
	2012/04/26	2012/04/26	2012/04/26		
	09:00	09:00	09:15		
	S005952	S005952	S005952		
Units	BH-19-1.1-1.4	BH-19-1.1-1.4	BH-19-4.1-4.4	RDL	QC Batch
		Lab-Dup			
mg/kg	<0.0020	<0.0020	<0.0020	0.0020	5800011
mg/kg	<0.0020	<0.0020	<0.0020	0.0020	5800011
%	100	105	101	N/A	5800011
%	105	109	121	N/A	5800011
%	96	96	97	N/A	5800011
%	99	99	99	N/A	5800011
	mg/kg mg/kg % %	2012/04/26 09:00 S005952 Units BH-19-1.1-1.4 mg/kg <0.0020 mg/kg <0.0020 % 100 % 105 % 96	2012/04/26 2012/04/26 09:00 09:00 S005952 S005952 S005952	2012/04/26 2012/04/26 2012/04/26 09:00 09:15 S005952 S005952 S005952 Units BH-19-1.1-1.4 BH-19-1.1-1.4 Lab-Dup	2012/04/26

Maxxam ID		DH0730		DH0731	DH0732		
Sampling Date		2012/04/26		2012/04/26	2012/04/26		
· -		10:15		10:30	10:45		
COC Number		S005952		S005952	S005952		
	Units	BH-20-2.3-2.6	RDL	BH-20-3.5-3.8	BH-20-4.7-5.0	RDL	QC Batch
Volatiles							
1,2-dibromoethane	mg/kg	<0.060 (1)	0.060	<0.0020	<0.0020	0.0020	5800011
1,2-dichloroethane	mg/kg	<0.0020	0.0020	0.0579	<0.0020	0.0020	5800011
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	103	N/A	104	105	N/A	5800011
D10-ETHYLBENZENE (sur.)	%	124	N/A	121	122	N/A	5800011
D4-1,2-DICHLOROETHANE (sur.)	%	92	N/A	96	97	N/A	5800011
D8-TOLUENE (sur.)	%	98	N/A	100	99	N/A	5800011

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference.



Client Project #: 10-1177.100 Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA Sampler Initials: GC

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		DH0733		DH0734		DH0735		
Sampling Date		2012/04/26	i	2012/04/26		2012/04/26		
' "		11:45		12:00		13:00		
COC Number		S005952		S005952		\$005952		
	Units	BH-21-2.3-2.6	RDL	BH-21-3.5-3.8	RDL	BH-22-2.3-2.6	RDL	QC Batch

Volatiles								
1,2-dibromoethane	mg/kg	<0.020 (1)	0.020	<0.0020	0.0020	<0.030 (1)	0.030	5800011
1,2-dichloroethane	mg/kg	0.0215	0.0020	<0.0020	0.0020	0.0977	0.0020	5800011
Surrogate Recovery (%)								
4-BROMOFLUOROBENZENE (sur.)	%	103	N/A	104	N/A	101	N/A	5800011
D10-ETHYLBENZENE (sur.)	%	127	N/A	122	N/A	122	N/A	5800011
D4-1,2-DICHLOROETHANE (sur.)	%	92	N/A	94	N/A	93	N/A	5800011
D8-TOLUENE (sur.)	%	100	N/A	100	N/A	101	N/A	5800011

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference.

Maxxam ID		DH0736		DH0737	DH0738		
Sampling Date		2012/04/26		2012/04/26	2012/04/26		
, ,		13:00		13:15	13:30		
COC Number		S005952		S005952	S005952		
	Units	DUP-22	RDL	BH-22-3.5-3.8	BH-22-4.7-5.0	RDL	QC Batch

Volatiles							
1,2-dibromoethane	mg/kg	<0.030 (1)	0.030	<0.0020	<0.0020	0.0020	5800011
1,2-dichloroethane	mg/kg	0.129	0.0020	<0.0020	<0.0020	0.0020	5800011
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	105	N/A	102	100	N/A	5800011
D10-ETHYLBENZENE (sur.)	%	99	N/A	123	122	N/A	5800011
D4-1,2-DICHLOROETHANE (sur.)	%	91	N/A	96	95	N/A	5800011
D8-TOLUENE (sur.)	%	100	N/A	99	98	N/A	5800011

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference.



Report Date: 2012/05/07

O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Sampler Initials: GC

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		DH0739		DH0740	DH0741		
Sampling Date		2012/04/26		2012/04/26	2012/04/26		
		14:30		14:45	15:00		
COC Number		S005953		S005953	\$005953		
	Units	BH-24-2.3-2.6	RDL.	BH-24-3.5-3.8	BH-24-4.7-5.0	RDL	QC Batch
Volatiles						T	
1,2-dibromoethane	mg/kg	<0.0040 (1)	0.0040	<0.0020	<0.0020	0.0020	5800011
1,2-dichloroethane	mg/kg	<0.0020	0.0020	0.0113	<0.0020	0.0020	5800011
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	104	N/A	103	103	N/A	5800011
D10-ETHYLBENZENE (sur.)	%	115	N/A	120	121	N/A	5800011
D4-1,2-DICHLOROETHANE (sur.)	%	91	N/A	95	95	N/A	5800011
D8-TOLUENE (sur.)	%	100	N/A	102	99	N/A	5800011

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference.

1.2 dibromoothano	malka	<0.030 (1)	<0.030 (1)	0.030	<0.0020	0.0020	5800011
Volatiles							
	Units	BH-25-1.7-2.0	DUP-25	RDL	BH-25-3.5-3.8	RDL	QC Batch
COC Number		\$005953	\$005953	<u> </u>	S005953	- DDI	00 0-4-1
Sampling Date		2012/04/26 16:00	2012/04/26 16:00		2012/04/26 16:15		
Maxxam ID		DH0742	DH0743		DH0744		

Volatiles							
1,2-dibromoethane	mg/kg	<0.030 (1)	<0.030 (1)	0.030	<0.0020	0.0020	5800011
1,2-dichloroethane	mg/kg	<0.0020	<0.0020	0.0020	0.0346	0.0020	5800011
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	101	103	N/A	101	N/A	5800011
D10-ETHYLBENZENE (sur.)	%	124	123	N/A	120	N/A	5800011
D4-1,2-DICHLOROETHANE (sur.)	%	92	94	N/A	94	N/A	5800011
D8-TOLUENE (sur.)	%	100	101	N/A	99	N/A	5800011

N/A = Not Applicable

RDL = Reportable Detection Limit

(1) Detection limits raised due to matrix interference.



Client Project #: 10-1177.100
Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA
Sampler Initials: GC

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		DH0745	DH0746	DH0747		
Sampling Date		2012/04/26	2012/04/26	2012/04/26		
1		16:30	17:30	17:45		
COC Number		S005953	S005953	S005953		
	Units	BH-25-4.7-5.0	BH-26-1.7-2.0	BH-26-2.3-2.6	RDL	QC Batch

Volatiles						
1,2-dibromoethane	mg/kg	<0.0020	<0.0020	<0.0020	0.0020	5800011
1,2-dichloroethane	mg/kg	<0.0020	<0.0020	<0.0020	0.0020	5800011
Surrogate Recovery (%)						
4-BROMOFLUOROBENZENE (sur.)	%	100	99	102	N/A	5800011
D10-ETHYLBENZENE (sur.)	%	120	121	122	N/A	5800011
D4-1,2-DICHLOROETHANE (sur.)	%	94	94	94	N/A	5800011
D8-TOLUENE (sur.)	%	98	98	98	N/A	5800011



Client Project #: 10-1177.100

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Sampler Initials: GC

Package 1 1.0°C

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

General Comments

Results relate only to the items tested.



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Quality Assurance Report Maxxam Job Number: EB234556

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	Units	QC Limits
5799336 YC1	Matrix Spike	D10-ANTHRACENE (sur.)	2012/04/30		74	%	50 - 130
		D12-BENZO(A)PYRENE (sur.)	2012/04/30		46 (1)		50 - 130
		D8-ACENAPHTHYLENE (sur.)	2012/04/30		77	%	50 - 130
		TERPHENYL-D14 (sur.)	2012/04/30		88	%	50 - 130
		Naphthalene	2012/04/30		91	%	50 - 130
	Spiked Blank	D10-ANTHRACENE (sur.)	2012/04/30		90	%	50 - 130
		D12-BENZO(A)PYRENE (sur.)	2012/04/30		99	%	50 - 130
		D8-ACENAPHTHYLENE (sur.)	2012/04/30		94	%	50 - 130
		TERPHENYL-D14 (sur.)	2012/04/30		91	%	50 - 130
		Benzo(a)pyrene	2012/04/30		91	%	50 - 130
		Naphthalene	2012/04/30		90	%	50 - 130
	Method Blank	D10-ANTHRACENE (sur.)	2012/04/30		92	%	50 - 130
		D12-BENZO(A)PYRENE (sur.)	2012/04/30		99	%	50 - 130
		D8-ACENAPHTHYLENE (sur.)	2012/04/30		88	%	50 - 130
		TERPHENYL-D14 (sur.)	2012/04/30		97	%	50 - 130
		Benzo(a)pyrene	2012/04/30	<0.0050		mg/kg	
		Naphthalene	2012/04/30	<0.0050		mg/kg	
	RPD	Benzo(a)pyrene	2012/04/30	NC		%	50
		Naphthalene	2012/04/30	19.9		%	50
5799443 KH7	Method Blank	Moisture	2012/04/29	<0.30		%	
	RPD [DH0728-01]	Moisture	2012/04/29	15.7		%	20
5799758 AK8	Matrix Spike						
	[DH0731-01]	O-TERPHENYL (sur.)	2012/05/03		121	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/05/03		95	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2012/05/03		108	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2012/05/03		117	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/05/03		103	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/05/03		83	%	70 - 130
		F3 (C16-C34 Hydrocarbons)	2012/05/03		91	%	70 - 130
		F4 (C34-C50 Hydrocarbons)	2012/05/03		97	%	70 - 130
	Method Blank	O-TERPHENYL (sur.)	2012/05/04		97	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/05/04	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2012/05/04	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2012/05/04	<10		mg/kg	
	RPD [DH0730-01]	F2 (C10-C16 Hydrocarbons)	2012/05/03	30.4		%	50
		F3 (C16-C34 Hydrocarbons)	2012/05/03	NC		%	50
		F4 (C34-C50 Hydrocarbons)	2012/05/03	NC		%	50
5799989 YT	Matrix Spike						
	[DH0729-01]	1,4-Difluorobenzene (sur.)	2012/04/30		117	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2012/04/30		98	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2012/04/30		118	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/04/30		99	%	60 - 140
		Benzene	2012/04/30		109	%	60 - 140
		Toluene	2012/04/30		105	%	60 - 140
		Ethylbenzene	2012/04/30		113	%	60 - 140
		m & p-Xylene	2012/04/30		113	%	60 - 140
		o-Xylene	2012/04/30		110	%	60 - 140
		(C6-C10)	2012/04/30		109	%	60 - 140
	Spiked Blank	1,4-Difluorobenzene (sur.)	2012/04/30		99	%	60 - 140
	-	4-BROMOFLUOROBENZENE (sur.)	2012/04/30		97	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2012/04/30		109	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/04/30		99	%	60 - 140
		Benzene	2012/04/30		102	%	60 - 140
		Toluene	2012/04/30		98	%	60 - 140
		Ethylbenzene	2012/04/30		105	%	60 - 140
		• • • • • • • • • • • • • • • • • • • •					



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Quality Assurance Report (Continued)

Maxxam Job Number: EB234556

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	Units	QC Limits
5799989 YT	Spiked Blank	m & p-Xylene	2012/04/30		106	%	60 - 140
		o-Xylene	2012/04/30		103	%	60 - 140
		(C6-C10)	2012/04/30		102	%	60 - 140
	Method Blank	1,4-Difluorobenzene (sur.)	2012/04/30		101	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2012/04/30		99	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2012/04/30		110	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/04/30		98	%	60 - 140
		Benzene	2012/04/30	<0.0050		mg/kg	
		Toluene	2012/04/30	<0.020		mg/kg	
		Ethylbenzene	2012/04/30	< 0.010		mg/kg	
		Xylenes (Total)	2012/04/30	<0.040		mg/kg	
		m & p-Xylene	2012/04/30	<0.040		mg/kg	
		o-Xylene	2012/04/30	<0.020		mg/kg	
		F1 (C6-C10) - BTEX	2012/04/30	<12		mg/kg	
		(C6-C10)	2012/04/30	<12		mg/kg	
	RPD [DH0728-01]	Benzene	2012/04/30	NC		%	50
		Toluene	2012/04/30	NC		%	50
		Ethylbenzene	2012/04/30	NC		%	50
		Xylenes (Total)	2012/04/30	NC		%	50
		m & p-Xylene	2012/04/30	NC		%	50
		o-Xylene	2012/04/30	NC		%	50
		F1 (C6-C10) - BTEX	2012/04/30	NC		%	50
		(C6-C10)	2012/04/30	NC		%	50
5800011 PS7	Matrix Spike						
	[DH0729-01]	4-BROMOFLUOROBENZENE (sur.)	2012/04/30		99	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2012/04/30		116	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/04/30		106	%	60 - 140
		D8-TOLUENE (sur.)	2012/04/30		100	%	60 - 140
		1,2-dibromoethane	2012/04/30		134	%	60 - 140
		1,2-dichloroethane	2012/04/30		139	%	60 - 140
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/04/30		98	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2012/04/30		97	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/04/30		104	%	60 - 140
		D8-TOLUENE (sur.)	2012/04/30		99	%	60 - 140
		1,2-dibromoethane	2012/04/30		97	%	60 - 140
		1,2-dichioroethane	2012/04/30		105	%	60 - 140
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/04/30		101	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2012/04/30		99	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/04/30		96	%	60 - 140
		D8-TOLUENE (sur.)	2012/04/30		99	%	60 - 140
		1,2-dibromoethane	2012/04/30	<0.0020		mg/kg	
		1,2-dichloroethane	2012/04/30	<0.0020		mg/kg	
	RPD [DH0728-01]	1,2-dibromoethane	2012/04/30	NC		%	50
		1,2-dichloroethane	2012/04/30	NC		%	50
5803921 SG8	Matrix Spike						
	[DH0728-01]	Total Lead (Pb)	2012/05/04		89	%	75 - 125
	QC Standard	Total Lead (Pb)	2012/05/04		102	%	54 - 146
	Spiked Blank	Total Lead (Pb)	2012/05/03		89	%	75 - 125
	Method Blank	Total Lead (Pb)	2012/05/03	<1.0		mg/kg	
	RPD [DH0728-01]	Total Lead (Pb)	2012/05/03	NC		%	35
5803936 SG8	Matrix Spike	Total Arsenic (As)	2012/05/01		94	%	75 - 125
	-	Total Barium (Ba)	2012/05/01		NC	%	75 - 125
		Total Chromium (Cr)	2012/05/01		109	%	75 - 125
		Total Copper (Cu)	2012/05/01		92	%	75 - 125
		Total Lead (Pb)	2012/05/01		76	%	75 - 125
		Total Lead (Pb)	2012/05/01				



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNES ROAD WINNIPEG / MANITOBA

Quality Assurance Report (Continued)

Maxxam Job Number: EB234556

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	Units	QC Limits
5803936 SG8	Matrix Spike	Total Zinc (Zn)	2012/05/01		NC	%	75 - 125
	QC Standard	Total Arsenic (As)	2012/05/01		116	%	50 - 150
		Total Barium (Ba)	2012/05/01		128	%	69 - 131
		Total Chromium (Cr)	2012/05/01		124	%	41 - 159
		Total Copper (Cu)	2012/05/01		108	%	72 - 127
		Total Lead (Pb)	2012/05/01		87	%	54 - 146
		Total Zinc (Zn)	2012/05/01		110	%	72 - 128
	Spiked Blank	Total Arsenic (As)	2012/05/01		99	%	75 - 125
	opinios siann	Total Barium (Ba)	2012/05/01		104	%	75 - 125
		Total Chromium (Cr)	2012/05/01		104	%	75 - 125
		Total Copper (Cu)	2012/05/01		100	%	75 - 125
		Total Lead (Pb)	2012/05/01		95	%	75 - 125
		Total Zinc (Zn)	2012/05/01		100	%	75 - 125
	Method Blank	Total Arsenic (As)	2012/05/01	<1.0	100	mg/kg	10 - 120
	Mettion Digitik	Total Barium (Ba)	2012/05/01	<10			
		Total Chromium (Cr)	2012/05/01	<1.0		mg/kg	
			2012/05/01	<5.0		mg/kg	
		Total Copper (Cu) Total Lead (Pb)				mg/kg	
			2012/05/01	<1.0		mg/kg	
	000	Total Zinc (Zn)	2012/05/01	<10		mg/kg	0.5
	RPD	Total Arsenic (As)	2012/05/01	1.1		%	35
		Total Barium (Ba)	2012/05/01	2.1		%	35
		Total Chromium (Cr)	2012/05/01	0.9		%	35
		Total Copper (Cu)	2012/05/01	NC		%	35
		Total Lead (Pb)	2012/05/01	3.7		%	35
		Total Zinc (Zn)	2012/05/01	1.7		%	35
5806519 JW0	Matrix Spike	Extractable (Water) Methyl Sulfone (sur.)	2012/05/03		65	%	50 - 130
		Extractable (Water) Ethylene Glycol	2012/05/03		95	%	30 - 130
		Extractable (Water) Propylene Glycol	2012/05/03		72	%	30 - 130
	Spiked Blank	Extractable (Water) Methyl Sulfone (sur.)	2012/05/03		83	%	50 - 130
		Extractable (Water) Ethylene Glycol	2012/05/03		92	%	30 - 130
		Extractable (Water) Propylene Glycol	2012/05/03		75	%	30 - 130
	Method Blank	Extractable (Water) Methyl Sulfone (sur.)	2012/05/03		80	%	50 - 130
		Extractable (Water) Ethylene Glycol	2012/05/03	<10		mg/kg	
		Extractable (Water) Propylene Glycol	2012/05/03	<10		mg/kg	
	RPD	Extractable (Water) Ethylene Glycol	2012/05/03	NC		%	50
5807874 SG8	Matrix Spike	Total Arsenic (As)	2012/05/05		86	%	75 - 125
		Total Barium (Ba)	2012/05/05		NC	%	75 - 125
		Total Chromium (Cr)	2012/05/05		93	%	75 - 125
		Total Copper (Cu)	2012/05/05		89	%	75 - 125
		Total Lead (Pb)	2012/05/05		89	%	75 - 125
		Total Zinc (Zn)	2012/05/05		NC	%	75 - 125
	QC Standard	Total Arsenic (As)	2012/05/05		118	%	50 - 150
		Total Barium (Ba)	2012/05/05		113	%	69 - 131
		Total Chromium (Cr)	2012/05/05		117	%	41 - 159
		Total Copper (Cu)	2012/05/05		111	%	72 - 127
		Total Lead (Pb)	2012/05/05		105	%	54 - 146
		Total Zinc (Zn)	2012/05/05		106	%	72 - 128
	Spiked Blank	Total Arsenic (As)	2012/05/06		91	%	75 - 125
	•	Total Barium (Ba)	2012/05/06		93	%	75 - 125
		Total Chromium (Cr)	2012/05/06		97	%	75 - 125
		Total Copper (Cu)	2012/05/06		98	%	75 - 125
		Total Lead (Pb)	2012/05/06		96	%	75 - 125
		Total Zinc (Zn)	2012/05/06		88	%	75 - 125
	Method Blank	Total Arsenic (As)	2012/05/05	<1.0		mg/kg	
	Diding	Total Barium (Ba)	2012/05/05	<10		mg/kg	
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Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location:

208 ST. ANNES ROAD WINNIPEG / MANITOBA

Quality Assurance Report (Continued)

Maxxam Job Number: EB234556

QA/QC			Date				
Batch			Analyzed		_		0011.11
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	Units	QC Limits
5807874 SG8	Method Blank	Total Chromium (Cr)	2012/05/05	<1.0		mg/kg	
		Total Copper (Cu)	2012/05/05	<5.0		mg/kg	
		Total Lead (Pb)	2012/05/05	<1.0		mg/kg	
		Total Zinc (Zn)	2012/05/05	<10		mg/kg	
	RPD	Total Arsenic (As)	2012/05/05	NC		%	35
		Total Barium (Ba)	2012/05/05	4.9		%	35
		Total Chromium (Cr)	2012/05/05	9.7		%	35
		Total Copper (Cu)	2012/05/05	NC		%	35
		Total Lead (Pb)	2012/05/05	NC		%	35
		Total Zinc (Żn)	2012/05/05	NC_		%	35_

Duplicate: Palred analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery. Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

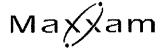
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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 Edmonton: 9331 - 48th Street T6B 2R4 Telephone(780)577-7100 Fax(780)450-4187



Validation Signature Page

Maxxam Job #: B234556	
The analytical data and all QC contained in this report were rev	riewed and validated by the following individual(s).
Carol Gebhart, Senior Analyst	
4	
Kristopher Beaudet, B.Sc., P.Chem, Scientific Specialist	-
Karla Offord, Senior Analyst, Organics Department	-
Luba Shymushovska, Senior Analyst, Organic Department	_
The Dud WANG	
Pui Hang Tam, Senior Analýst	_

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.

Naxae

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Springword 9331 - 48 Street, TVB 244 - Ph. (280) 555 (110) - Spri (20) 485-4167, Tollingwings 25 445

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Project ID:	10-1177.100		*				F
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ENERGY COR	DOWNSTREAM XO	Site address: 208 St. Annes Road	Site Otty/Prov. Winniped / Manitobn	Outlet number: 63455	Monitoring a) re / rs / ri / ra / m / (circle one)	Senior Suncor Advisor:	Brian Holmes 🔲 Rick Lemoine 🔀	Other:	
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Manitoring a re / r. / ri / ra / m / circle one) Senior Suncor Advisor:	юн	X Other:	~ ~ ~	X □ DPSTREAM □	X 2 LSD#:	X Site/Field:	ス AFE#:	大 RO# (if applicable);	X Senior Suncor Advisor:	X Mike Morden 🗀 Ben Parsons	Russell Browne Phil Scalla	Other:		2 F 5	LAB USE ONLY	Sell Dato Time: Maxxam Job #: < 24556	Custody Tomographia
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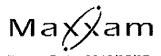
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Special instructions:



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

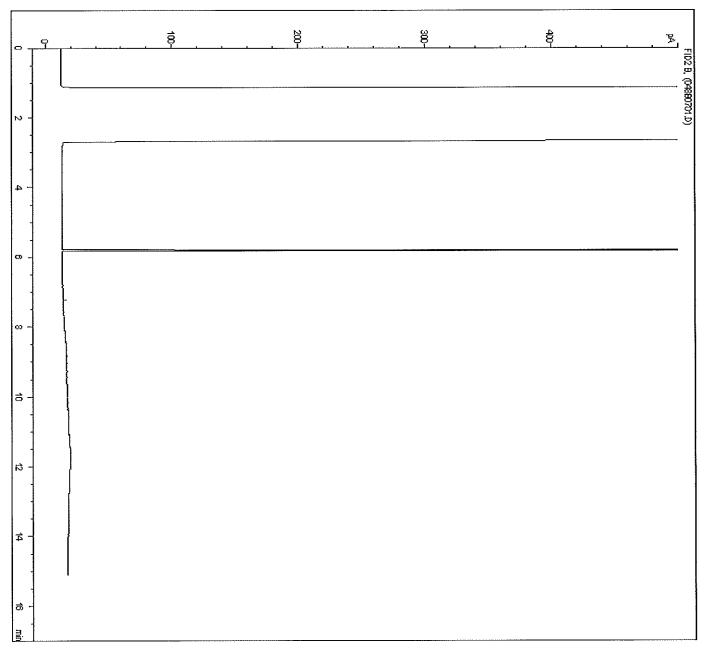
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-19-1.1-1.4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\048B0701.D

Sample Name: DH0728



*** End of Report ***

Instrument 1 2012/05/04 11:45:07 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

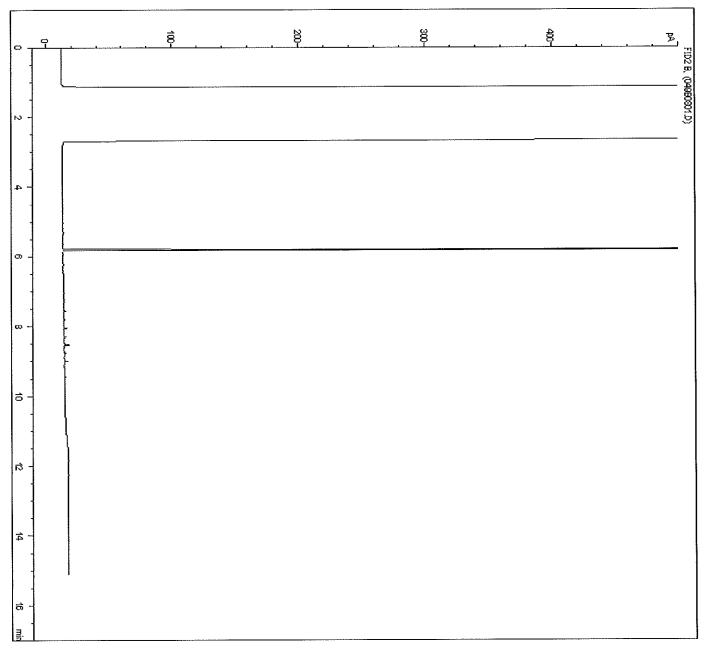
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-19-4.1-4.4

CCME Hydrocarbons (F2-F4 In soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\049B0801.D

Sample Name: DH0729



*** End of Report ***

Instrument 1 2012/05/04 11:45:09 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

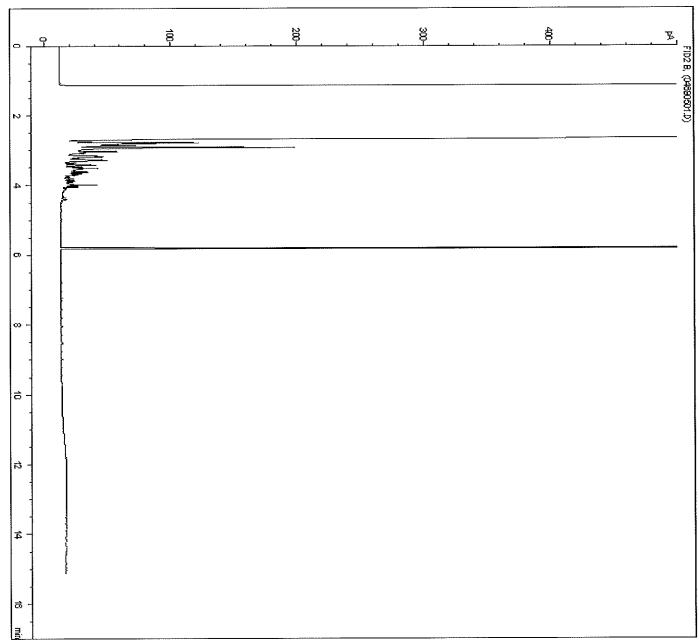
Client Project #: 10-1177.100

Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-20-2.3-2.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

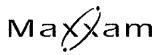
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*** End of Report ***

Instrument 1 2012/05/04 11:45:03 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

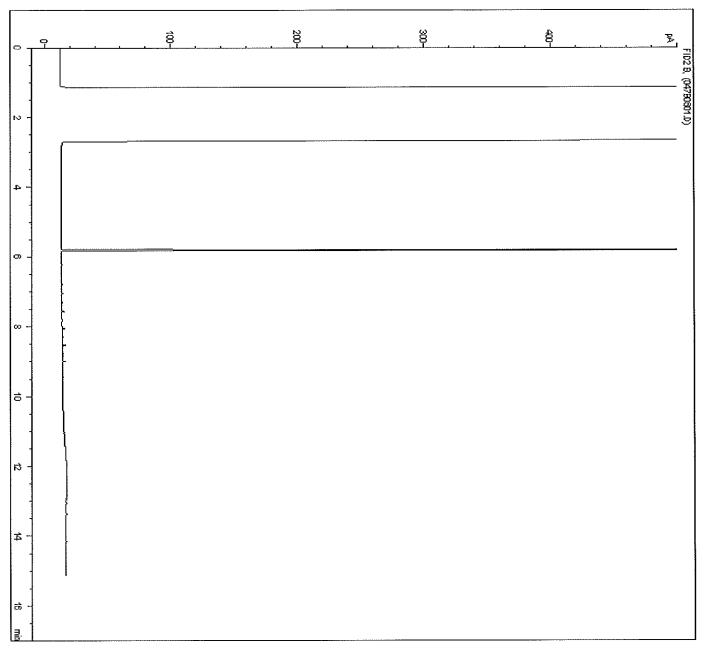
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-20-3.5-3.8

CCME Hydrocarbons (F2-F4 in soll) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\047B0601.D

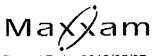
Sample Name: DH0731



*** End of Report ***

Instrument 1 2012/05/04 11:45:05 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

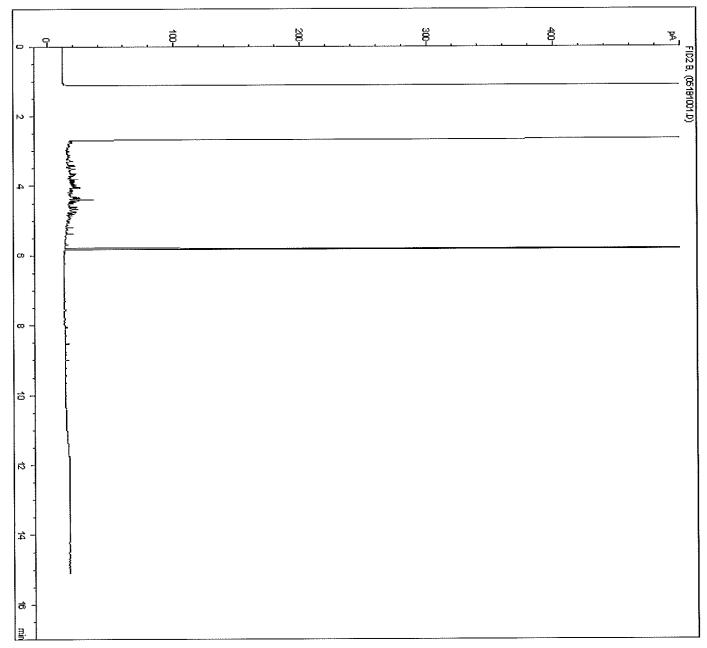
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-21-2.3-2.6

CCME Hydrocarbons (F2-F4 In soil) Chromatogram

Data File C:\CHEN32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\051B1001.D

Sample Name: DH0733



*** End of Report ***

Instrument 1 2012/05/04 11:45:14 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

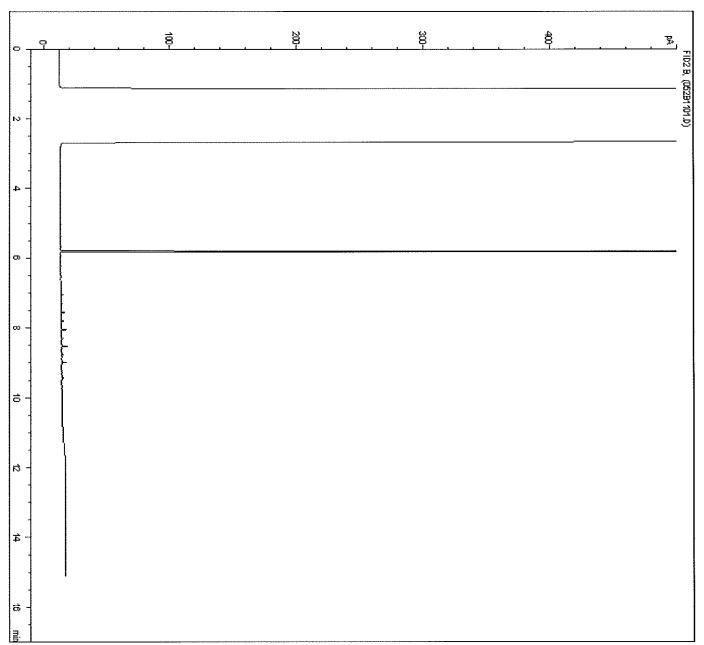
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-21-3.5-3.8

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\052B1101.D

Sample Name: DH0734



*** End of Report ***

Instrument 1 2012/05/04 11:45:16 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

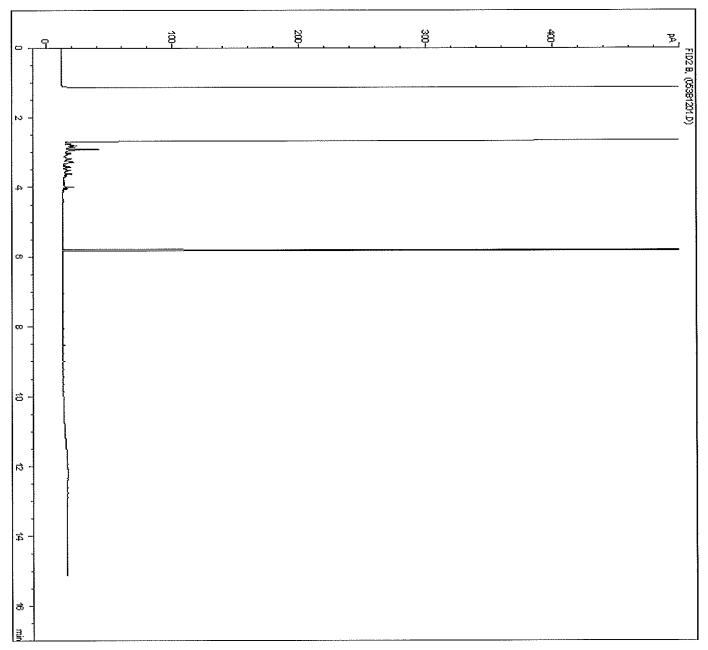
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-22-2.3-2.6

CCME Hydrocarbons (F2-F4 in soll) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\053B1201.D

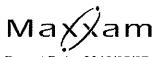
Sample Name: DH0735



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Instrument 1 2012/05/04 11:45:18 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

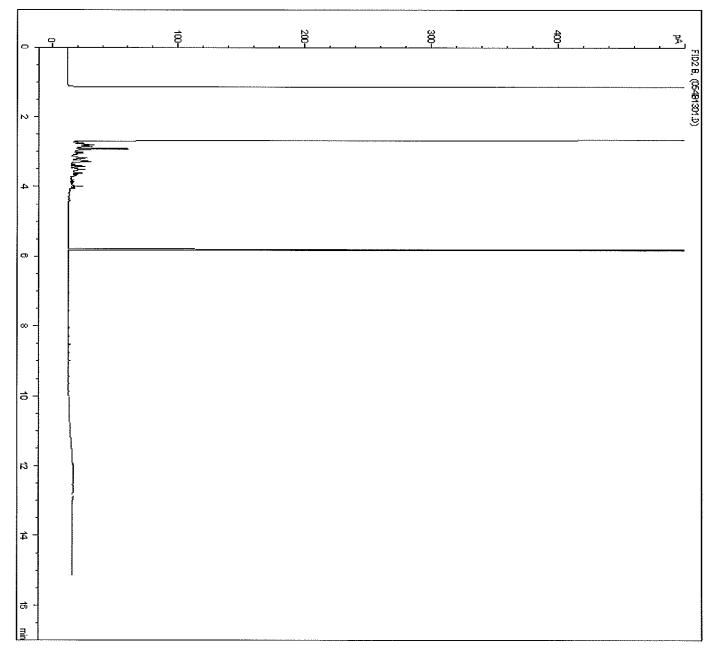
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: DUP-22

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\054B1301.D

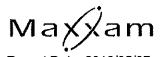
Sample Name: DH0736



*** End of Report ***

Instrument 1 2012/05/04 11:45:20 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

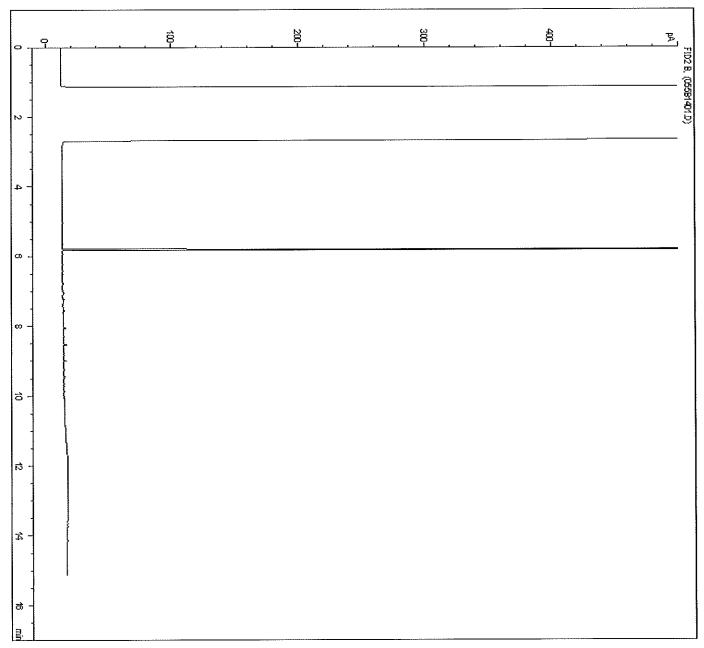
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-22-3.5-3.8

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\055B1401.D

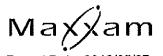
Sample Name: DH0737



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Instrument 1 2012/05/04 11:45:22 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

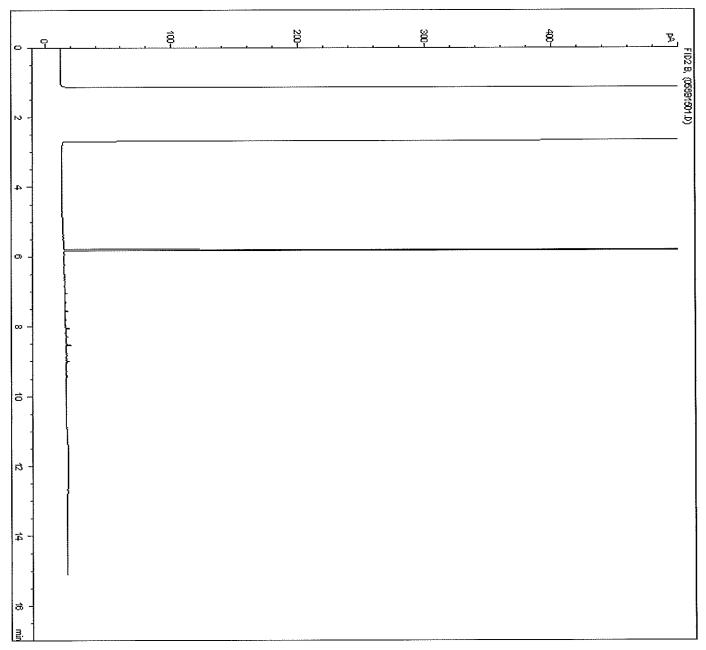
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-22-4.7-5.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\056B1501.D

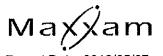
Sample Name: DH0738



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Instrument 1 2012/05/04 11:45:25 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

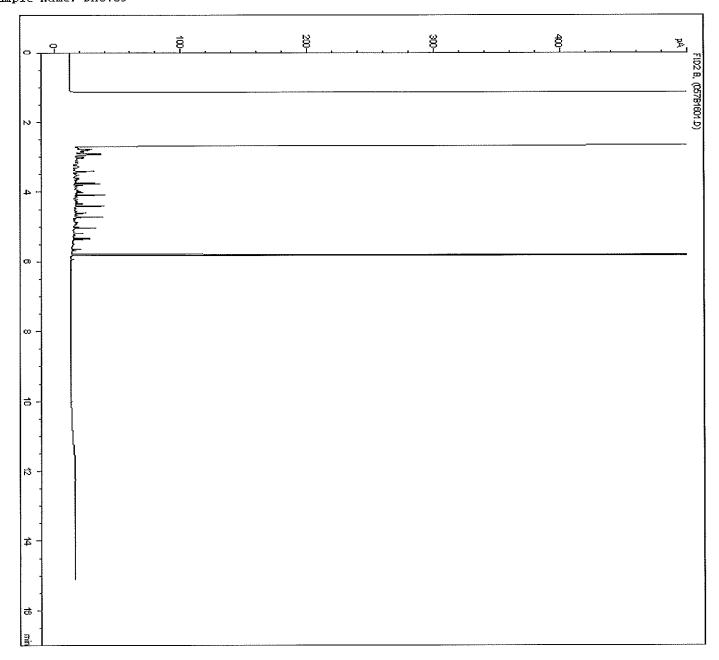
Client Project #: 10-1177.100

Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-24-2.3-2.6

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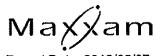
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*** End of Report ***

Instrument 1 2012/05/04 11:45:27 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

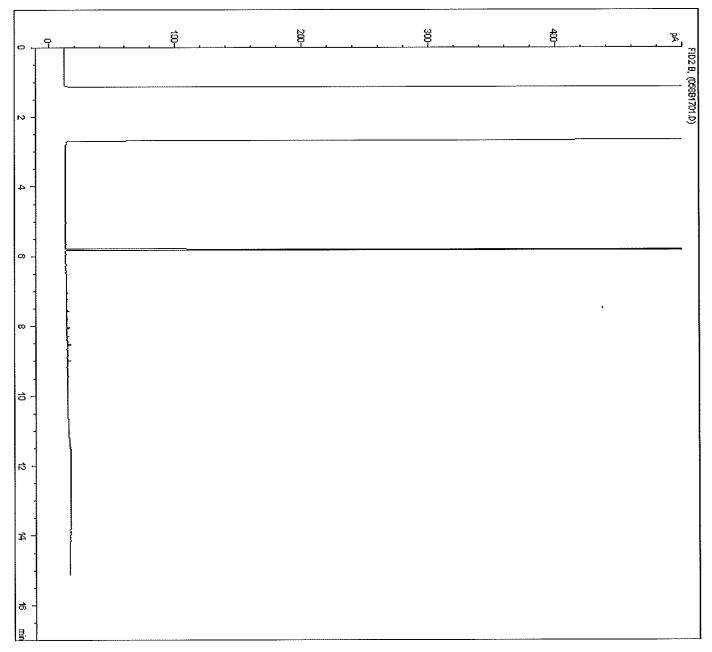
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-24-3.5-3.8

CCME Hydrocarbons (F2-F4 in soll) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\058B1701.D

Sample Name: DH0740



*** End of Report ***

Instrument 1 2012/05/04 11:45:29 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

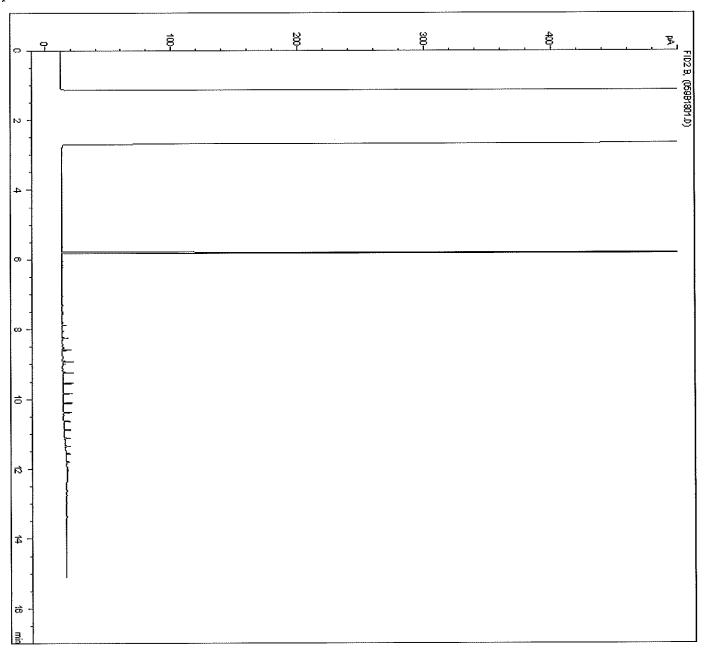
Client Project #: 10-1177.100

Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-24-4.7-5.0

CCME Hydrocarbons (F2-F4 in soll) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\059B1801.D Sample Name: DH0741



*** End of Report ***

Instrument 1 2012/05/04 11:45:31 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

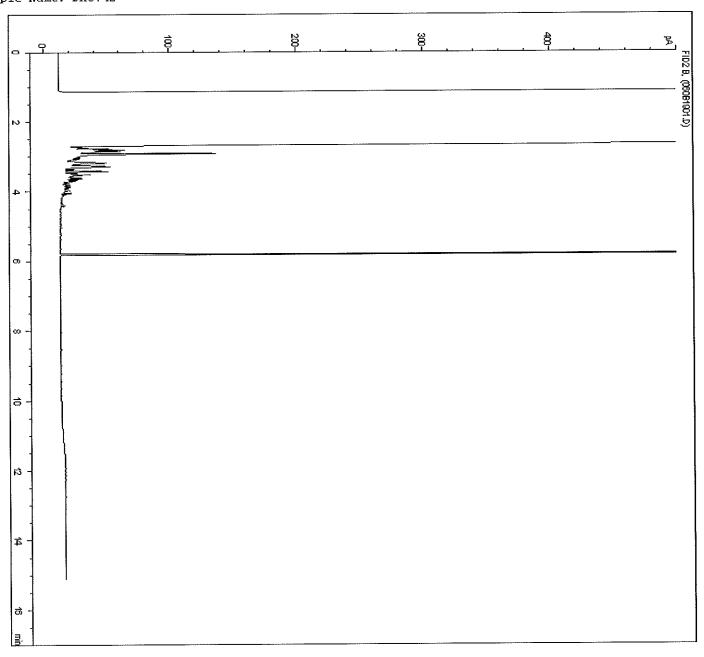
Client Project #: 10-1177.100

Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-25-1.7-2.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

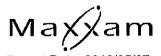
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Instrument 1 2012/05/04 11:45:33 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

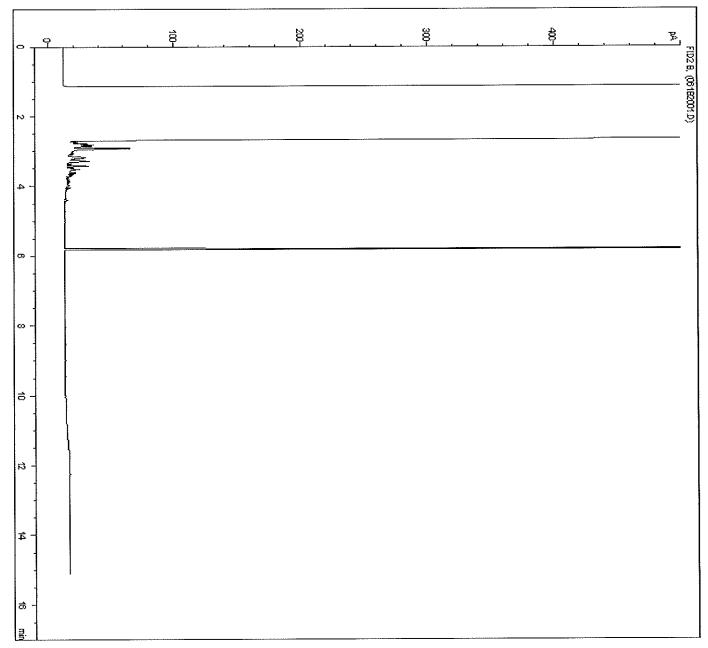
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: DUP-25

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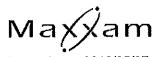
Sample Name: DH0743



*** End of Report ***

Instrument 1 2012/05/04 11:45:35 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

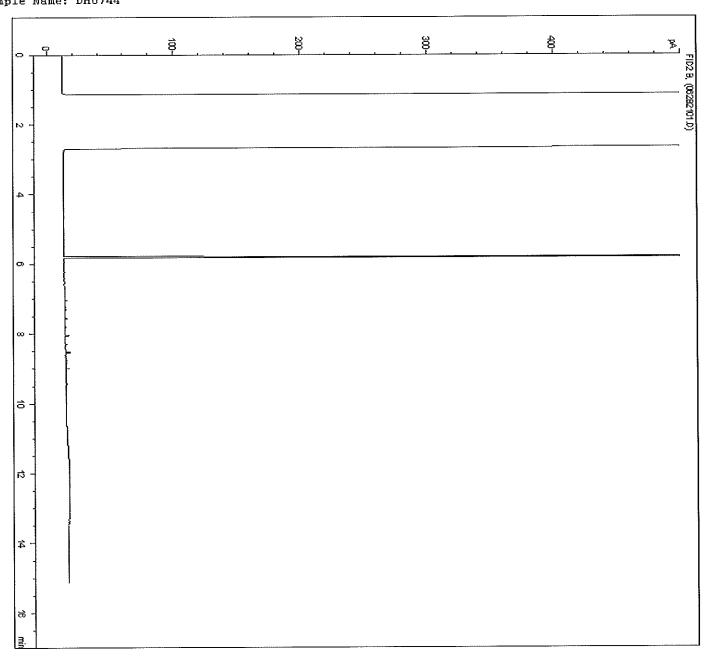
Client Project #: 10-1177.100

Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-25-3.5-3.8

CCME Hydrocarbons (F2-F4 in soll) Chromatogram

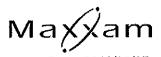
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*** End of Report ***

Instrument 1 2012/05/04 11:45:38 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

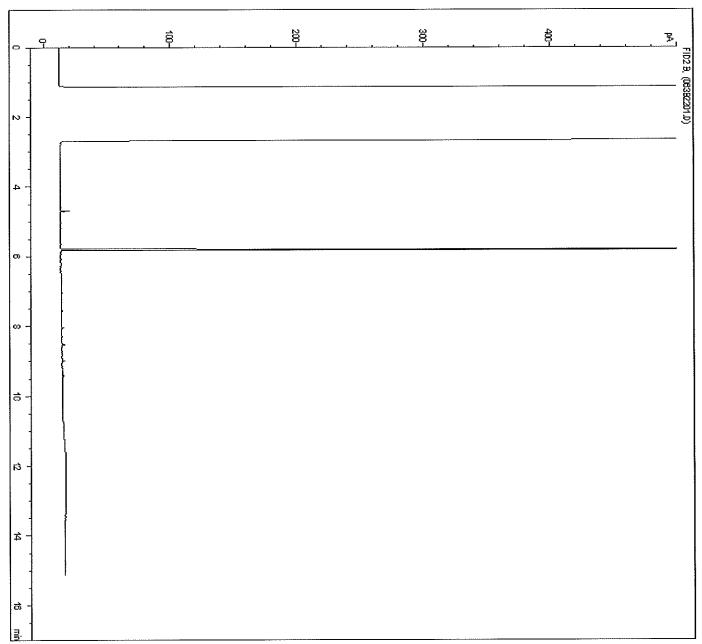
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-25-4.7-5.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\063B2201.D

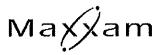
Sample Name: DH0745



*** End of Report ***

Instrument 1 2012/05/04 11:45:40 AM AK8

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

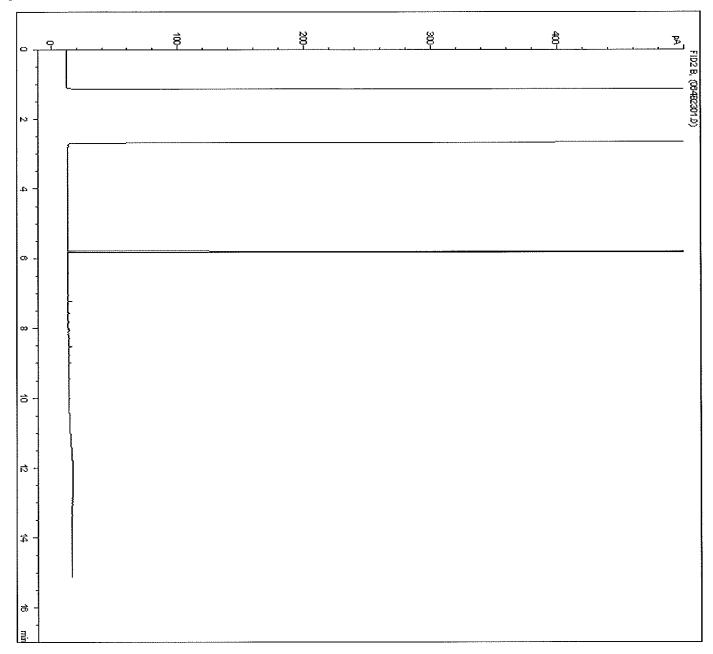
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-26-1.7-2.0

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Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\064B2301.D

Sample Name: DH0746



*** End of Report ***

Instrument 1 2012/05/04 11:45:42 AM AK8

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O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

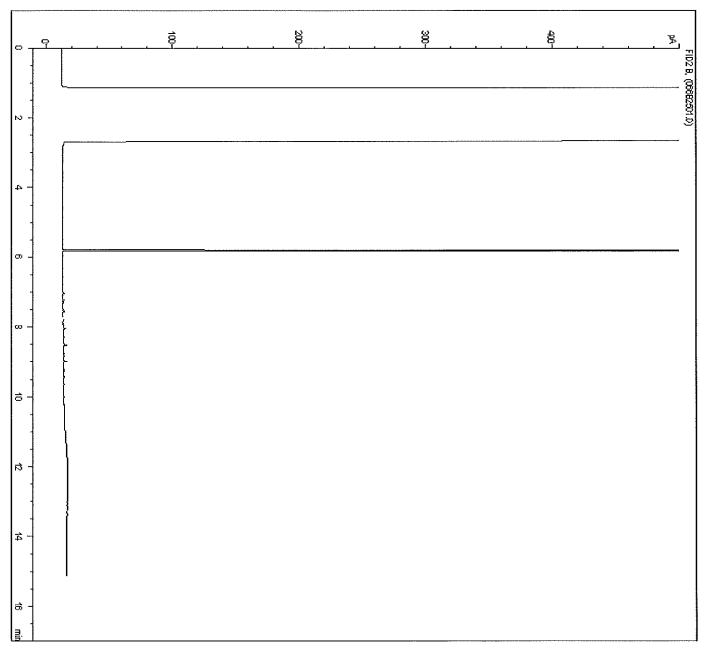
Site Reference: 208 ST. ANNES ROAD WINNIPEG /

Client ID: BH-26-2.3-2.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0503A\GNA0503A 2012-05-03 15-33-35\066B2501.D

Sample Name: DH0747



*** End of Report ***

Instrument 1 2012/05/04 11:45:46 AM AK8

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DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons	Sampling Date: <u>2012/04/26</u>				
Location: 208 St. Anne's Road, Winnipeg, MB	Laboratory: Maxxam Analytics Inc.				
Consultant Project Number: 10-1177.100	Sample Submission Number: <u>B234556</u>				
Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?				
Yes No	NA Comments				
Instrument Surrogate Recovery	The matrix spike recovery is below the control limit. X				
Are All Field QC Samples Within Alert Limits (Yes, No, Not	Applicable)?				
Yes No	NA Comments				
Field Blank Concentration Trip Blank Concentration Field Duplicate RPD X	X All field QC have met alert limits. X				
Has CoA been signed off (Yes/No)?: Has lab warranted all tests were in statistical control in CoA (Has lab warranted all tests were analyzed following SOP's in Were all samples analyzed within hold times (Yes/No)?: All volatiles samples methanol extracted, if required, within 4 Is Chain of Custody completed and signed (Yes/No)?: Were sample temperatures acceptable when they reached lab (CoA (Yes, No or N/A)?: Yes Yes Yes 8 hours (Yes, No or N/A)?: Yes Yes Yes				
Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?	<i>No</i>				
Date Issued:	Date of Response:				
Is data considered to be reliable (Yes/No)?: If answer is "No", describe and provide rationale:	Yes				
Data Reviewed by (Print): Alexia Reske-Naurocki Review Date: 2013/02/21 Revision Date (if applicable):	Data Reviewed by (Signature):				



Your Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003333

Attention: Adam Wickman
O'CONNOR ASSOCIATES ENVIRONMENTAL
7 TERRACON PLACE
WINNIPEG, MB
CANADA R2J 4B3

Report Date: 2012/06/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B251209 Received: 2012/06/15, 8:25

Sample Matrix: Water # Samples Received: 5

		Date	Date	
Analyses	Quantity	Extracted	Analyzed Laboratory Method	Analytical Method
BTEX/F1 in Water by HS GC/MS	4	N/A	2012/06/18 AB SOP-00039	CCME, EPA 8260C
BTEX/F1 in Water by HS GC/MS	1	N/A	2012/06/19 AB SOP-00039	CCME, EPA 8260C
CCME Hydrocarbons in Water (F2; C10-C16)	5	2012/06/20	2012/06/20 AB SOP-00040	EPA3510/CCME PHCCWS
			AB SOP-00037	
Lead (Dissolved)	5	N/A	2012/06/18 AB SOP-00043	EPA 200.8
Volatile Organic Compounds in Water	5	N/A	2012/06/18 EENVSOP-00021	EPA SW846, 8260C
BTEX/F1 in Water by HS GC/MS CCME Hydrocarbons in Water (F2; C10-C16) Lead (Dissolved)	1 5	N/A 2012/06/20 N/A	2012/06/19 AB SOP-00039 2012/06/20 AB SOP-00040 AB SOP-00037 2012/06/18 AB SOP-00043	CCME, EPA 8260C EPA3610/CCME PHCCWS EPA 200.8

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

Encryption Key

Desirae Hopkinson

22 Jun 2012 12:37:14 -06:00

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

Desirae Hopkinson, Project Manager Email: DHopkinson@maxxam.ca

Phone# (780) 577-7104

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.



Client Project #: 10-1177 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: JJ

AT1 BTEX AND F1-F2 (WATER)

Maxxam ID		DR8185		DR8186		DR8187		<u> </u>
Sampling Date		2012/06/13		2012/06/13		2012/06/13		
		13:00		13:15		13:30		
COC Number		S003333	1	\$003333		\$003333		
	UNITS	BH-19	RDL	BH-20	RDL	BH-21	RDL	QC Batch
Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	4.8	0.10	<0,10	0.10	5928943
Volatiles								
Benzene	ug/L	<0.40	0.40	340	0.40	0.82	0.40	5928890
Toluene	ug/L	<0.40	0.40	14	0.40	0.90	0.40	5928890
Ethylbenzene	ug/L	<0.40	0.40	6.3	0.40	<0.40	0.40	5928890
o-Xylene	ug/L	<0.40	0.40	7 80	0.40	0.52	0.40	5928890
m & p-Xylene	ug/L	<0.80	0.80	3200 (1)	8.0	<0.80	0.80	5928890
Xylenes (Total)	ug/L	<0.80	0.80	4000 (1)	8.0	<0.80	0.80	5928890
F1 (C6-C10) - BTEX	ug/L	<100	100	5600	100	<100	100	5928890
(C6-C10)	ug/L	<100	100	9900	100	<100	100	5928890
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	104	N/A	98	N/A	102	N/A	5928890
4-BROMOFLUOROBENZENE (sur.)	%	96	N/A	97	N/A	97	N/A	5928890
D4-1,2-DICHLOROETHANE (sur.)	%	97	N/A	95	N/A	101	N/A	5928890
O-TERPHENYL (sur.)	%	97	N/A	101	N/A	110	N/A	5928943

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.



Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: JJ

AT1 BTEX AND F1-F2 (WATER)

Maxxam ID		DR8188		DR8189		
Sampling Date		2012/06/13		2012/06/13		
		13:45		14:00	<u> </u>	
COC Number		S003333		\$003333		
	UNITS	BH-24	RDL	BH-25	RDL	QC Batch
L						1
Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	mg/L	2.9	0.10	2,3	0.10	5928943
Volatiles						
8enzene	ug/L	22000 (1)	40	2900 (1)	4.0	5928890
Toluene	ug/L	30000 (1)	40	150	0.40	5928890
Ethylbenzene	ug/L	2600 (1)	4.0	1500 (1)	4.0	5928890
o-Xylene	ug/L	5200 (1)	4.0	190	0.40	5928890
m & p-Xylene	ug/L	9000 (1)	8.0	2800 (1)	8.0	5928890
Xylenes (Total)	ug/L	14000 (1)	8.0	3000 (1)	8.0	5928890
F1 (C6-C10) - BTEX	ug/L	7500 (1)	1000	9700 (1)	1000	5928890
(C6-C10)	ug/L	76000 (1)	1000	17000 (1)	1000	5928890
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	94	N/A	95	N/A	5928890
4-BROMOFLUOROBENZENE (sur.)	%	101	N/A	99	N/A	5928890
D4-1,2-DICHLOROETHANE (sur.)	%	96	N/A	92	N/A	5928890
O-TERPHENYL (sur.)	%	102	N/A	104	N/A	5928943

N/A = Not Applicable RDL = Reportable Detection Limit

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.



Client Project #: 10-1177 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: JJ

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

	DR8185	DR8186	DR8187	DR8188	DR8189		
	2012/06/13	2012/06/13	2012/06/13	2012/06/13	2012/06/13		
	13:00	13:15	13:30	13:45	14:00	İ	
	S003333	S003333	S003333	S003333	S003333		
UNITS	BH-19	BH-20	BH-21	BH-24	BH-25	RDL	QC Batch
mg/L	<0.00020	0.0015	<0.00030	0.0018	<0.00020	0.00020	5930410
_		13:00 \$003333 UNITS BH-19	13:00 13:15	13:00 13:15 13:30 S003333 S003333 S003333 UNITS BH-19 BH-20 BH-21	13:00 13:15 13:30 13:45	13:00 13:15 13:30 13:45 14:00 S003333 S003333 S003333 S003333 S003333 UNITS BH-19 BH-20 BH-21 BH-24 BH-25 BH-19 BH-20 BH-21 BH-24 BH-25 Company to the company to th	13:00

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: JJ

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		DR8185	DR8186	DR8187	DR8188		
Sampling Date		2012/06/13	2012/06/13	2012/06/13	2012/06/13		
		13:00	13:15	13:30	13:45		
COC Number		S003333	S003333	S003333	S003333		
	UNITS	BH-19	BH-20	BH-21	BH-24	RDL	QC Batch
Volatiles							
1,2-dichloroethane	ug/L	2.5	35	<0.50	36	0.50	5928928
1,2-dibromoethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5928928
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	110	115	104	123	N/A	5928928
D4-1,2-DICHLOROETHANE (sur.)	%	106	97	92	100	N/A	5928928
D8-TOLUENE (sur.)	%	96	96	96	93	N/A	5928928

	DR8189		
	2012/06/13		
	14:00		
	S003333		
UNITS	BH-25	RDL	QC Batch
ug/L	10	0.50	5928928
ug/L	<0.50	0.50	5928928
%	119	N/A	5928928
%	92	N/A	5928928
%	103	N/A	5928928
	ug/L % %	2012/06/13 14:00 S003333 UNITS BH-25 ug/L 10 ug/L <0.50 % 119 % 92	2012/06/13 14:00



Report Date: 2012/06/21

O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: JJ

Package 1 4.0°C Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

Results relate only to the items tested.



Attention: Adam Wickman Client Project #: 10-1177

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: EB251209

QA/QC			Date				
Batch	00.7	B	Analyzed	1.1-1	D	LIMITO	0015-4
Num Init	QC Type	Parameter (2002)	yyyy/mm/dd	Value	Recovery 97	UNITS	QC Limits 70 - 130
5928890 YT	Matrix Spike	1,4-Diffuorobenzene (sur.)	2012/06/18			%	
		4-BROMOFLUOROBENZENE (sur.)	2012/06/18		98	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/18		99	% %	70 - 130
		Benzene	2012/06/18		87 96		70 - 130
		Toluene	2012/06/18		86	%	70 - 130
		Ethylbenzene	2012/06/18		92	%	70 - 130
		o-Xylene	2012/06/18		91	%	70 - 130
		m & p-Xylene	2012/06/18		92	%	70 - 130
		(C6-C10)	2012/06/18		86	%	70 - 130
	Spiked Blank	1,4-Difluorobenzene (sur.)	2012/06/18		98	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/06/18		96	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/18		97	%	70 - 130
		Benzene	2012/06/18		81	%	70 - 130
		Toluene	2012/06/18		81	%	70 - 130
		Ethylbenzene	2012/06/18		87	%	70 - 130
		o-Xylene	2012/06/18		86	%	70 - 130
		m & p-Xylene	2012/06/18		88	%	70 - 130
		(C6-C10)	2012/06/18		115	%	70 - 130
	Method Blank	1,4-Difluorobenzene (sur.)	2012/06/18		102	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/06/18		95	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/18		93	%	70 - 130
		Benzene	2012/06/18	<0.40		ug/L	
		Toluene	2012/06/18	<0.40		ug/L	
		Ethylbenzene	2012/06/18	< 0.40		ug/L	
		o-Xylene	2012/06/18	< 0.40		ug/L	
		m & p-Xylene	2012/06/18	<0.80		ug/L	
		Xylenes (Total)	2012/06/18	<0.80		ug/L	
		F1 (C6-C10) - BTEX	2012/06/18	<100		ug/L	
		(C6-C10)	2012/06/18	<100		ug/L	
	RPD	Benzene	2012/06/18	NC		%	40
	I D	Toluene	2012/06/18	NC		%	40
		Ethylbenzene	2012/06/18	NC		%	40
		o-Xylene	2012/06/18	NC		%	40
		m & p-Xylene	2012/06/18	NC		%	4(
			2012/06/18	NC		%	4(
		Xylenes (Total) F1 (C6-C10) - BTEX	2012/06/18	NC		%	4(
				NC		% %	41
	Madala Onlina	(C6-C10)	2012/06/18	INC	440	% %	70 - 13
5928928 KE4	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2012/06/18		110		
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/18		116	%	70 - 130
		D8-TOLUENE (sur.)	2012/06/18		95	%	70 - 130
		1,2-dichloroethane	2012/06/18		109	%	70 - 130
		1,2-dibromoethane	2012/06/18		86	%	70 - 130
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/06/18		112	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/18		95	%	70 - 130
		D8-TOLUENE (sur.)	2012/06/18		97	%	70 - 130
		1,2-dichloroethane	2012/06/18		96	%	70 - 13
		1,2-dibromoethane	2012/06/18		73	%	70 - 13
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/06/18		106	%	70 - 13
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/18		96	%	70 - 13
		D8-TOLUENE (sur.)	2012/06/18		97	%	70 - 13
		1,2-dichloroethane	2012/06/18	<0.50		ug/L	
		1,2-dibromoethane	2012/06/18	<0.50		ug/L	
	RPD	1,2-dichloroethane	2012/06/18	NC		%	41
		1,2-dibromoethane	2012/06/18	NC		%	40
		O-TERPHENYL (sur.)	2012/06/20		105	%	50 - 130



Attention: Adam Wickman Client Project #: 10-1177

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: EB251209

QA/QC			Date				
Batch			Analyzed		_		0011-1
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5928943 GG3	Matrix Spike	F2 (C10-C16 Hydrocarbons)	2012/06/20		114	%	70 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/06/20		96	%	50 - 130
	- Fr	F2 (C10-C16 Hydrocarbons)	2012/06/20		100	%	70 - 130
	Method Blank	O-TERPHENYL (sur.)	2012/06/20		100	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/06/20	<0.10		mg/L	
	RPD	F2 (C10-C16 Hydrocarbons)	2012/06/20	NC		%	40
5930410 HM3	Matrix Spike	Dissolved Lead (Pb)	2012/06/18		94	%	80 - 120
	Spiked Blank	Dissolved Lead (Pb)	2012/06/18		96	%	80 - 120
	Method Blank	Dissolved Lead (Pb)	2012/06/18	<0.00020		mg/L	
	RPD	Dissolved Lead (Pb)	2012/06/18	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

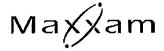
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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 of Maxxam Analytics Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780) 577-7100 Fax (780) 450-4187



Validation Signature Page

Maxxam Jo	ob #: B251209		

The analytical data and all O	C contained in this report wer	e reviewed and validated	by the followi	ing individual(s)
i ne anaivucai data and an O	C contained in this report wer	e reviewed and vandated	. Dy tile foliowi	a jiandi viduai (s

Daniel Reslan, Volatiles Supervisor

Dina Tleugabulova, Ph.D., Scientific Specialist, Inorganics Department

Karla Offord, Senior Analyst, Organics Department

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Naxan

Calgary: 4000 19st St. NE, TZE 6P8. Ph; (403) 281-3077, Fax; (403) 735-2240, Toll (res; (800) 386-7247

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CHAIN OF CUSTODY for SUNCOR ENERGY

Edmonton: 9331 - 48 Sinset, T6B 2P4. Ph; (780) 577-7100, Fax: (780) 450-4187, Toll free: (877) 465-8899

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ll samples am held for 6t	All samples are held for 60 calendar days after sample receipt, unless specified otherwise.	ss specified otherwi	Š		·		***	X	ijijţ	θŅ	Dx		n		Senior Suncor Advisor:	or Advisor:	
	Sample ID	Depth (unit)	Matrix GW / SW	Date/Time	Sampled D 24:00	BTEX Sleve	lúgəA inilis2	naci	រុវ ខាន់ oអ៊ៈ ហ្ isio1	oesiO ipreM	297	87 27	px	HOLD	Brian Holmes		Rick Lemoine
3H-19				12/06/13	1320	1	-	4-30 <i>p</i>		1	\geq	×		<u> ` </u>	Other:		
2 RH-30			SW O	GW 12/06/13	12.5		13.8 25.6 13.6	2 · 3	y V	10 de 1	\times	×		6			•
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3H-20	GW 12/06/13	1315		:	: ×		$\stackrel{\cdot\cdot}{>}$	×	2	6			•	
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				2 E 22						Œ	Russell Browne		Phil Scalia	
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Please indicate Filtered, Preserved or Both (F, P, F/P)	; P, F/P)	1-3-14	o,	A	Q	E	1 13/3	2	π	\ <u>\</u>			\$~~()	
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ighed 6/ (Signature/Print):	Date (YY/MM/DD)	(M/DD):		Тіте (24:00);	ö		18 (1) 18 (1) 18 (1)	High Allacett	9 9 9	ř v		Custody Seal	Temperature	<u>2</u>

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Maxxam Analytics International Corporation o/a Maxxam Analytics

Stranger of 15

Headspace and/or Sediment may be present, please

of Jars Used & Not

present

4,35

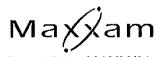
AB FCD-00218 Rev4 2010/05

proceed with analysis

Special Instructions:

Relinguished By (Sign)ature/Print)

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O'CONNOR ASSOCIATES ENVIRONMENTAL

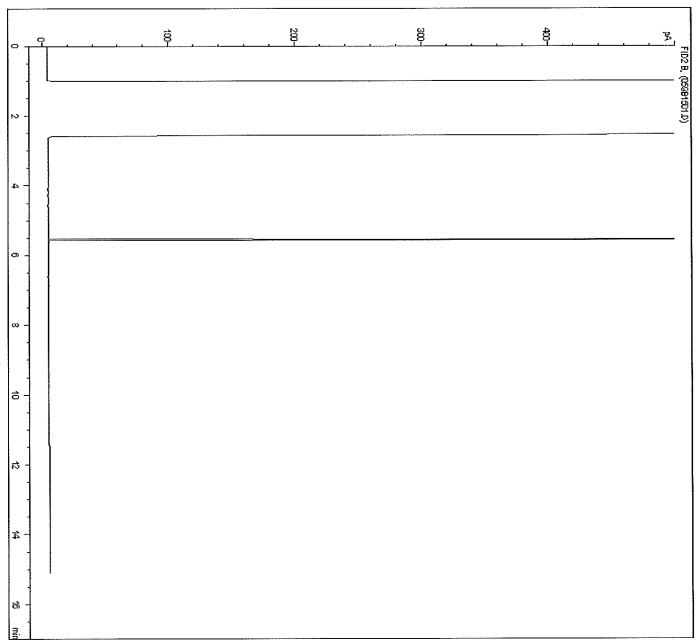
Client Project #: 10-1177

Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-19

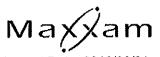
CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0620B\GNA0620B 2012-06-20 15-21-39\059B1501.D Sample Name: DR8185-02



*** End of Report ***

Instrument 1 2012/06/21 10:50:17 AM 6890NA GG3



O'CONNOR ASSOCIATES ENVIRONMENTAL

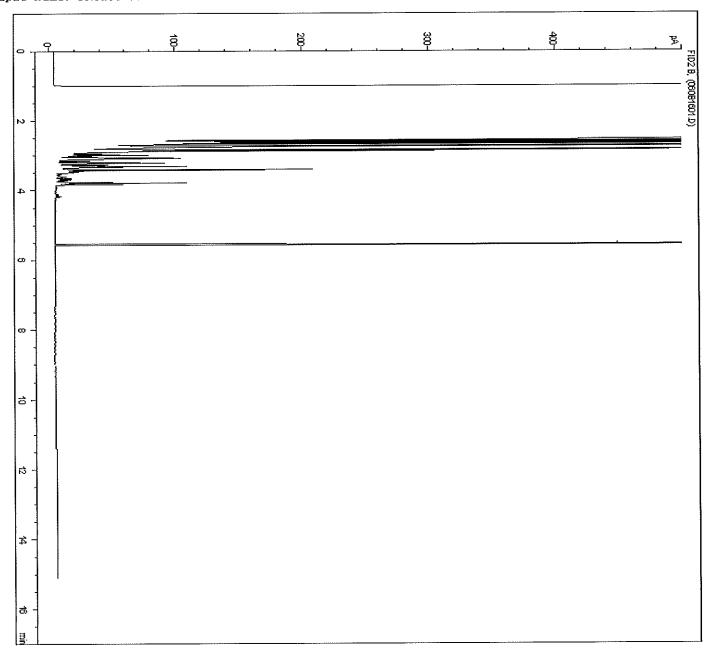
Client Project #: 10-1177

Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-20

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

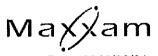
Data File C:\CHEM32\1\DATA\GNA0620B\GNA0620B 2012-06-20 15-21-39\060B1601.D Sample Name: DR8186-02



*** End of Report ***

Instrument 1 2012/06/21 10:50:19 AM 6890NA GG3

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

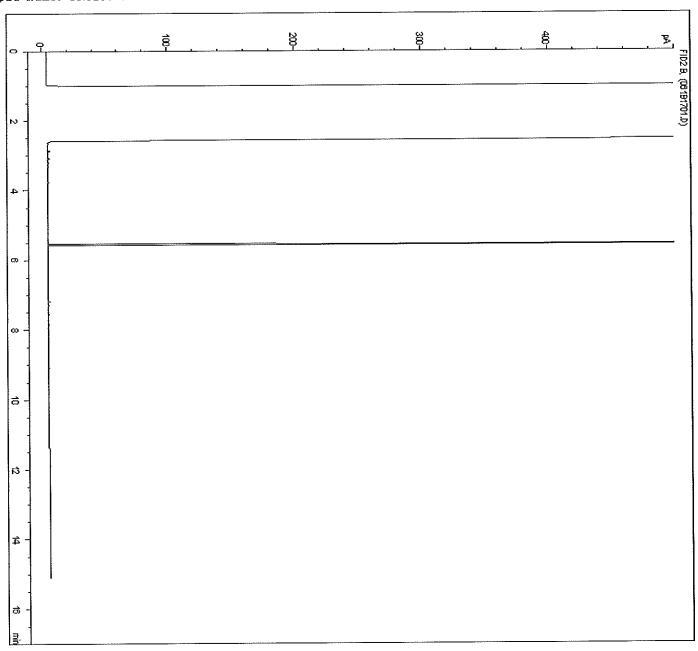
Client Project #: 10-1177

Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-21

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

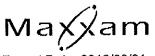
Data File C:\CHEM32\1\DATA\GNA0620B\GNA0620B 2012-06-20 15-21-39\061B1701.D Sample Name: DR8187-02



*** End of Report ***

Instrument 1 2012/06/21 10:50:21 AM 6890NA GG3

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O'CONNOR ASSOCIATES ENVIRONMENTAL

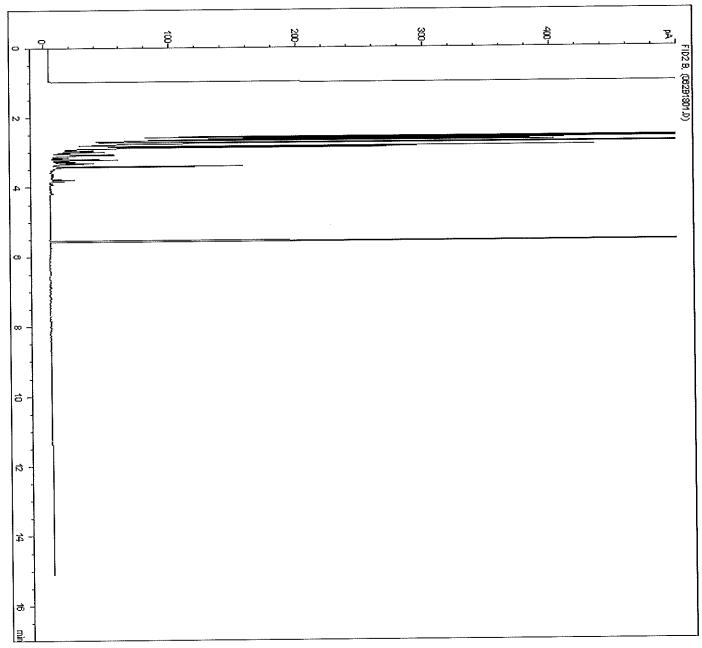
Client Project #: 10-1177

Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-24

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

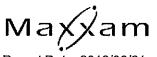
Data File C:\CHEM32\1\DATA\GNA0620B\GNA0620B 2012-06-20 15-21-39\062B1801.D Sample Name: DR8188-02



*** End of Report ***

Instrument 1 2012/06/21 10:50:23 AM 6890NA GG3

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O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

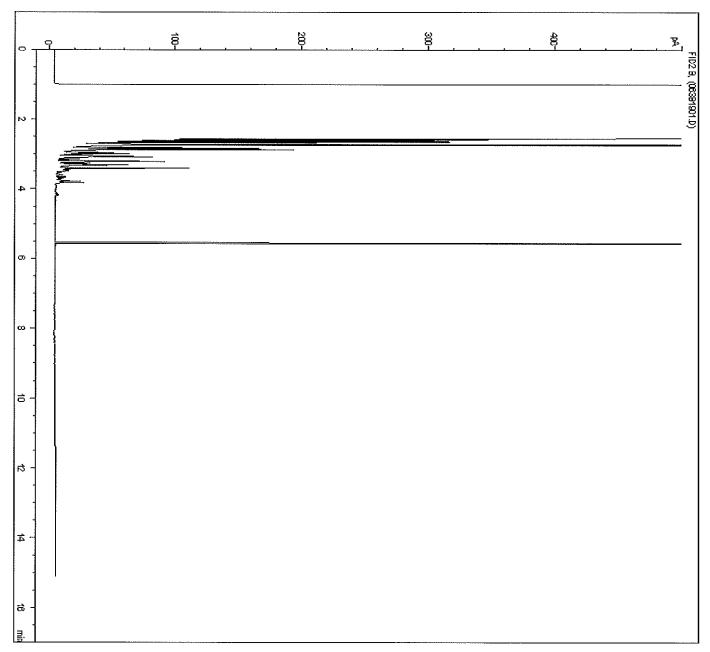
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-25

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0620B\GNA0620B 2012-06-20 15-21-39\063B1901.D

Sample Name: DR8189-02



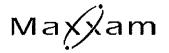
*** End of Report ***

Instrument 1 2012/06/21 10:50:25 AM 6890NA GG3

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons		-		Sampling Date: 2	2012/06/13
Location: 208 St. Anne's	Road, Winnipeg	g, <i>MB</i>		Laboratory : A	Maxxam Analytics Inc.
Consultant Project Number: 10	0-1177.100			Sample Subn	nission Number: <u>B251209</u>
Are All Laboratory QC Samples Wi	thin Acceptance	Criteria (Yes, No,	Not Applicable)?	
	Yes	No	NA		Comments
Instrument Surrogate Recovery	X			All lab QC met accepto	nnce criteria.
Extraction Surrogate Recovery	X				
Method Blank Concentration	X				
Matrix Duplicate RPD	X			*	
Matrix Spike Recovery	X				
Lab Control Sample Recovery			X		
Are All Field QC Samples Within A	Alert Limits (Yes	, No, Not	Applicab	le)?	
	Yes	No	NA		Comments
Field Blank Concentration			X	No field QC were subn	nitted.
Trip Blank Concentration	i		X		
Field Duplicate RPD			X		
Has CoA been signed off (Yes/No) Has lab warranted all tests were in the Has lab warranted all tests were and Were all samples analyzed within hall volatiles samples methanol extra Chain of Custody completed and Were sample temperatures acceptable.	statistical control alyzed following old times (Yes/N acted, if required signed (Yes/No)	SOP's in (No)?: I, within 4)?:	CoA (Ye	s, No or N/A)?: Yes, No or N/A)?:	Yes
Was a Data Quality Waiver (DQW)	issued (Yes, No	or N/A)?	?:		No
Date Issued: _				Date of Response:	
Is data considered to be reliable (Y If answer is "No", describe and pro				Yes	
Data Reviewed by (Print): 2 Review Date: 2 Revision Date (if applicable):	2013/02/21				ed by (Signature):



Your Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003335

Attention: Adam Wlckman

O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2012/06/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B251213 Received: 2012/06/15, 8:25

Sample Matrix: Water # Samples Received: 5

		Date	Date	
Analyses	Quantity	Extracted	Analyzed Laboratory Method	Analytical Method
BTEX/F1 in Water by HS GC/MS	4	N/A	2012/06/20 AB SOP-00039	CCME, EPA 8260C
BTEX/F1 in Water by HS GC/MS	1	N/A	2012/06/21 AB SOP-00039	CCME, EPA 8260C
CCME Hydrocarbons in Water (F2; C10-C16)	5	2012/06/20	2012/06/20 AB SOP-00040	EPA3510/CCME PHCCWS
•			AB SOP-00037	
Glycols in Water by GC/FID (1)	1	N/A	2012/06/22 CAL SOP-00093	EPA 8015 D
Elements by ICP - Dissolved	1	N/A	2012/06/21 AB SOP-00042	EPA 200.7
Elements by ICPMS - Dissolved	1	N/A	2012/06/19 AB SOP-00043	EPA 200.8
Benzojajpyrene Equivalency (1)	1	N/A	2012/06/20 AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons (1,2)	1	2012/06/19	2012/06/20 AB SOP-00003	EPA 3510C/8270D
			AB SOP-00037	
Lead (Dissolved)	4	N/A	2012/06/21 AB SOP-00043	EPA 200.8
Volatile Organic Compounds in Water	5	N/A	2012/06/19 EENVSOP-00021	EPA SW846, 8260C

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

(1) This test was performed by Maxxam Calgary Environmental

(2) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

Encryption Key

Desirae Hopkinson
22 Jun 2012 16:35:43 -06:00

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

Desirae Hopkinson, Project Manager Email: DHopkinson@maxxam.ca Phone# (780) 577-7104

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



Client Project #: 10-1177 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: JJ

AT1 BTEX AND F1-F2 (WATER)

Maxxam ID		DR8214	DR8215	DR8216	DR8217		
Sampling Date		2012/06/13	2012/06/13	2012/06/13	2012/06/13		
]	14:15	14:30	14:45	12:00		
COC Number		S003335	S003335	S003335	S003335		
	UNITS	BH-26	BH-27	BH-28	BH-29	RDL	QC Batch
Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	5.6	<0.10	<0.10	0,10	5932241
Volatiles							
Benzene	ug/L	<0.40	16	<0.40	<0.40	0.40	5932258
Toluene	ug/L	<0.40	1.6	<0.40	<0.40	0.40	5932258
Ethylbenzene	ug/L	<0.40	99	<0.40	<0.40	0.40	5932258
o-Xylene	ug/L	<0.40	11	<0.40	<0.40	0.40	5932258
m & p-Xylene	ug/L	<0.80	850	<0.80	<0.80	0.80	5932258
Xylenes (Total)	ug/L	<0.80	860	<0.80	<0.80	0.80	5932258
F1 (C6-C10) - BTEX	ug/L	<100	8100	<100	<100	100	5932258
(C6-C10)	ug/L	<100	9100	<100	<100	100	5932258
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	100	96	91	92	N/A	5932258
4-BROMOFLUOROBENZENE (sur.)	%	97	100	99	99	N/A	5932258
D4-1,2-DICHLOROETHANE (sur.)	%	104	118	125	121	N/A	5932258
O-TERPHENYL (sur.)	%	108	108	101	102	N/A	5932241

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: JJ

AT1 BTEX AND F1-F2 (WATER)

Maxxam ID		DR8218		
Sampling Date		2012/06/13		
		12:15		
COC Number		\$003335	4	ļI
	UNITS	ВН9	RDL	QC Batch
Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	5932241
Volatiles				
Benzene	ug/L	<0.40	0.40	5932258
Toluene	ug/L	<0.40	0.40	5932258
Ethylbenzene	ug/L	<0.40	0.40	5932258
o-Xylene	ug/L	<0.40	0.40	5932258
m & p-Xylene	ug/L	<0.80	0.80	5932258
Xylenes (Total)	ug/L	<0.80	0.80	5932258
F1 (C6-C10) - BTEX	ug/L	<100	100	5932258
(C6-C10)	ug/L	<100	100	5932258
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	93	N/A	5932258
4-BROMOFLUOROBENZENE (sur.)	%	98	N/A	5932258
D4-1,2-DICHLOROETHANE (sur.)	%	120	N/A	5932258
O-TERPHENYL (sur.)	%	100	N/A	5932241
N/A = Not Applicable RDL = Reportable Detection Limit				



Client Project #: 10-1177
Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB
Sampler Initials: JJ

GLYCOLS BY GC-FID (WATER)

	UNITS	BH-29	RDL	QC Batch
COC Number		S003335		T
, -		12:00		
Sampling Date		2012/06/13		
Maxxam ID		DR8217		

Glycols			-	
Ethylene Glycol	mg/L	<10	10	5941564
Propylene Glycol	mg/L	<10	10	5941564
Surrogate Recovery (%)				
Methyl Sulfone (sur.)	%	76	N/A	5941564

N/A = Not Applicable RDL = Reportable Detection Limit

Client Project #: 10-1177 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: JJ

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		DR8217		T
Sampling Date		2012/06/13		
		12:00		
COC Number		S003335		
	UNITS	BH-29	RDL	QC Batch
Polycyclic Aromatics				
Benzo[a]pyrene equivalency	ug/L	<0.010	0.010	5928280
	-	-0.40	0.40	5022200

ug/L	<0.010	0.010	5928280
ug/L	<0.10	0.10	5933288
ug/L	<0.010	0.010	5933288
ug/L	<0.0085	0.0085	5933288
ug/L	<0.0075	0.0075	5933288
ug/L	<0.040	0.040	5933288
ug/L	<0.050	0.050	5933288
ug/L	<0.10	0.10	5933288
ug/L	<0.050	0.050	5933288
ug/L	<0.020	0.020	5933288
%	88	N/A	5933288
%	77	N/A	5933288
%	88	N/A	5933288
%	95	N/A	5933288
	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ug/L <0.10	ug/L <0.10

N/A = Not Applicable RDL = Reportable Detection Limit



Client Project #: 10-1177 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: JJ

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		DR8214	DR8215	DR8216	DR8217		
Sampling Date		2012/06/13	2012/06/13	2012/06/13	2012/06/13		
· · · · · · · · · · · · · · · · · · ·		14:15	14:30	14:45	12:00		
COC Number		S003335	\$003335	S003335	S003335		
	UNITS	BH-26	BH-27	BH-28	BH-29	RDL	QC Batch
Elements							
Dissolved Arsenic (As)	mg/L	N/A	N/A	N/A	0.0014	0.00020	5932301
Dissolved Barium (Ba)	mg/L	N/A	N/A	N/A	0.027	0.010	5938746
Dissolved Chromium (Cr)	mg/L	N/A	N/A	N/A	<0.010	0.010	5938746
Dissolved Copper (Cu)	mg/L	N/A	N/A	N/A	0.0048	0.00020	5932301
Dissolved Lead (Pb)	mg/L	N/A	N/A	N/A	0.00021	0.00020	5932301
Dissolved Zinc (Zn)	mg/L	N/A	N/A	N/A	0.010	0.0030	5932301
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	<0.00020	N/A	0.00020	5936548

	UNITS	BH9	RDL	QC Batch
COC Number		S003335		
		12:15		
Sampling Date		2012/06/13		
Maxxam ID		DR8218		

Elements							
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	5936548			
RDL = Reportable Detection Limit							



Client Project #: 10-1177 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: JJ

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID	1	DR8214	DR8214	DR8215	DR8216		
Sampling Date		2012/06/13	2012/06/13	2012/06/13	2012/06/13	1	
Camping Date		14:15	14:15	14:30	14:45		
COC Number		S003335	S003335	S003335	S003335		
	UNITS	BH-26	BH-26 Lab-Dup	BH-27	BH-28	RDL	QC Batch
Volatiles							
1,2-dichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5932156
1,2-dibromoethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5932156
Surrogate Recovery (%)					į		
4-BROMOFLUOROBENZENE (sur.)	%	105	116	109	104	N/A	5932156
D4-1,2-DICHLOROETHANE (sur.)	%	91	101	88	101	N/A	5932156
D8-TOLUENE (sur.)	%	97	93	102	90	N/A	5932156

N/A = Not Applicable
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Maxxam ID		DR8217	DR8218		
Sampling Date		2012/06/13	2012/06/13		
· ·		12:00	12:15		
COC Number		S003335	S003335		
	UNITS	BH-29	BH9	RDL	QC Batch
Volatiles					
1,2-dichloroethane	ug/L	<0.50	<0.50	0,50	5932156
1,2-dibromoethane	ug/L	<0.50	<0.50	0.50	5932156
Surrogate Recovery (%)					
4-BROMOFLUOROBENZENE (sur.)	%	106	118	N/A	5932156
D4-1,2-DICHLOROETHANE (sur.)	%	99	105	N/A	5932156
D8-TOLUENE (sur.)	%	106	97	N/A	5932156



Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: JJ

Package 1 7.3°C

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

General Comments

Results relate only to the Items tested.



Attention: Adam Wickman Client Project #: 10-1177

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: EB251213

QA/QC			Date				
Batch		_	Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5932156 KE4	Matrix Spike	4 DECMOS HODODENIENE ()	0040/0040		405	•	3 0 400
	[DR8215-02]	4-BROMOFLUOROBENZENE (sur.)	2012/06/19		107	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/19		97	%	70 - 130
		D8-TOLUENE (sur.)	2012/06/19		84	%	70 - 130
		1,2-dichloroethane	2012/06/19		96	%	70 - 130
		1,2-dibromoethane	2012/06/19		75	%	70 - 130
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/06/19		113	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/19		100	%	70 - 130
		D8-TOLUENE (sur.)	2012/06/19		96	%	70 - 130
		1,2-dichloroethane	2012/06/19		90	%	70 - 130
		1,2-dibromoethane	2012/06/19		80	%	70 - 130
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/06/19		107	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/19		88	%	70 - 130
		D8-TOLUENE (sur.)	2012/06/19		97	%	70 - 130
		1,2-dichloroethane	2012/06/19	< 0.50		ug/L	
		1,2-dibromoethane	2012/06/19	< 0.50		ug/L	
	RPD [DR8214-02]	1,2-dichloroethane	2012/06/19	NC		%	40
		1,2-dibromoethane	2012/06/19	NC		%	40
5932241 PK4	Matrix Spike	O-TERPHENYL (sur.)	2012/06/20		100	%	50 - 130
	mann spine	F2 (C10-C16 Hydrocarbons)	2012/06/20		98	%	70 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/06/20		107	%	50 - 130
	opino Biann	F2 (C10-C16 Hydrocarbons)	2012/06/20		113	%	70 - 130
	Method Blank	O-TERPHENYL (sur.)	2012/06/20		104	%	50 - 130
	Motifod Blank	F2 (C10-C16 Hydrocarbons)	2012/06/20	<0.10	107	mg/L	00 - 100
	RPD	F2 (C10-C16 Hydrocarbons)	2012/06/20	NC		**************************************	40
5932258 RPA	Matrix Spike	1,4-Difluorobenzene (sur.)	2012/06/20	NC	99	%	70 - 130
OBUZZUU INI A	Manix Obive				96	%	
		4-BROMOFLUOROBENZENE (sur.)	2012/06/20				70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/20		103	%	70 - 130
		Benzene	2012/06/20		106	%	70 - 130
		Toluene	2012/06/20		103	%	70 - 130
		Ethylbenzene	2012/06/20		101	%	70 - 130
		o-Xylene	2012/06/20		98	%	70 - 130
		m & p-Xylene	2012/06/20		99	%	70 - 130
		(C6-C10)	2012/06/20		114	%	70 - 130
	Spiked Blank	1,4-Difluorobenzene (sur.)	2012/06/20		99	%	70 - 130
Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/06/20		101	%	70 - 130	
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/20		103	%	70 - 130
		Benzene	2012/06/20		104	%	70 - 130
		Toluene	2012/06/20		103	%	70 - 130
		Ethylbenzene	2012/06/20		100	%	70 - 130
		o-Xylene	2012/06/20		99	%	70 - 130
		m & p-Xylene	2012/06/20		101	%	70 - 130
		(C6-C10)	2012/06/20		126	%	70 - 130
	Method Blank	1,4-Difluorobenzene (sur.)	2012/06/20		100	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/06/20		96	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/20		105	%	70 - 130
		Benzene	2012/06/20	< 0.40		ug/L	
		Toluene	2012/06/20	< 0.40		ug/L	
		Ethylbenzene	2012/06/20	<0.40		ug/L	
		o-Xylene	2012/06/20	<0.40		ug/L	
		m & p-Xylene	2012/06/20	<0.80		ug/L	
		Xylenes (Total)	2012/06/20	<0.80		ug/L	
		F1 (C6-C10) - BTEX	2012/06/20	<100		ug/L	
		(C6-C10)	2012/06/20	<100			
	RPD	Benzene	2012/06/20	NC		ug/L %	40
		OCHACHE	20 (2/00/20	NU		70	41



Attention: Adam Wickman Client Project #: 10-1177

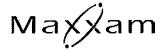
P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: EB251213

QA/QC			Date Analyzed				
Batch	OC Tuno	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limi
Num Init 932258 RPA	QC Type RPD	Parameter Toluene	2012/06/20	NC	recovery	%	QC LIII
332230 NFA	VED	Ethylbenzene	2012/06/20	NC		%	4
		o-Xylene	2012/06/20	NC		%	4
		m & p-Xylene	2012/06/20	NC		%	4
		Xylenes (Total)	2012/06/20	NC		%	
932301 WAU	Matrix Snika	Dissolved Arsenic (As)	2012/06/19	110	92	%	80 - 12
1902001 WAO	Matrix Opine	Dissolved Chromium (Cr)	2012/06/19		89	%	80 - 12
		Dissolved Copper (Cu)	2012/06/19		84	%	80 - 12
		Dissolved Copper (Cu) Dissolved Lead (Pb)	2012/06/19		96	%	80 - 1
		Dissolved Zinc (Zn)	2012/06/19		102	%	80 - 1
	Spiked Blank	Dissolved Arsenic (As)	2012/06/19		97	%	80 - 1
	Spiked Dialik	Dissolved Chromium (Cr)	2012/06/19		92	%	80 - 1
			2012/06/19		90	%	80 - 1
		Dissolved Copper (Cu)	2012/06/19		103	%	80 - 1
		Dissolved Lead (Pb)	2012/06/19		99	%	80 - 1
	Made of Displa	Dissolved Zinc (Zn)		<0.00020	99	mg/L	00 - 1
	Method Blank	Dissolved Arsenic (As)	2012/06/19			-	
		Dissolved Chromium (Cr)	2012/06/19	<0.0010		mg/L	
		Dissolved Copper (Cu)	2012/06/19	<0.00020		mg/L	
		Dissolved Lead (Pb)	2012/06/19	<0.00020		mg/L	
		Dissolved Zinc (Zn)	2012/06/19	<0.0030		mg/L	
	RPD	Dissolved Arsenlc (As)	2012/06/19	NC		%	
		Dissolved Chromium (Cr)	2012/06/19	NC		%	
		Dissolved Copper (Cu)	2012/06/19	NC		%	
		Dissolved Lead (Pb)	2012/06/19	NC		%	
		Dissolved Zinc (Zn)	2012/06/19	NC		%	
933288 SJ1	Matrix Spike	D10-ANTHRACENE (sur.)	2012/06/19		74	%	50 -
		D12-BENZO(A)PYRENE (sur.)	2012/06/19		71	%	50 - 1
		D8-ACENAPHTHYLENE (sur.)	2012/06/19		71	%	50 - 1
		TERPHENYL-D14 (sur.)	2012/06/19		80	%	50 -
		Acenaphthene	2012/06/19		69	%	50 -
		Anthracene	2012/06/19		64	%	50 -
		Benzo(a)anthracene	2012/06/19		72	%	50 -
		Benzo(a)pyrene	2012/06/19		68	%	50 -
		Fluoranthene	2012/06/19		73	%	50 -
		Fluorene	2012/06/19		72	%	50 -
		Naphthalene	2012/06/19		66	%	50 -
		Phenanthrene	2012/06/19		70	%	50 -
		Pyrene	2012/06/19		70	%	50 -
	Spiked Blank	D10-ANTHRACENE (sur.)	2012/06/19		82	%	50 -
	•	D12-BENZO(A)PYRENE (sur.)	2012/06/19		79	%	50 -
		D8-ACENAPHTHYLENE (sur.)	2012/06/19		79	%	50 -
		TERPHENYL-D14 (sur.)	2012/06/19		89	%	50 -
		Acenaphthene	2012/06/19		81	%	50 -
		Anthracene	2012/06/19		75	%	50 -
		Benzo(a)anthracene	2012/06/19		82	%	50 -
		Benzo(a)pyrene	2012/06/19		80	%	50 -
		Fluoranthene	2012/06/19		85	%	50 -
		Fluorene	2012/06/19		83	%	50 -
		Naphthalene	2012/06/19		73	%	50 -
		Phenanthrene	2012/06/19		81	%	50 -
		Pyrene	2012/06/19		81	%	50 -
	Method Blank	D10-ANTHRACENE (sur.)	2012/06/19		76	%	50 -
	MIRKING DIBLIK	D12-BENZO(A)PYRENE (sur.)	2012/06/19		66	%	50 -
			2012/06/19		71	%	50 -
		D8-ACENAPHTHYLENE (sur.)	2012/06/19		81	%	50 - 50 -
		TERPHENYL-D14 (sur.)	20 12/00/18		UI	10	00-



Attention: Adam Wickman Client Project #: 10-1177

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: EB251213

QA/QC		The advance of the second of t	Date				
Batch			Analyzed		_		
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5933288 SJ1	Method Blank	Acenaphthene	2012/06/19	<0.10		ug/L	
		Anthracene	2012/06/19	<0.010		ug/L	
		Benzo(a)anthracene	2012/06/19	<0.0085		ug/L	
		Benzo(a)pyrene	2012/06/19	<0.0075		ug/L	
		Fluoranthene	2012/06/19	<0.040		ug/L	
		Fluorene	2012/06/19	<0.050		ug/L	
		Naphthalene	2012/06/19	<0.10		ug/L	
		Phenanthrene	2012/06/19	< 0.050		ug/L	
		Pyrene	2012/06/19	<0.020		ug/L	
	RPD	Acenaphthene	2012/06/19	NC		%	40
		Anthracene	2012/06/19	NC		%	40
		Benzo(a)anthracene	2012/06/19	NC		%	40
		Benzo(a)pyrene	2012/06/19	NC		%	40
		Fluoranthene	2012/06/19	NC		%	40
		Fluorene	2012/06/19	NC		%	40
		Naphthalene	2012/06/19	NC		%	40
		Phenanthrene	2012/06/19	NC		%	40
		Pyrene	2012/06/19	NC		%	40
5936548 SG8	Matrix Spike	Dissolved Lead (Pb)	2012/06/21		91	%	80 - 120
	Spiked Blank	Dissolved Lead (Pb)	2012/06/21		100	%	80 - 120
Ī	Method Blank	Dissolved Lead (Pb)	2012/06/21	<0.00020		mg/L	
	RPD	Dissolved Lead (Pb)	2012/06/21	NC		%	20
5938746 SV1	Matrix Spike	Dissolved Barium (Ba)	2012/06/21		98	%	80 - 120
	•	Dissolved Chromium (Cr)	2012/06/21		94	%	80 - 120
	Spiked Blank	Dissolved Barium (Ba)	2012/06/21		96	%	80 - 120
		Dissolved Chromium (Cr)	2012/06/21		94	%	80 - 120
	Method Blank	Dissolved Barium (Ba)	2012/06/21	< 0.010		mg/L	
		Dissolved Chromium (Cr)	2012/06/21	< 0.010		mg/L	
	RPD	Dissolved Barium (Ba)	2012/06/21	NC		%	20
5941564 JW0	Matrix Spike	Methyl Sulfone (sur.)	2012/06/22		96	%	70 - 130
	,	Ethylene Glycol	2012/06/22		110	%	70 - 130
		Propylene Glycol	2012/06/22		72	%	70 - 130
	Spiked Blank	Methyl Sulfone (sur.)	2012/06/22		109	%	70 - 130
	opinos Diami	Ethylene Glycol	2012/06/22		105	%	70 - 130
		Propylene Glycol	2012/06/22		95	%	70 - 130
	Method Blank	Methyl Sulfone (sur.)	2012/06/22		119	%	70 - 130
	oniou miailit	Ethylene Glycol	2012/06/22	<10		mg/L	
		Propylene Glycol	2012/06/22	<10		mg/L	
	RPD	Ethylene Glycol	2012/06/22	NC		%	40
	, , , ,	Propylene Glycol	2012/06/22	NC		%	40

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 of Maxxam Analytics Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780) 577-7100 Fax (780) 450-4187



Validation Signature Page

Maxxam Job #: B251213	
The analytical data and all QC contained in this report were rev	riewed and validated by the following individual(s).
Carol Gebhart, Senior Analyst	_
Daniel Reslan, Volatiles Supervisor	_
Karla Offord, Senior Analyst, Organics Department	_
Luba Shymushovska, Senior Analyst, Organic Department	_
Pui Hang Tam, Senior Analýst	_

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.

Maxxa

Toll from (80th 385-7247)

Tel free gard Accesses

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www.entranalydes.com	Renner Associates Env Inc.	Adam Wichman	7 Terracon Place, Winnipea	46 RST 463	~ 304-489-2964 NA	7+11-0	y Jarobsen		☐ RUSH (Contact lab to reserve)	□ 2 DAY		☐ SAME DAY	Date Required:	REGULAR (5 Days)	
	Company: 0.0	Contact: Acol	2 t		Contact #s: 🚉 🏈	Project ID: I C	Sampled By: UDJ				SEBVICE	REQUESTED:			

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	DOWNSTREAM 🔯	Site address: 208 St. Annes Rd	Site City/Prov: Winnipeg, UB	Outlet number: 63955	Monttoring (a) te / ta / ta / ta / circle	Senior Suncor Advisor:	Brian Holmes 🔲 Rick Lemoine	Other:		UPSTREAM	rsp#:	Site/Field :	AFE#;	RO# (if applicable):	Senior Suncor Advisor:	Mike Morden 🔲 Ben Parsons	Russall Browne 🔲 Phil Scalla	
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Ste CityProv: Winnipeg, UB Outlet number: 63955	Montoring (a) to 1 in 1 in 1 in 1 (Sircle one) Senior Suncor Advisor:	Rick Lemoine								:01:	Ben Parsons	Phil Scalla				1	Maxxam Job *: (スプース) [3]	Temperature	
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umber:	Montoring:(a) te / th / th . Senior Suncor Advisor:	olmes			EAM		d :		RO# (if applicable):	Senior Suncor Advisor:	orden	Russall Browne				ı	•		İ
Site City/Prov: Outlet number:	Menton Senior	Brian Holmes	Other:		UPSTREAM	LSD#:	Site/Field:	AFE#:	90 #OE	Senior	Mike Morden	Russell	Other:			LAB USE ONLY	Time:	8 5 	
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		Date/Time Sampled YYMM/IDD 24:00	(20)	γος (α	10	1.0 M	100/									Date (YY/MN/VDD):	51/90/21	Date (YY/MM/CDD)	
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RUSH (Contact lab to reserve) 2 DAY 1 DAY SAME DAY Date Required: REGULAR (5 Days)	**	Soil Soil	GW 120013 1415	GN 1206/13 1430	GN WOUNS LAFF	GIW 12/06/18 12/0	GW 12/06/15 1215				A-HARTESM				Please indicate Filtered, Preserved or Both (F. P. F/P)		•		
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Headspace and for Sealment proceed with analysis

Special instructions:



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

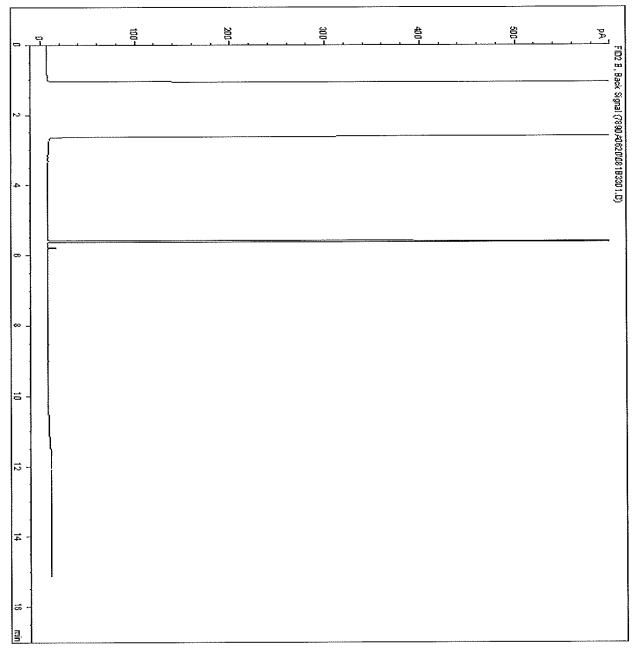
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-26

CCME Hydrocarbons In Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\7890A0620\081B3301.D

Sample Name: DR8214



*** End of Report ***

7890A GC 2012/06/21 10:26:37 AM 7890A PK4

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

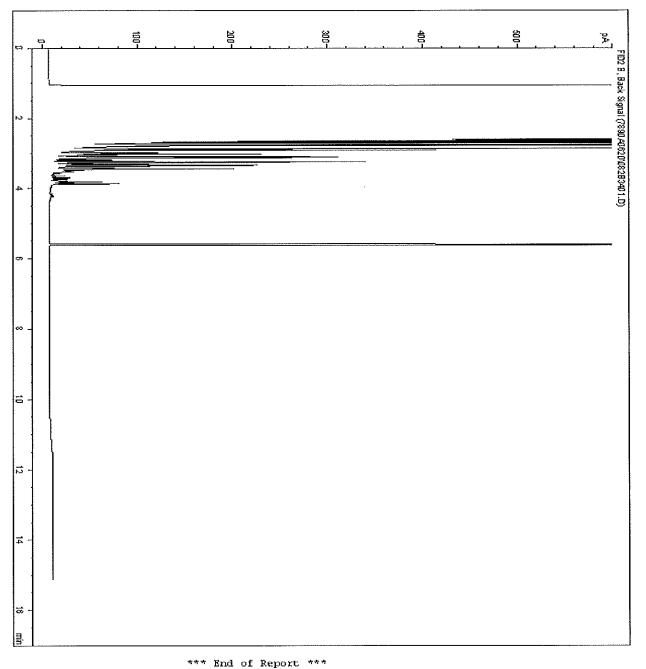
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-27

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\7890A0620\082B3401.D

Sample Name: DR8215



7890A GC 2012/06/21 10:26:40 AM 7890A PK4

Page 1 of 3



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

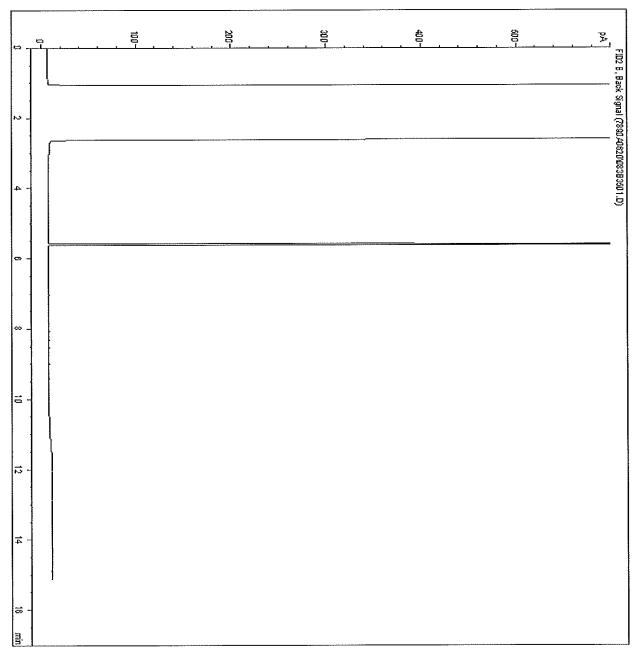
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-28

CCME Hydrocarbons In Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\7890A0620\083B3501.D

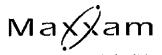
Sample Name: DR8216



*** End of Report ***

7890A GC 2012/06/21 10:26:42 AM 7890A PK4

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

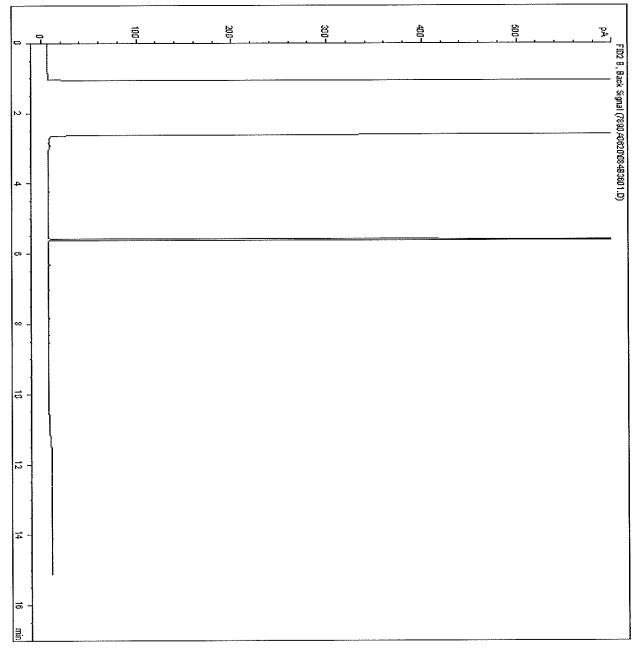
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-29

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\7890A0620\084B3601.D

Sample Name: DR8217



*** End of Report ***

7890A GC 2012/06/21 10:26:45 AM 7890A PK4

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

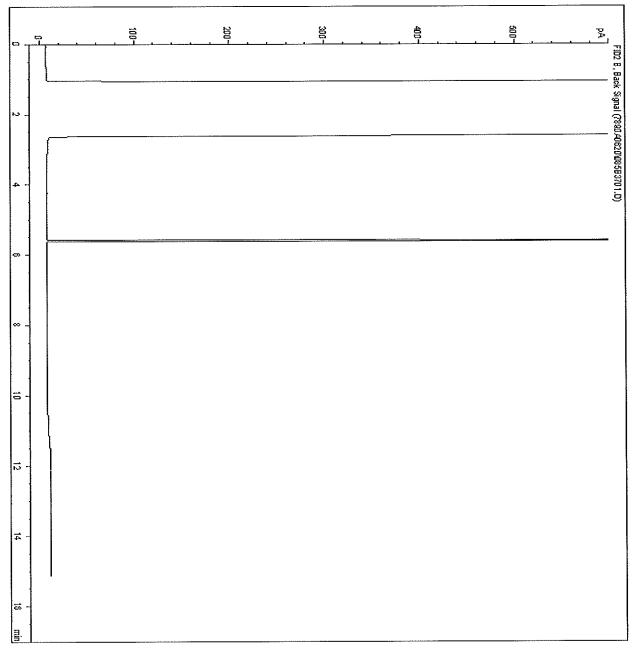
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH9

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\7890A0620\085B3701.D

Sample Name: DR8218



*** End of Report ***

7890A GC 2012/06/21 10:26:48 AM 7890A PK4

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons				Sampling Date: 2	2012/06/13
Location: 208 St. Anne's	s Road, Winni <u>p</u>	peg, MB		Laboratory : 1	Maxxam Analytics Inc.
Consultant Project Number: 10	0-1177.100			Sample Subn	nission Number: <u>B251213</u>
Are All Laboratory QC Samples Wi	ithin Acceptan	ce Criteria (Yes, No,	Not Applicable)?	
	Yes	No	NA		Comments
Instrument Surrogate Recovery	X	T	* 1	All lab QC met accepto	
Extraction Surrogate Recovery	X			5000	
Method Blank Concentration	X				
Matrix Duplicate RPD	X				
Matrix Spike Recovery	X				
Lab Control Sample Recovery			X		
Are All Field QC Samples Within A	Alert Limits (Y Yes	es, No, Not	NA		Comments
Field Blank Concentration			X	No field QC were subn	nitted.
Trip Blank Concentration			X		I
Field Duplicate RPD			X		
Has CoA been signed off (Yes/No) Has lab warranted all tests were in some Has lab warranted all tests were and Were all samples analyzed within hall volatiles samples methanol extra Is Chain of Custody completed and Were sample temperatures acceptable.	statistical contralyzed following times (Yes racted, if required signed (Yes/N	ng SOP's in s/No)?: red, within 4 No)?:	CoA (Yes	s, No or N/A)?: Yes, No or N/A)?:	Yes Yes Yes Yes Yes N/A Yes Yes
Was a Data Quality Waiver (DQW)) issued (Yes, 1	No or N/A)?	?:		No
Date Issued: _				Date of Response:	
Is data considered to be reliable (Your If answer is "No", describe and pro				Yes	
Data Reviewed by (Print): <u>A</u> Review Date: <u>2</u> Revision Date (if applicable): _	2013/02/21		: -		ed by (Signature):



Your Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003332

Attention: Adam Wickman O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2012/06/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B251220 Received: 2012/06/15, 8:25

Sample Matrix: Water # Samples Received: 7

		Date	Date	
Analyses	Quantity	Extracted	Analyzed Laboratory Method	Analytical Method
BTEX/F1 in Water by HS GC/MS	7	N/A	2012/06/20 AB SOP-00039	CCME, EPA 8260C
CCME Hydrocarbons in Water (F2; C10-C16)	5	2012/06/20	2012/06/20 AB SOP-00040	EPA3510/CCME PHCCWS
			AB SOP-00037	
Lead (Dissolved)	4	N/A	2012/06/21 AB SOP-00043	EPA 200.8
Volatile Organic Compounds in Water	4	N/A	2012/06/19 EENVSOP-00021	EPA SW846, 8260C

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

Encryption Key

Desirae Hopkinson
22 Jun 2012 14:33:23 -06:00

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

Desirae Hopkinson, Project Manager Email: DHopkinson@maxxam.ca Phone# (780) 577-7104

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.



Client Project #: 10-1177
Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB
Sampler Initials: JJ

AT1 BTEX AND F1-F2 (WATER)

Maxxam ID		DR8264	DR8265		DR8266	DR8267		
Sampling Date		2012/06/13	2012/06/13		2012/06/13	2012/06/13		
. ,		12:30	12:30		12:45	12:45		
COC Number		S003332	S003332		S003332	S003332		000
	UNITS	BH7	DUP-1	RDL	BH5	DUP-2	IKDL	QC Batch
Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	mg/L	4.3	3.1	0.10	2.1	2.1	0.10	5936531
Volatiles								
Benzene	ug/L	4800 (1)	4900 (1)	4.0	440	360	0.40	5933216
Toluene	ug/L	200	230	0.40	100	81	0.40	5933216
Ethylbenzene	ug/L	290	290	0.40	2000 (1)	1800 (1)	4.0	5933216
o-Xylene	ug/L	910	980	0.40	2600 (1)	2500 (1)	4.0	5933216
m & p-Xylene	ug/L	1400	1500	0.80	8000 (1)	7300 (1)	8.0	5933216
Xylenes (Total)	ug/L	2300	2400	0.80	11000 (1)	9800 (1)	8.0	5933216
F1 (C6-C10) - BTEX	ug/L	4000 (1)	6100 (1)	1000	8800 (1)	13000 (1)	1000	5933216
(C6-C10)	ug/L	12000 (1)	14000 (1)	1000	22000 (1)	25000 (1)	1000	5933216
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	94	94	N/A	94	86	N/A	5933216
4-BROMOFLUOROBENZENE (sur.)	%	100	99	N/A	98	103	N/A	5933216
D4-1,2-DICHLOROETHANE (sur.)	%	99	97	N/A	94	125	N/A	5933216
O-TERPHENYL (sur.)	%	93	97	N/A	97	89	N/A	5936531

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.



Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: JJ

AT1 BTEX AND F1-F2 (WATER)

Maxxam ID		DR8270		
Sampling Date		2012/06/13		
		11:45	_	
COC Number		S003332	<u> </u>	
	UNITS	BH6	RDL	QC Batch
			1	
Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	mg/L	1.1	0.10	5936531
Volatiles				
Benzene	ug/L	360	0.40	5933216
Toluene	ug/L	30	0.40	5933216
Ethylbenzene	ug/L	830	0.40	5933216
o-Xylene	ug/L	350	0.40	5933216
m & p-Xylene	ug/L	3300 (1)	8.0	5933216
Xylenes (Total)	ug/L	3700 (1)	8.0	5933216
F1 (C6-C10) - BTEX	ug/L	2500	100	5933216
(C6-C10)	ug/L	7400	100	5933216
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	93	N/A	5933216
4-BROMOFLUOROBENZENE (sur.)	%	100	N/A	5933216
D4-1,2-DICHLOROETHANE (sur.)	%	95	N/A	5933216
O-TERPHENYL (sur.)	%	95	N/A	5936531

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.



Report Date: 2012/06/22

O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: JJ

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		DR8264	DR8264	DR8265	DR8266	DR8267		
Sampling Date		2012/06/13	2012/06/13	2012/06/13	2012/06/13	2012/06/13		
l '		12:30	12:30	12:30	12:45	12:45		
COC Number		S003332	S003332	S003332	\$003332	S003332		
	UNITS	BH7	BH7 Lab-Dup	DUP-1	BH5	DUP-2	RDL	QC Batch

Elements								
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	<0.00020	0.00059	0.00049	0.00020	5942536

RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: JJ

VOLATILE ORGANICS BY GC-MS (WATER)

	DR8264	DR8265	DR8266	DR8267		
	2012/06/13	2012/06/13	2012/06/13	2012/06/13		
	12:30	12:30	12:45	12:45		
	S003332	S003332	S003332	S003332		
UNITS	BH7	DUP-1	BH5	DUP-2	RDL	QC Batch
					T	
ug/L	24	27	1.9	1.5	0.50	5932156
ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5932156
·						
%	116	130	118	123	N/A	5932156
%	87	89	84	88	N/A	5932156
%	94	98	88	99	N/A	5932156
	ug/L ug/L %	2012/06/13 12:30 \$003332 UNITS BH7 ug/L 24 ug/L <0.50 % 116 % 87	2012/06/13 2012/06/13 12:30 12:30 S003332 S003332 UNITS BH7 DUP-1 Ug/L 24 27 Ug/L <0.50 <0.50 % 116 130 % 87 89	2012/06/13 12:30 2012/06/13 12:30 2012/06/13 12:45 S003332 S003332 S003332 UNITS BH7 DUP-1 BH5 ug/L 24 27 1,9 ug/L <0.50	2012/06/13 12:30 2012/06/13 12:30 2012/06/13 12:45 2012/06/13 12:45 S003332 S003332 S003332 S003332 UNITS BH7 DUP-1 BH5 DUP-2 ug/L 24 27 1.9 1.5 ug/L <0.50	2012/06/13 2012/06/13 2012/06/13 12:30 12:45 12:45 S003332 S003332 S003332 S003332 UNITS BH7 DUP-1 BH5 DUP-2 RDL

	DR8268	DR8269		
	2012/06/13	2012/06/13	1	
	15:00	16:00		
	S003332	S003332		
UNITS	FIELD BLANK-1	TRIP BLANK-1	RDL	QC Batch
ug/L	<0.40	<0.40	0.40	5933216
ug/L	<0.40	<0.40	0.40	5933216
ug/L	<0.40	<0.40	0.40	5933216
ug/L	<0.40	<0.40	0.40	5933216
ug/L	<0.80	<0.80	0.80	5933216
ug/L	<0.80	<0.80	0.80	5933216
ug/L	<100	<100	100	5933216
ug/L	<100	<100	100	5933216
%	97	100	N/A	5933216
%	100	99	N/A	5933216
%	102	109	N/A	5933216
	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	2012/06/13 15:00 \$003332 UNITS FIELD BLANK-1 Ug/L <0.40 Ug/L <0.40 Ug/L <0.40 Ug/L <0.80 Ug/L <100 Ug/L <100 Ug/L <100 Ug/L <100	2012/06/13 2012/06/13 15:00 16:00 S003332 S003332 S003332 UNITS FIELD BLANK-1 TRIP BLANK-1 Ug/L	2012/06/13 2012/06/13 15:00 16:00 S003332 S003332 UNITS FIELD BLANK-1 TRIP BLANK-1 RDL Ug/L <0.40 <0.40 0.40 Ug/L <0.40 <0.40 0.40 Ug/L <0.40 <0.40 0.40 Ug/L <0.40 <0.40 0.40 Ug/L <0.40 <0.40 0.40 Ug/L <0.80 <0.80 0.80 Ug/L <100 <100 100 Ug/L <100 <100 100 White in the state of t



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: JJ

1.3°C

Package 1 1.3°C

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

General Comments

Results relate only to the items tested.



Attention: Adam Wickman Client Project #: 10-1177

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: EB251220

QA/QC			Date	·			
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5932156 KE4	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2012/06/19		107	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/19		97	%	70 - 130
		D8-TOLUENE (sur.)	2012/06/19		84	%	70 - 130
		1,2-dichloroethane	2012/06/19		96	%	70 - 130
		1,2-dibromoethane	2012/06/19		75	%	70 - 130
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/06/19		113	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/19		100	%	70 - 130
		D8-TOLUENE (sur.)	2012/06/19		96	%	70 - 130
		1,2-dichloroethane	2012/06/19		90	%	70 - 130
		1,2-dibromoethane	2012/06/19		80	%	70 - 130
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/06/19		107	%	70 - 130
	Micalog Dialik	D4-1,2-DICHLOROETHANE (sur.)	2012/06/19		88	%	70 - 130
		D8-TOLUENE (sur.)	2012/06/19		97	%	70 - 130
		1,2-dichloroethane	2012/06/19	<0.50	31	ug/L	70 - 100
		•		<0.50			
	RPD	1,2-dibromoethane	2012/06/19			ug/L %	40
	KPD	1,2-dichloroethane	2012/06/19	NC			
F000040 1/T	Matthe Outline	1,2-dibromoethane	2012/06/19	NC	0.4	%	40
5933216 YT	Matrix Spike	1,4-Difluorobenzene (sur.)	2012/06/20		94	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/06/20		101	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/20		99	%	70 - 130
		Benzene	2012/06/20		91	%	70 - 130
		Toluene	2012/06/20		92	%	70 - 130
		Ethylbenzene	2012/06/20		96	%	70 - 130
		o-Xylene	2012/06/20		94	%	70 - 130
		m & p-Xylene	2012/06/20		95	%	70 - 130
		(C6-C10)	2012/06/20		96	%	70 - 130
	Splked Blank	1,4-Difluorobenzene (sur.)	2012/06/20		96	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/06/20		101	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/20		99	%	70 - 130
		Benzene	2012/06/20		91	%	70 - 130
		Toluene	2012/06/20		91	%	70 - 130
		Ethylbenzene	2012/06/20		96	%	70 - 130
		o-Xylene	2012/06/20		96	%	70 - 130
		m & p-Xylene	2012/06/20		98	%	70 - 130
		(C6-C10)	2012/06/20		105	%	70 - 130
	Method Blank	1,4-Difluorobenzene (sur.)	2012/06/20		99	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/06/20		100	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/06/20		102	%	70 - 130
		Benzene	2012/06/20	<0.40	102	ug/L	70 100
		Toluene	2012/06/20	< 0.40		ug/L	
		Ethylbenzene	2012/06/20	<0.40		ug/L	
		o-Xylene	2012/06/20	<0.40		ug/L	
						ug/L	
		m & p-Xylene	2012/06/20	<0.80		ug/L	
		Xylenes (Total)	2012/06/20	<0.80		ug/L	
		F1 (C6-C10) - BTEX	2012/06/20	<100		ug/L	
		(C6-C10)	2012/06/20	<100		ug/L	4.0
	RPD	Benzene	2012/06/20	NC		%	40
		Toluene	2012/06/20	NC		%	40
		Ethylbenzene	2012/06/20	NC		%	40
		o-Xylene	2012/06/20	NC		%	41
		m & p-Xylene	2012/06/20	NC		%	4
		Xylenes (Total)	2012/06/20	NC		%	40
		F1 (C6-C10) - BTEX	2012/06/20	NC		%	40
			0040406400	NO		%	4.0
		(C6-C10)	2012/06/20	NC		70	40



Attention: Adam Wickman Client Project #: 10-1177

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: EB251220

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5936531 GG3	Matrix Spike	F2 (C10-C16 Hydrocarbons)	2012/06/20	*****	104	%	70 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/06/20		99	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/06/20		101	%	70 - 130
	Method Blank	O-TERPHENYL (sur.)	2012/06/20		105	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/06/20	< 0.10		mg/L	
	RPD	F2 (C10-C16 Hydrocarbons)	2012/06/20	NC		%	40
5942536 SG8	Matrix Spike						
	[DR8264-01]	Dissolved Lead (Pb)	2012/06/21		101	%	80 - 120
	Spiked Blank	Dissolved Lead (Pb)	2012/06/21		95	%	80 - 120
	Method Blank	Dissolved Lead (Pb)	2012/06/21	<0.00020		mg/L	
	RPD [DR8264-01]	Dissolved Lead (Pb)	2012/06/21	NC		<u>%</u>	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix 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 Edmonton: 9331 - 48th Street T68 2R4 Telephone(780)577-7100 Fax(780)450-4187



Validation Signature Page

Maxxam Job #: B251220	
The analytical data and all QC contained in this report were rev	iewed and validated by the following individual(s).
Carol Gebhart, Senior Analyst	
Daniel Reslan, Volatiles Supervisor	-
Karla Offord, Senior Analyst, Organics Department	-
The Del White	-
Pui Hang Tam, Senior Analýst	

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.

Maxxem

CHAIN OF CUSTODY	COTTO TO SUNCOR ENERGY	
Calgary 400 000 18 NE, 726 679 Pt. (450) 731-00-1, Foy (450) 736-2240, Telline: 1800, 206-7247	EDITIONED 1923 - AS STAND, THE DATA FIN. (1930, 455-4167 Tell transition) 455-4868 OF THE BERGY	www.maxaamahalics.com

8003332

Раде:

Common Heschotes fine Common Comm			Regulated Drinking Water		FRERGY		DOWNSTREAM		Site address: 208 St. Anno. Kd.	p policial with the property of the property o	931 r		2 e16	Mynitering (a) no / no / no / m / reindle enc.	ഠാ		Other:	8	G UPSTREAM □	q LSD#:	Ste/Field:	3 AFE#:	Я нож (if applicable):	Senior Suncor Advisor:	Mike Morden 🗀 Ben Parsons	Russell Browne Phil Scalia	Other:		40M/201	LAB USE ONLY	Date: Time: Maxxam Job #: 1225/830	Custody Tomparature
		ES COME 10	☐ Regulated [V,	Other Applysis	220	0	r W	W V	Y)(5! } }					メメメ					X						ļ		1 1 2 1 1	としてくるいなっ
Chonnon Associates Fine Inc Chonnon Associates Chonnon Associates Fine Inc Code	grans. Och						WATER		F Meti (i)	(FI-)	int int ing	Не СО:	1916)	Y F1-F W enli	(on (on	FICE Tota Ples		X			×	×	- S - PA						 	24:00):		Time (24:00):
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Itting Set: Adom Wickman Set: Adom Wickman Set: Adom Wickman Set: Adom Wickman Set: Double Contact lab to reserve) S								83[[5 0000	1360	ioj es.	143.01	908				12206/13	E1/20/C1	SI/AOIRI	12/00/13	12/06/13	12/06/13						F/P)	Date (YY/MM/DD);	12/06/11	Date (YY/MM/DD):
RECUIRED BLANK - 1 SERVICE OUESTED: Sample ID SHE SHE SHE SHE SHE SHE SHE SH	TA Env. In		L. Windiped	J	ı NA				act lab to reserve)		AY	3 d :	5 Days)		Kistaly 1		J. J. J. J. J. J. J. J. J. J. J. J. J. J	(A)	S. S. S. S. S. S. S. S. S. S. S. S. S. S	(A)	Other	Str.	30						red or Both (F. P.		ebsen	
Sample Contact and	Consulting MONNON ASSIN	1-	racon p	Free UB	704-480-03604	Project ID: 10-1147			RUSH (Conta	TEL APPARENT					strandes are fred for 60 colonial days after parable records. University	Sample ID	七村名 1	[_	SHE	ļ		,	17 B	 	o,	C	11	72	Please indicate Filtered, Preserv	Reinquebed By (Stondbre/Phnt):		Adnauczed By Kagnature/Prints:

Maxxam Analytics International Corporation of a Maxxam Analytics

s of Jurs Used & Not Supage 10 of 15

present, please

2

special Instructions: Scaliment may Headspace, and/or the

Special Instructions:

proceed with analysis

AR FCD-00218 Bovs 2010/05

970 CA 6770

3-1-0

<u>ဗ</u>

Temperature

Custody Seal



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

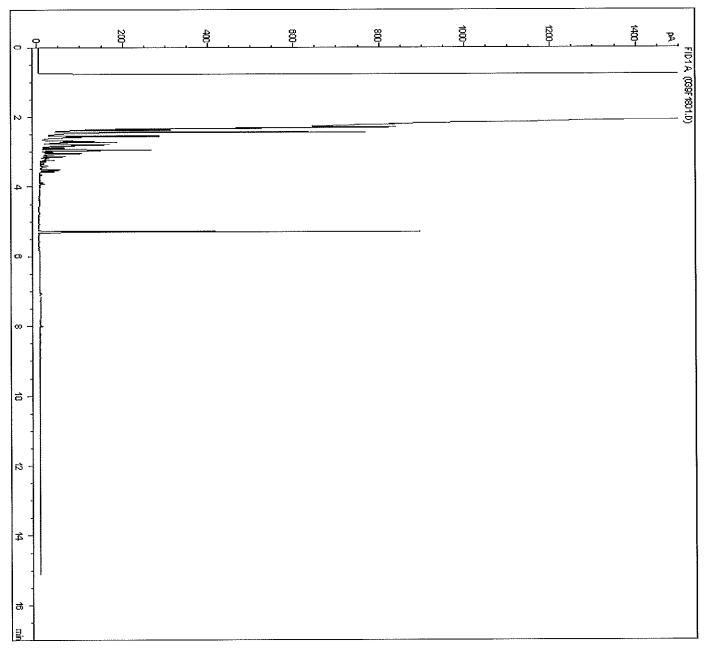
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH7

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0620B\GNA0620B 2012-06-20 15-21-39\039F1801.D

Sample Name: DR8264-02



*** End of Report ***

Instrument 1 2012/06/21 10:50:23 AM 6890NA GG3

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

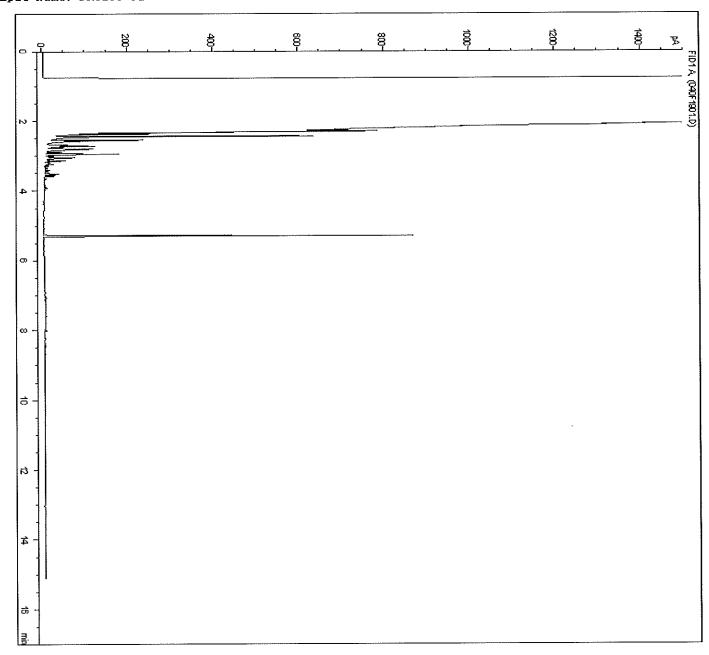
Client Project #: 10-1177

Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: DUP-1

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0620B\GNA0620B 2012-06-20 15-21-39\040F1901.D Sample Name: DR8265-02



*** End of Report ***

Instrument 1 2012/06/21 10:50:25 AM 6890NA GG3

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

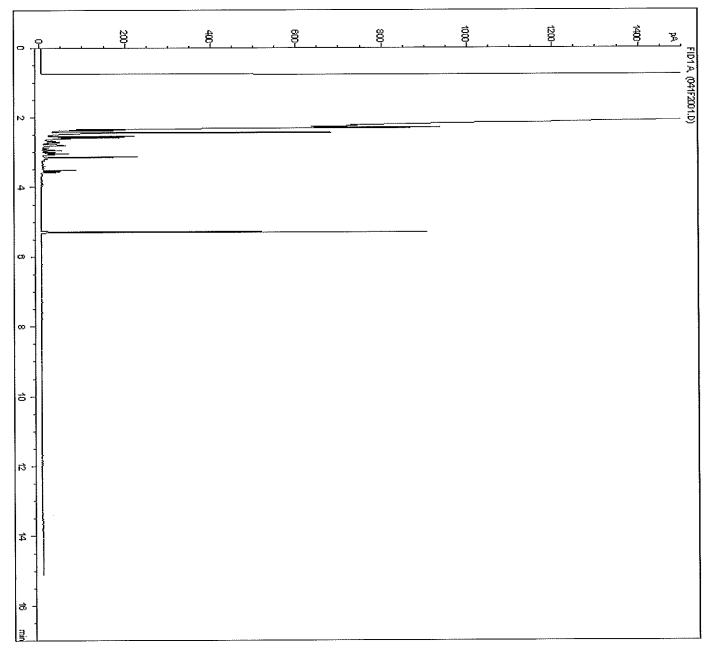
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH5

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0620B\GNA0620B 2012-06-20 15-21-39\041F2001.D

Sample Name: DR8266-02



*** End of Report ***

Instrument 1 2012/06/21 10:50:27 AM 6890NA GG3

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

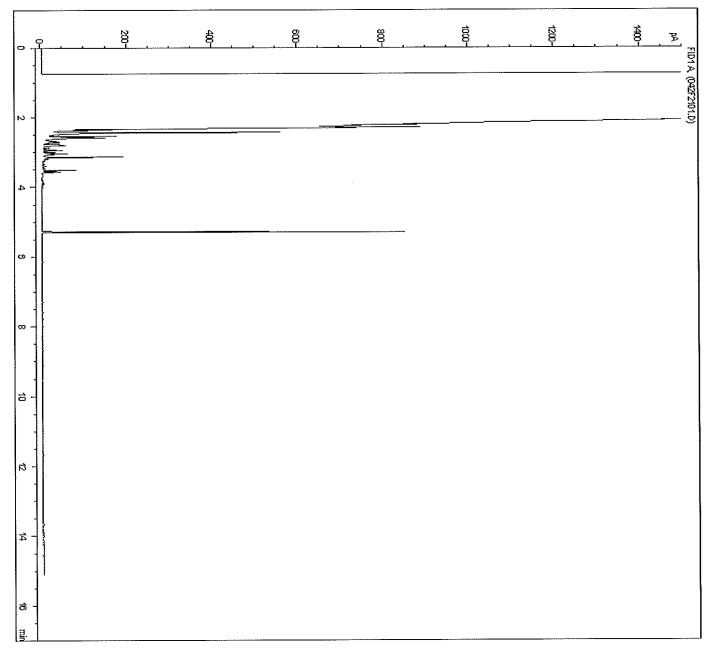
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: DUP-2

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0620B\GNA0620B 2012-06-20 15-21-39\042F2101.D

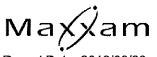
Sample Name: DR8267-02



*** End of Report ***

Instrument 1 2012/06/21 10:50:30 AM 6890NA GG3

Page 1 of 1



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

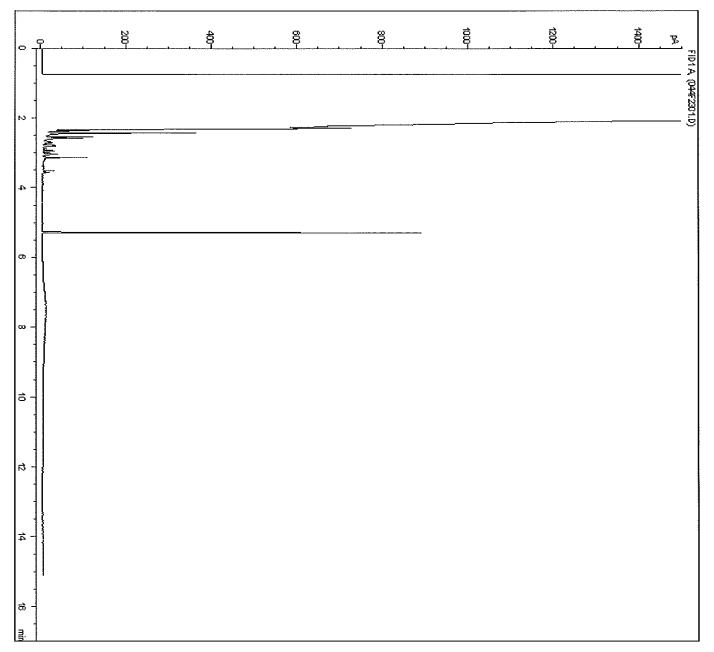
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH6

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Data File C:\CHEM32\1\DATA\GNA0620B\GNA0620B 2012-06-20 15-21-39\044F2301.D

Sample Name: DR8270-02



*** End of Report ***

Instrument 1 2012/06/21 10:50:34 AM 6890NA GG3

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons	Sampling Date: <u>2012/06/13</u>
Location: 208 St. Anne's Road, Winnipeg, MB	Laboratory: <u>Maxxam Analytics Inc.</u>
Consultant Project Number: 10-1177.100	Sample Submission Number: <u>B251220</u>
Are All Laboratory QC Samples Within Acceptance Criteria ((Yes, No, Not Applicable)?
Yes No	NA Comments All lab QC met acceptance criteria. X
Are All Field QC Samples Within Alert Limits (Yes, No, Not	t Applicable)?
	NA Comments All field QC met alert limits.
Has CoA been signed off (Yes/No)?: Has lab warranted all tests were in statistical control in CoA (Has lab warranted all tests were analyzed following SOP's in Were all samples analyzed within hold times (Yes/No)?: All volatiles samples methanol extracted, if required, within Is Chain of Custody completed and signed (Yes/No)?: Were sample temperatures acceptable when they reached lab	CoA (Yes, No or N/A)?:
Was a Data Quality Waiver (DQW) issued (Yes, No or N/A). Date Issued:	?: No
Is data considered to be reliable (Yes/No)?: If answer is "No", describe and provide rationale:	Yes
Data Reviewed by (Print): Alexia Reske-Naurocki Review Date: 2013/02/21 Revision Date (if applicable):	Data Reviewed by (Signature):Revised by (Signature):



Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003340

Attention: Adam Wickman
O'CONNOR ASSOCIATES ENVIRONMENTAL
7 TERRACON PLACE
WINNIPEG, MB
CANADA R2J 4B3

Report Date: 2012/09/05

This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B263570 Received: 2012/07/20, 14:00

Sample Matrix: Water # Samples Received: 5

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/F1 in Water by HS GC/MS (1)	4	N/A	2012/07/25	WINSOP-00054	EPA8260C/CCME PHCCW
•				WINSOP-00055	
BTEX/F1 in Water by HS GC/MS (1)	1	N/A	2012/07/26	WINSOP-00054	EPA8260C/CCME PHCCW
• • •				WINSOP-00055	
CCME Hydrocarbons (F2-F4 in water) (1)	3	2012/07/24	2012/07/24	WINSOP-00056	CCME PHC-CWS
CCME Hydrocarbons (F2-F4 in water) (1)	2	2012/07/26	2012/07/26	WINSOP-00056	CCME PHC-CWS
Ethylene, Di, Tri & Tetraethylene glycol (2)	2	N/A	2012/07/24	BBY5SOP-00001	Based on EPA 8015B
Elements by CRC ICPMS (dissolved) (2)	5	N/A	2012/07/25	BBY7SOP-00002	EPA 6020A
PAH in Water by GC/MS (SIM) (2)	2	2012/07/24	2012/07/26	BBY8SOP-00021	EPA 8270D
Filter and HNO3 Preserve for Metals (2)	5	N/A	2012/07/25	BBY6WI-00001	EPA 200.2
VOCs in Water by HS GC/MS (2)	3	2012/07/23	2012/07/24	BBY8-SOP-0009	EPA 8260C
VOCs in Water by HS GC/MS (2)	2	2012/07/23	2012/07/25	BBY8-SOP-0009	EPA 8260C

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

- (1) This test was performed by Maxxam Winnipeg
- (2) This test was performed by Maxxam Vancouver

Encryption Key

Mun Ammi Shawn Worthing 05 Sep 2012 13:39:40 -06:00

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

Janelle Kochan, B.Sc., Project Manager, Email: JKochan@maxxam.ca Phone# (204) 772-7276 Ext:2209

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



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

RESULTS OF CHEMICAL ANALYSES OF WATER

	UNITS	BH1	BH2	BH25	BH-21	DUP-1	QC Batch
COC Number		S003340	\$003340	S003340	S003340	S003340	
, *		09:30	10:00	10:30	11:00	11:00	
Sampling Date		2012/07/19	2012/07/19	2012/07/19	2012/07/19	2012/07/19	
Maxxam ID		DZ4277	DZ4278	DZ4279	DZ4280	DZ4281	

FIELD	FIELD	FIELD	FIELD	FIELD	ONSITE
	FIELD	FIELD FIELD	FIELD FIELD FIELD	FIELD FIELD FIELD	FIELD FIELD FIELD FIELD



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		DZ4277	DZ4278	DZ4279		DZ4280		
Sampling Date		2012/07/19	2012/07/19	2012/07/19		2012/07/19		
Cattleming 2 att		09:30	10:00	10:30		11:00		
COC Number		S003340	\$003340	S003340		S003340		
00011011202	UNITS	BH1	BH2	BH25	QC Batch	BH-21	RDL	QC Batch

Ext. Pet. Hydrocarbon	"							
F2 (C10-C16 Hydrocarbons)	mg/L	<0.15	<0.15	2.3	6028261	0.25	0.15	6036148
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	86	88	85	6028261	91	N/A	6036148

N/A = Not Applicable RDL = Reportable Detection Limit

Maxxam ID		DZ4280	DZ4281		
Sampling Date		2012/07/19	2012/07/19		1
' "		11:00	11:00		
COC Number		S003340	S003340		
	UNITS	BH-21 Lab-Dup	DUP-1	RDL	QC Batch

Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	0.18	<0.15	0.15	6036148
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	86	92	N/A	6036148

N/A = Not Applicable RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

GLYCOLS BY GC-FID (WATER)

Maxxam ID		DZ4280	DZ4281		
Sampling Date		2012/07/19	2012/07/19		
' *		11:00	11:00		
COC Number		S003340	S003340		
	UNITS	BH-21	DUP-1	RDL	QC Batch

Glycols					
Ethylene Glycol	mg/L	<10	<10	10	6031243
Propylene Glycol	mg/L	<10	<10	10	6031243
Surrogate Recovery (%)					
SULFOLANE (sur.)	%	107	104	N/A	6031243

N/A = Not Applicable RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		DZ4280		DZ4281		
Sampling Date		2012/07/19		2012/07/19		
		11:00		11:00		
COC Number		S003340		S003340		
	UNITS	BH-21	RDL	DUP-1	RDL	QC Batch

Polycyclic Aromatics						
Naphthalene	ug/L	<0.30 (1)	0.30	<0.46 (1)	0.46	6031675
Acenaphthene	ug/L	<0.080 (1)	0.080	<0.16 (1)	0.16	6031675
Fluorene	ug/L	<0.050	0.050	<0.078 (1)	0.078	6031675
Phenanthrene	ug/L	<0.050	0.050	<0.050	0.050	6031675
Anthracene	ug/L	<0.010	0.010	<0.010	0.010	6031675
Fluoranthene	ug/L	<0.020	0.020	<0.020	0.020	6031675
Pyrene	ug/L	<0.020	0.020	<0.020	0.020	6031675
Benzo(a)anthracene	ug/L	<0.010	0.010	<0.010	0.010	6031675
Benzo(a)pyrene	ug/L	<0.0090	0.0090	<0.0090	0.0090	6031675
Surrogate Recovery (%)						
D8-ACENAPHTHYLENE (sur.)	%	99	N/A	82	N/A	6031675
D8-NAPHTHALENE (sur.)	%	91	N/A	74	N/A	6031675

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) RDL raised due to sample matrix interference.



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		DZ4277	DZ4278		DZ4279	DZ4280		
Sampling Date		2012/07/19	2012/07/19		2012/07/19	2012/07/19		
		09:30	10:00		10:30	11:00		
COC Number		S003340	S003340		S003340	S003340		
	UNITS	BH1	BH2	RDL	BH25	BH-21	RDL	QC Batch

Dissolved Metals by ICPMS								
Dissolved Arsenic (As)	ug/L	N/A	N/A	N/A	N/A	2.04	0.10	6029115
Dissolved Barium (Ba)	ug/L	N/A	N/A	N/A	N/A	155	1.0	6029115
Dissolved Chromium (Cr)	ug/L	N/A	N/A	N/A	N/A	<1.0	1.0	6029115
Dissolved Copper (Cu)	ug/L	N/A	N/A	N/A	N/A	3.53	0.20	6029115
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	<0.20	<0.20	0.20	6029115
Dissolved Zinc (Zn)	ug/L	N/A	N/A	N/A	N/A	7,9	5.0	6029115

N/A = Not Applicable RDL = Reportable Detection Limit

	UNITS	DUP-1	RDL	QC Batch
COC Number		\$003340		
		11:00		
Sampling Date		2012/07/19		
Maxxam ID		DZ4281		

Dissolved Metals by ICPMS			Ì	
Dissolved Arsenic (As)	ug/L	2.50	0.10	6029115
Dissolved Barium (Ba)	ug/L	214	1.0	6029115
Dissolved Chromlum (Cr)	ug/L	<1.0	1.0	6029115
Dissolved Copper (Cu)	ug/L	2.67	0.20	6029115
Dissolved Lead (Pb)	ug/L	<0.20	0,20	6029115
Dissolved Zinc (Zn)	ug/L	6.2	5.0	6029115

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		DZ4277	DZ4277	DZ4278		
Sampling Date		2012/07/19	2012/07/19	2012/07/19		
		09:30	09:30	10:00		<u> </u>
COC Number		S003340	S003340	S003340		
	UNITS	BH1	BH1 Lab-Dup	BH2	RDL	QC Batch
	-				1	7
Volatiles						
Benzene	mg/L	<0.0004	<0.0004	<0.0004	0.0004	6029268
Toluene	mg/L	<0.0004	<0.0004	<0.0004	0.0004	6029268
Ethylbenzene	mg/L	<0.0004	<0.0004	<0.0004	0.0004	6029268
o-Xylene	mg/L	<0.0004	<0.0004	<0.0004	0.0004	6029268
m & p-Xylene	mg/L	<0.0008	<0.0008	<0.0008	0.0008	6029268
Xylenes (Total)	mg/L	<0.0008	<0.0008	<0.0008	0.0008	6029268
F1 (C6-C10) - BTEX	mg/L	<0.3	<0.3	<0.3	0.3	6029268
(C6-C10)	mg/L	<0.3	<0.3	<0.3	0.3	6029268
1,2-dichloroethane	ug/L	2.0	N/A	<0.50	0.50	6028630
1,2-dibromoethane	ug/L	<0.20	N/A	<0.20	0.20	6028630
Surrogate Recovery (%)						
4-BROMOFLUOROBENZENE (sur.)	%	95	95	95	N/A	6029268
D4-1,2-DICHLOROETHANE (sur.)	%	93	99	107	N/A	6029268
D8-TOLUENE (sur.)	%	101	98	95	N/A	6029268

N/A = Not Applicable
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		DZ4279		DZ4280		DZ4281		
Sampling Date		2012/07/19		2012/07/19		2012/07/19		
		10:30		11:00		11:00		
COC Number		S003340		S003340		S003340		
	UNITS	BH25	RDL	BH-21	RDL	DUP-1	RDL	QC Batch
Volatiles								
Benzene	mg/L	3.0 (1)	0.004	0.0008	0.0004	0.0015	0.0004	6029268
Toluene	mg/L	0.066	0.0004	<0.0004	0.0004	0.0006	0.0004	6029268
Ethylbenzene	mg/L	1.3	0.0004	0.0013	0,0004	0.0044	0.0004	6029268
o-Xylene	mg/L	0.073	0.0004	<0.0004	0.0004	<0.0004	0.0004	6029268
m & p-Xylene	mg/L	2.5	0.0008	<0.0008	8000.0	<0.0008	0.0008	6029268
Xylenes (Total)	mg/L	2.6	0.0008	<0.0008	8000.0	<0.0008	0.0008	6029268
F1 (C6-C10) - BTEX	mg/L	<0.3	0.3	<0.3	0.3	<0.3	0.3	6029268
(C6-C10)	mg/L	7.3	0,3	<0.3	0.3	<0.3	0.3	6029268
1,2-dichloroethane	ug/L	<0.50	0.50	<1.8 (2)	1.8	<2.8 (2)	2.8	6028630
1,2-dibromoethane	ug/L	<0.20	0.20	<0.20	0.20	<0.20	0.20	6028630
Surrogate Recovery (%)								
4-BROMOFLUOROBENZENE (sur.)	%	98	N/A	95	N/A	93	N/A	6029268
D4-1,2-DICHLOROETHANE (sur.)	%	95	N/A	103	N/A	95	N/A	6029268
D8-TOLUENE (sur.)	%	99	N/A	97	N/A	98	N/A	6029268

N/A = Not Applicable

RDL = Reportable Detection Limit (1) Detection limits raised due to dilution to bring analyte within the calibrated range.

⁽²⁾ RDL raised due to sample matrix interference.



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Package 1 8.0°C

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

General Comments

Report reissued with updated sample ID "BH25" from "BH-17" as per Rebecca Beatty 2012/09/05.

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER) Comments

Sample DZ4277-04 Elements by CRC ICPMS (dissolved): Detection limits raised due to matrix interference.

Sample DZ4278-04 Elements by CRC ICPMS (dissolved): Detection limits raised due to matrix interference.

Results relate only to the items tested.



Attention: Adam Wickman

Client Project #:

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB263570

QA/QC			Date			•	
Batch	00 7	D	Analyzed	Value	Dagger	LIMITO	OC Limita
Num Init	QC Type	Parameter O TERRUS (Aug.)	yyyy/mm/dd	Value	Recovery 90	UNITS %	QC Limits 50 - 130
6028261 HW4	Matrix Spike	O-TERPHENYL (sur.)	2012/07/24				50 - 130
	Called Dianie	F2 (C10-C16 Hydrocarbons)	2012/07/24 2012/07/26		80 100	% %	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/07/26		113	%	80 - 120
	Mathed Blank	F2 (C10-C16 Hydrocarbons) O-TERPHENYL (sur.)	2012/07/24		108	%	50 - 120
Method Blank			<0.15	100		50 - 150	
	RPD	F2 (C10-C16 Hydrocarbons)	2012/07/24 2012/07/24	38.0		mg/L %	40
6028630 AC2		F2 (C10-C16 Hydrocarbons)		30.0	92	%	70 - 130
3020030 AC2	Matrix Spike	1,2-dichloroethane	2012/07/24		90	%	70 - 130
	Callend Blank	1,2-dibromoethane	2012/07/24		90	%	70 - 130
	Spiked Blank	1,2-dichloroethane	2012/07/24		88	%	70 - 130
	Admilianal Dilamin	1,2-dibromoethane	2012/07/24	-0.50	00		70 - 130
	Method Blank	1,2-dichloroethane	2012/07/24	< 0.50		ug/L	
2000445 000	Matrice Online	1,2-dibromoethane	2012/07/24	<0.20	NO	ug/L	00 400
6029115 GS2	Matrix Spike	Dissolved Arsenic (As)	2012/07/25		NC	%	80 - 120
		Dissolved Barium (Ba)	2012/07/25		NC	%	80 - 120
		Dissolved Chromium (Cr)	2012/07/25		99	%	80 - 120
		Dissolved Copper (Cu)	2012/07/25		94	%	80 - 120
		Dissolved Lead (Pb)	2012/07/25		99	%	80 - 120
		Dissolved Zinc (Zn)	2012/07/25		107	%	80 - 120
	Spiked Blank	Dissolved Arsenic (As)	2012/07/25		101	%	80 - 120
		Dissolved Barium (Ba)	2012/07/25		96	%	80 - 120
		Dissolved Chromium (Cr)	2012/07/25		101	%	80 - 120
		Dissolved Copper (Cu)	2012/07/25		102	%	80 - 120
		Dissolved Lead (Pb)	2012/07/25		99	%	80 - 120
		Dissolved Zinc (Zn)	2012/07/25		123 (1) %	80 - 120
	Method Blank	Dissolved Arsenic (As)	2012/07/25	<0.10		ug/L	
	Dissolved Barium (Ba)	2012/07/25	<1.0		ug/L		
		Dissolved Chromium (Cr)	2012/07/25	<1.0		ug/L	
		Dissolved Copper (Cu)	2012/07/25	< 0.20		ug/L	
	Dissolved Lead (Pb)	2012/07/25	<0.20		ug/L		
		Dissolved Zinc (Zn)	2012/07/25	<5.0		ug/L	
029268 HW4	Matrix Spike						
	[DZ4278-01]	4-BROMOFLUOROBENZENE (sur.)	2012/07/25		99	%	60 - 140
		D4-1,2-DICHLOROETHANE (sur.)	2012/07/25		86	%	60 - 140
		D8-TOLUENE (sur.)	2012/07/25		101	%	60 - 140
		Benzene	2012/07/25		79	%	70 - 130
		Toluene	2012/07/25		85	%	70 - 130
Spiked Blank Method Blank		Ethylbenzene	2012/07/25		91	%	70 - 130
		o-Xylene	2012/07/25		92	%	70 - 130
		m & p-Xylene	2012/07/25		92	%	70 - 130
		(C6-C10)	2012/07/25		85	%	70 - 130
	Sniked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/07/25		101	%	60 - 140
	opined Diami	D4-1,2-DICHLOROETHANE (sur.)	2012/07/25		94	%	60 - 140
		D8-TOLUENE (sur.)	2012/07/25		99	%	60 - 140
		Benzene	2012/07/25		83	%	70 - 130
		Toluene	2012/07/25		87	%	70 - 130
		Ethylbenzene	2012/07/25		92	%	70 - 130
		o-Xylene	2012/07/25		94	%	70 - 130
		m & p-Xylene	2012/07/25		93	%	70 - 130
		(C6-C10)	2012/07/25		111	%	70 - 130 70 - 130
	Mothod Plant	4-BROMOFLUOROBENZENE (sur.)	2012/07/25		94	%	60 - 140
	MIRKINO DIRILK	D4-1,2-DICHLOROETHANE (sur.)			87	%	60 - 140
			2012/07/25			% %	
		D8-TOLUENE (sur.)	2012/07/25	40.0004	104		60 - 140
		Benzene	2012/07/25	<0.0004		mg/L	
		Toluene	2012/07/25	<0.0004		mg/L	



Attention: Adam Wickman

Client Project #:

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB263570

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limi
3029268 HW4	Method Blank	Ethylbenzene	2012/07/25	<0.0004		mg/L	
		o-Xylene	2012/07/25	<0.0004		mg/L	
		m & p-Xylene	2012/07/25	<0.0008		mg/L	
		Xylenes (Total)	2012/07/25	<0.0008		mg/L	
		F1 (C6-C10) - BTEX	2012/07/25	<0.3		mg/L	
		(C6-C10)	2012/07/25	< 0.3		mg/L	
	RPD [DZ4277-01]	Benzene	2012/07/25	NC		%	4
		Toluene	2012/07/25	NC		%	4
		Ethylbenzene	2012/07/25	NC		%	4
		o-Xylene	2012/07/25	NC		%	4
		m & p-Xylene	2012/07/25	NC		%	4
		Xylenes (Total)	2012/07/25	NC		%	
		F1 (C6-C10) - BTEX	2012/07/25	NC		%	
			2012/07/25	NC		%	
004040 000	Matrix Calles	(C6-C10)		NC	100		
031243 SS9	Matrix Spike	SULFOLANE (sur.)	2012/07/24		108	%	70 - 1
		Ethylene Glycol	2012/07/24		88	%	70 - 1
		Propylene Glycol	2012/07/24		87	%	70 - 1
	Spiked Blank	SULFOLANE (sur.)	2012/07/24		108	%	70 - 1
		Ethylene Glycol	2012/07/24		101	%	70 - 1
		Propylene Glycol	2012/07/24		101	%	70 - 1
	Method Blank	SULFOLANE (sur.)	2012/07/24		85	%	70 - 1
		Ethylene Glycol	2012/07/24	<10		mg/L	
		Propylene Glycol	2012/07/24	<10		mg/L	
	RPD	Ethylene Glycol	2012/07/24	NC		%	
		Propylene Glycol	2012/07/24	NC		%	
031675 JP1	Matrix Spike	D8-ACENAPHTHYLENE (sur.)	2012/07/25		75	%	50 - 1
001010 01 1	maan opmo	D8-NAPHTHALENE (sur.)	2012/07/25		72	%	50 - 1
		Naphthalene	2012/07/25		81	%	50 - 1
		Acenaphthene	2012/07/25		89	%	50 - 1
		•			81	%	50 - 1
		Fluorene	2012/07/25			%	
		Phenanthrene	2012/07/25		86		60 - 1
		Anthracene	2012/07/25		80	%	60 - 1
		Fluoranthene	2012/07/25		100	%	60 - 1
		Pyrene	2012/07/25		104	%	60 - 1
		Benzo(a)anthracene	2012/07/25		75	%	60 - 1
		Benzo(a)pyrene	2012/07/25		87	%	60 - 1
	Spiked Blank	D8-ACENAPHTHYLENE (sur.)	2012/07/25		89	%	50 - 1
	·	D8-NAPHTHALENE (sur.)	2012/07/25		85	%	50 - 1
		Naphthalene	2012/07/25		82	%	50 - 1
		Acenaphthene	2012/07/25		89	%	50 - 1
		Fluorene	2012/07/25		81	%	50 - 1
		Phenanthrene	2012/07/25		85	%	60 - 1
		Anthracene	2012/07/25		84	0/2	60 - 1
		Fluoranthene	2012/07/25		98	%	60 - 1
		Pyrene	2012/07/25		102	%	60 - 1
		•					
		Benzo(a)anthracene	2012/07/25		77	%	60 - 1
	NA satural Pilonts	Benzo(a)pyrene	2012/07/25		89	%	60 - 1
	Method Blank	D8-ACENAPHTHYLENE (sur.)	2012/07/25		89	%	50 - 1
		D8-NAPHTHALENE (sur.)	2012/07/25		86	%	50 - 1
		Naphthalene	2012/07/25	<0.10		ug/L	
		Acenaphthene	2012/07/25	<0.050		ug/L	
		Fluorene	2012/07/25	< 0.050		ug/L	
		Phenanthrene	2012/07/25	< 0.050		ug/L	
		Anthracene	2012/07/25	< 0.010		ug/L	
						-	
		Anthracene Fluoranthene	2012/07/25 2012/07/25	<0.010 <0.020		ug/L ug/L	



Attention: Adam Wickman

Client Project #:

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB263570

QA/QC			Date				
Batch			Analyzeď				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6031675 JP1	Method Blank	Pyrene	2012/07/25	<0.020		ug/L	
		Benzo(a)anthracene	2012/07/25	< 0.010		ug/L	
		Benzo(a)pyrene	2012/07/25	<0.0090		ug/L	
	RPD	Naphthalene	2012/07/26	NC		%	40
		Acenaphthene	2012/07/26	NC		%	40
		Fluorene	2012/07/26	NC		%	40
		Phenanthrene	2012/07/26	NC		%	40
		Anthracene	2012/07/26	NC		%	40
		Fluoranthene	2012/07/26	NC		%	40
		Pyrene	2012/07/26	NC		%	40
		Benzo(a)anthracene	2012/07/26	NC		%	40
		Benzo(a)pyrene	2012/07/26	NC		%	40
6036148 HW4	Matrix Spike						
	[DZ4281-02]	O-TERPHENYL (sur.)	2012/07/26		85	%	50 - 130
	(F2 (C10-C16 Hydrocarbons)	2012/07/26		90	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/07/26		104	%	50 - 130
	opinios Dianin	F2 (C10-C16 Hydrocarbons)	2012/07/26		106	%	80 - 120
	Method Blank	O-TERPHENYL (sur.)	2012/07/26		103	%	50 - 130
	monios Diam	F2 (C10-C16 Hydrocarbons)	2012/07/26	<0.15	.00	mg/L	10 .00
	RPD (DZ4280-02)	F2 (C10-C16 Hydrocarbons)	2012/07/26	NC		%	40

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 Winnipeg: Unit D - 675 Berry Street R3H 1A7 Telephone(204) 772-7276 Fax(204) 772-2386



Validation Signature Page

Maxxam Job #: B263570	
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).	
Andy Lu, Idata Validation Coordinator	

Hua Wo, Organics Supervisor

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

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Consulting Company:

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サイラグーカグカーダンジ

Contact #5:

Address: Contact:

Project 1D:

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Sampled By:

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Charles wings make

Zomenton; 9201 - 48 Street, 165 254. Ph. 700) 577-7100, Fax: (780) 450-4187, Toll 146, (877) 465-9059 Cargany 4000 1985 St. ME, 125 6P8; PM (400) 281-0077, Fav. (400) 735-0040, Tell free; (800) 385-7247

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Page 14 of 19

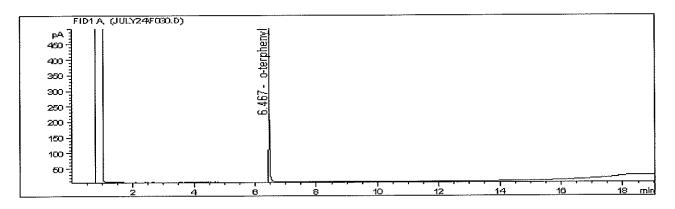


O'CONNOR ASSOCIATES ENVIRONMENTAL

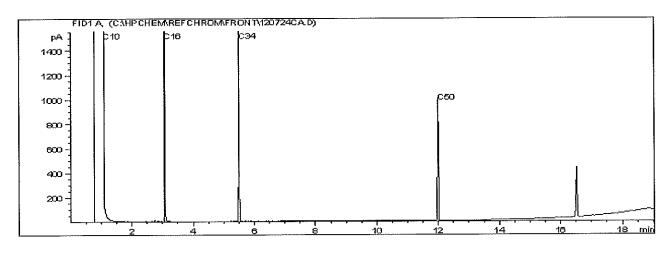
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH1

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	68		CZZ
Varsol:	68	_	C12	Lubricating Oils:	C20		C40
Kerosene:	C7		C16	Crude Oils:	C3	-	C60+

Page 1 of 1

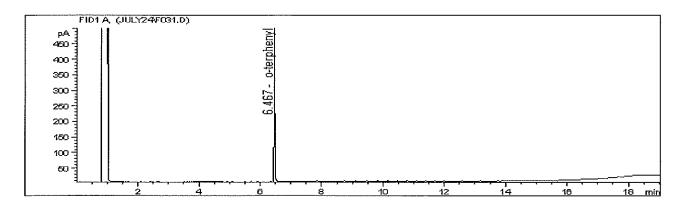


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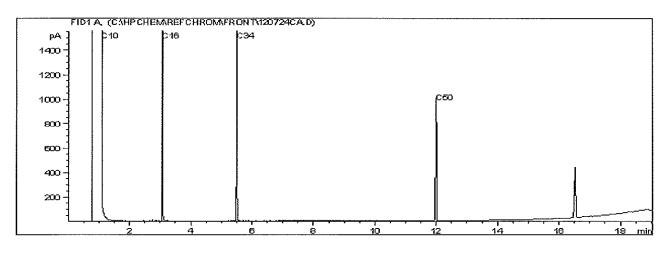
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH2

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8	-	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	-	C40
Rerosene:	C7		C16	Crude Oils:	C3	-	C60+

Page 1 of 1

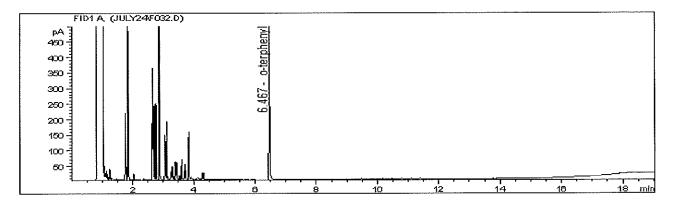


O'CONNOR ASSOCIATES ENVIRONMENTAL

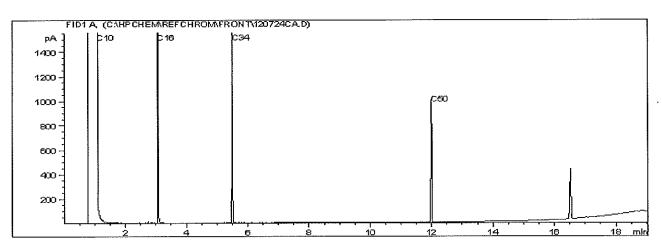
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH25

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	012	Diesel:	C8		CZZ
Varsol:	C8	_	C12	Lubricating Oils:	C20		C40
Kerosene:	C7	-	C16	Crude Oils:	C3	-	C60+

Page 1 of 1

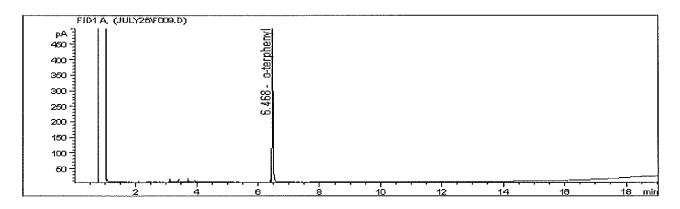


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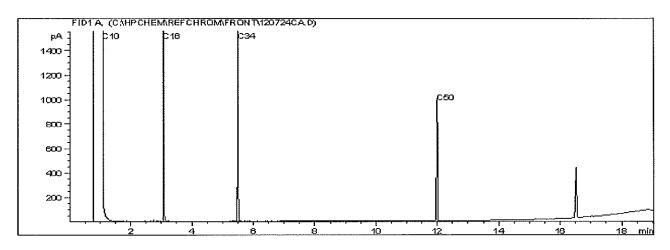
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-21

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8		C22
Varsol:	C8	_	C12	Lubricating Oils:	C20		C40
Rerosene:	C7	•	C16	Crude Oils:	C3	_	C60+

Page 1 of 1

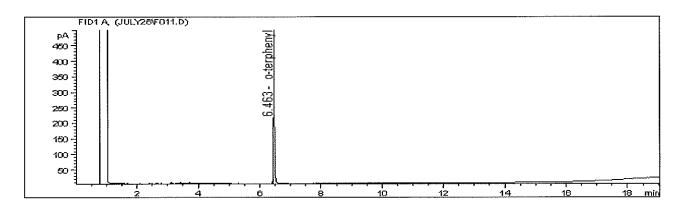


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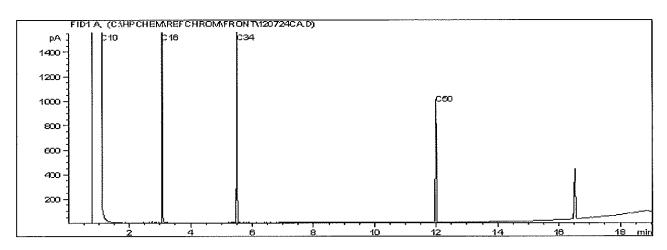
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: DUP-1

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C 4	- C12	Diesel:	68	_	C22
Varsol:	C8	- C12	Lubricating Oils:	620	_	C40
Kerosene:	C7	- C16	Crude Oils:	CЗ		C60+

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons				Sampling Date: _	2012/07/19					
Location: 208 St. Anne's	Road, Winnip	eg, MB	Laboratory: <u>Maxxam Analytics Inc.</u>							
Consultant Project Number: 10	0-1177.100		Sample Submission Number: <u>B263570</u>							
Are All Laboratory QC Samples Wit	thin Acceptanc	ce Criteria ((Yes, No,	Not Applicable)?						
	Yes	No	NA		Comments					
Instrument Surrogate Recovery	X			All lab QC met accept	ance criteria.					
Extraction Surrogate Recovery	X									
Method Blank Concentration	X									
Matrix Duplicate RPD	X									
Matrix Spike Recovery	X									
Lab Control Sample Recovery			X							
Are All Field QC Samples Within A				ole)?	Comments					
Field Blank Concentration	Yes	No	NA X	All field QC met alert						
Trip Blank Concentration			X	mi field ge met dieri						
Field Duplicate RPD	X		21							
Tield Duplicate Ri D	71									
Has CoA been signed off (Yes/No)?					Yes					
Has lab warranted all tests were in st					Yes					
Has lab warranted all tests were anal	(~	CoA (Ye	s, No or N/A)?:	Yes					
Were all samples analyzed within ho					Yes					
All volatiles samples methanol extra			48 hours (Yes, No or N/A)?:						
Is Chain of Custody completed and			/37 /3T - \	0.	Yes					
Were sample temperatures acceptable	le when they re	eached lab	(Yes/No)	7:	Yes					
Was a Data Quality Waiver (DQW)	issued (Yes, N	lo or N/A)'	?:		No					
Date Issued:				Date of Response:						
Is data considered to be reliable (Ye If answer is "No", describe and prov	워크린 - B			Yes						
in answer is two, describe and prov	ide fationale.									
Data Reviewed by (Print): A		urocki	•2	Data Reviewe	ed by (Signature): Which Mile					
Review Date: <u>20</u> Revision Date (if applicable):			•	Revise	ed by (Signature):					



Your Project #: 10-1177.100

Site#: 63955

Site Location: 208 ST ANNE'S ROAD, WINNIPEG MB

Your C.O.C. #: 31127903

Attention: Adam Wickman **PARSONS** 7 Terracon Place WINNIPEG, MB CANADA **R2J4B3**

Report Date: 2012/09/05

This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B272641 Received: 2012/08/16, 15:30

Sample Matrix: Water # Samples Received: 1

		Date	Date	
Analyses	Quantity	Extracted	Analyzed Laboratory Method	Analytical Method
BTEX/F1 in Water by HS GC/MS (1)	1	N/A	2012/08/17 WINSOP-00054	EPA8260C/CCME PHCCW
•			WINSOP-00055	
CCME Hydrocarbons (F2-F4 in water) (1)	1	2012/08/17	2012/08/17 WINSOP-00056	CCME PHC-CWS
Elements by CRC ICPMS (dissolved) (2)	1	N/A	2012/08/18 BBY7SOP-00002	EPA 6020A
VOCs in Water by HS GC/MS (2)	1	2012/08/17	2012/08/17 BBY8-SOP-0009	EPA 8260C

- * RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
- (1) This test was performed by Maxxam Winnipeg
- (2) This test was performed by Maxxam Vancouver

Encryption Key

When Morthing 05 Sep 2012 09:07:31 -06:00

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

Janelle Kochan, B.Sc., Project Manager, Email: JKochan@maxxam.ca

Phone# (204) 772-7276 Ext:2209

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.



PARSONS

Client Project #: 10-1177.100

Site Location: 208 ST ANNE'S ROAD, WINNIPEG MB

Sampler Initials: JP

PETROLEUM HYDROCARBONS (CCME)

COC Number		14:00 31127903		1
COC Number	UNITS	31127903 BH17	RDI	QC Batch

Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/L	0.52	0.15	6090654
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	100	N/A	6090654

N/A = Not Applicable RDL = Reportable Detection Limit



PARSONS

Client Project #: 10-1177.100 Site Location: 208 ST ANNE'S ROAD, WINNIPEG MB

Sampler Initials: JP

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		EF2286		
Sampling Date		2012/08/16		
, ,		14:00		
COC Number	· 1	31127903		
	UNITS	BH17	RDL	QC Batch

Dissolved Metals by ICPMS				
Dissolved Lead (Pb)	ug/L	ND	0.20	6091454

ND = Not detected RDL = Reportable Detection Limit



PARSONS

Client Project #: 10-1177.100

Site Location: 208 ST ANNE'S ROAD, WINNIPEG MB

Sampler Initials: JP

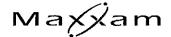
VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		EF2286		
Sampling Date		2012/08/16		
		14:00	_	
COC Number	LUNITO	31127903	-	OC Datab
	UNITS	BH17	KUL	QC Batch
Volatiles				
Benzene	ug/L	2.1	0.4	6086595
Toluene	ug/L	0.6	0.4	6086595
Ethylbenzene	ug/L	11	0.4	6086595
o-Xylene	ug/L	ND	0.4	6086595
m & p-Xylene	ug/L	10	0.8	6086595
Xylenes (Total)	ug/L	10	0.8	6086595
F1 (C6-C10) - BTEX	ug/L	ND	300	6086595
(C6-C10)	ug/L	ND	300	6086595
1,2-dichloroethane	ug/L	ND	0.50	6091718
1,2-dibromoethane	ug/L	ND	0.20	6091718
Surrogate Recovery (%)				
4-BROMOFLUOROBENZENE (sur.)	%	94	N/A	6086595
D4-1,2-DICHLOROETHANE (sur.)	%	112	N/A	6086595
D8-TOLUENE (sur.)	%	94	N/A	6086595
1,4-Difluorobenzene (sur.)	%	108	N/A	6091718
4-BROMOFLUOROBENZENE (sur.)	%	95	N/A	6091718
D4-1,2-DICHLOROETHANE (sur.)	%	100	N/A	6091718

ND = Not detected

N/A = Not Applicable

RDL = Reportable Detection Limit



PARSONS

Client Project #: 10-1177.100

Site Location: 208 ST ANNE'S ROAD, WINNIPEG MB

Sampler Initials: JP

Package 1 8.3°C

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

General Comments

Results relate only to the items tested.



PARSONS

Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location:

208 ST ANNE'S ROAD, WINNIPEG MB

Quality Assurance Report Maxxam Job Number: NB272641

			Date			
Batch		<u>.</u> .	Analyzed		10000	0011.16
	QC Type	Parameter	yyyy/mm/dd	Value Recovery	UNITS	QC Limits
6086595 HW4	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2012/08/17	97	%	60 - 140
		D4-1,2-DICHLOROETHANE (sur.)	2012/08/17	111	%	60 - 140
		D8-TOLUENE (sur.)	2012/08/17	96	%	60 - 140
		Benzene	2012/08/17	NC	%	70 - 130
		Toluene	2012/08/17	120	%	70 - 130
		Ethylbenzene	2012/08/17	125	%	70 - 130
		o-Xylene	2012/08/17	122	%	70 - 130
		m & p-Xylene	2012/08/17	129	%	70 - 130
		(C6-C10)	2012/08/17	NC	%	70 - 130
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/08/17	97	%	60 - 140
	,	D4-1,2-DICHLOROETHANE (sur.)	2012/08/17	106	%	60 - 140
		D8-TOLUENE (sur.)	2012/08/17	93	%	60 - 140
		Benzene	2012/08/17	105	%	70 - 130
		Toluene	2012/08/17	105	%	70 - 130
		Ethylbenzene	2012/08/17	108	%	70 - 130
		o-Xylene	2012/08/17	109	%	70 - 130
		m & p-Xylene	2012/08/17	112	%	70 - 130
		(C6-C10)	2012/08/17	77	%	70 - 130
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/08/17	95	%	60 - 140
	MECHOU DIAIR		2012/08/17	104	%	60 - 140
		D4-1,2-DICHLOROETHANE (sur.)		96	%	60 - 140
		D8-TOLUENE (sur.)	2012/08/17			00 - 140
		Benzene	2012/08/17	ND, RDL=0.4	ug/L	
		Toluene	2012/08/17	ND, RDL=0.4	ug/L	
		Ethylbenzene	2012/08/17	ND, RDL=0.4	ug/L	
		o-Xylene	2012/08/17	ND, RDL=0.4	ug/L	
		m & p-Xylene	2012/08/17	ND, RDL=0.8	ug/L	
		Xylenes (Total)	2012/08/17	ND, RDL=0.8	ug/L	
		F1 (C6-C10) - BTEX	2012/08/17	ND, RDL=300	ug/L	
		(C6-C10)	2012/08/17	ND, RDL=300	ug/L	
	RPD	Benzene	2012/08/17	NC	%	40
		Toluene	2012/08/17	NC	%	40
		Ethylbenzene	2012/08/17	NC	%	40
		o-Xylene	2012/08/17	NC	%	40
		m & p-Xylene	2012/08/17	NC	%	40
		Xylenes (Total)	2012/08/17	NC	%	40
		F1 (C6-C10) - BTEX	2012/08/17	NC	%	40
		(C6-C10)	2012/08/17	NC	%	40
6090654 HW4	Matrix Spike	O-TERPHENYL (sur.)	2012/08/17	98	%	50 - 130
0000004 11114	Matrix Opino	F2 (C10-C16 Hydrocarbons)	2012/08/17	102	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/08/17	100	%	50 - 130
	Spiked Dialik	F2 (C10-C16 Hydrocarbons)	2012/08/17	100	%	80 - 120
	Mathad Dlank			82	%	50 - 130
	Method Blank	O-TERPHENYL (sur.)	2012/08/17			50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/08/17	ND, RDL=0.15	mg/L	40
	RPD [EF2286-02]	F2 (C10-C16 Hydrocarbons)	2012/08/17	NC	%	40
	Matrix Splke	Dissolved Lead (Pb)	2012/08/18	96	%	80 - 120
	Spiked Blank	Dissolved Lead (Pb)	2012/08/18	97	%	80 - 120
	Method Blank	Dissolved Lead (Pb)	2012/08/18	ND, RDL=0.20	ug/L	
6091718 AC2	Matrix Spike	1,4-Difluorobenzene (sur.)	2012/08/18	98	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/08/18	101	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/08/18	98	%	70 - 130
		1,2-dichloroethane	2012/08/18	119	%	70 - 130
		1,2-dibromoethane	2012/08/18	122	%	70 - 130
	Spiked Blank	1,4-Difluorobenzene (sur.)	2012/08/17	99	%	70 - 130
	•	4-BROMOFLUOROBENZENE (sur.)	2012/08/17	100	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/08/17	98	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics Winnipeg: Unit D - 675 Berry Street R3H 1A7 Telephone(204) 772-7276 Fax(204) 772-2386



PARSONS

Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location:

208 ST ANNE'S ROAD, WINNIPEG MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB272641

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value Recovery	UNITS	QC Limits
6091718 AC2	Spiked Blank	1,2-dichloroethane	2012/08/17	108	%	70 - 130
00011107102	Opinoo Biank	1.2-dibromoethane	2012/08/17	106	%	70 - 130
	Method Blank	1,4-Difluorobenzene (sur.)	2012/08/17	108	%	70 - 130
	Montos Blank	4-BROMOFLUOROBENZENE (sur.)	2012/08/17	90	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/08/17	100	%	70 - 130
		1.2-dichloroethane	2012/08/17	ND, RDL=0.50	ug/L	
		1,2-dibromoethane	2012/08/17	ND, RDL=0.20	ug/L	
	RPD	1,2-dibromoethane	2012/08/17	NC	%	30

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 of Maxxam Analytics Winnipeg: Unit D - 675 Berry Street R3H 1A7 Telephone (204) 772-7276 Fax (204) 772-2386



Validation Signature Page

laxxam Job #:	5272041	
he analytical data	and all QC contained in this report were reviewed and validated by the following individual	(s).
Hua Wo, Organics	Supervisor	
Rob Reinert, Data V	Validation Coordinator	

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.

monten seas nowed will will PRINCIP MAKER 1) てのり tuas でき waspare SCITIE ORDER P. の問題のないのはないない。ないのはの自由の自由をものはなっていないというというと MERCHANTE Į. PERSONAL PROPERTY AND RESIDENCE PROPERTY OF THE PROPERTY OF THE PERSONAL PROPERTY OF THE PERSONA COUNTY THE PROPERTY TO SEE THE PARTY REPURED A Ton Present Laboratory Use Only: 日本日本 PASSESS UPPERSON THE PROPERTY OF THE PROPERTY. CARCOLLEGE CONTROL OUNG CASTON Supplied the No. Working days for monthly California The Transfer and Market And Marke CHAIN OF CUSTODY RECORD SUNCOR DOWNSTREAM B 27264 (S)(C) WATER ATTO というない目のないが Reputer (Standard) TAT: Manage Arroads Š Name of the r.B MARKE ICT IT 7-1CC なれる ではま Met September William CLUTCO PRODUCT BENGERALING Person or specific (Հայում (Հայուն) Անի Հայաստանի (Հայունիան) DESCRIPTION OF THE 中一等 AWLYSS REDUSTED 100 M 54 (2007) な場所が 4 10 10 10 3000 ***** Dissolvad Motnis (As, Bu, Cu, Cr, Zo) PATRONIA WAS WOODEN WHICH DIED AT AN IMPORT TO THE SECOND TRANSMED WOODEN WELL TO THE TANK THE WAS TO SECOND THE #3896 O'CONNOR ASSOCIATES ENVIRONME minVV of bayloasiCI, bas,l Fer (2047-39-30-14 Page 9 of 9 ՄՎԴԴ In Water (ԱռբՌովութու», Մարչա(գ)րչյան adam-wckmangoconnor-associates.com REPORT SECREMENTON (A CENTER from topicing ACTION SOMETHING VOC IN WATER (1,2 DBA. 1,2 DCA) WINNIPEG MB R2J 4B3 (Matray) SP-19,XaTu THERMON PLACE Motals Field Feltonad 9 (Y / N) Actam Wickman 1967-683-(1961 3 300 100 1000 Sarker The Sark SAMPLES ALIST BE YEAR TOOK | - 1707 | FROM THE OF SAMPLING UNTIL DELYCH TO LANKA 105-1501 100 marina mar Ç ĬŢ. いいかが、これは、これにはないのではない。これには、これできない。 REAL 100 mm (com com) 100 mm (com com) 200 mm (com com) į, Commercian Merogenton 12 Ĝ mostation 開展和歌 CONTRACTOR WICKORD 14 M. W. (4.70 to 12.6) DESTRUCTION AND DESCRIPTION OF THE PERSON OF 3 108 16 TO THE WAY TO GOOD WILLIAM OF MINNIPEGNB MENTES PUT 483 PACIFICATION TO TO TO TO كالمتائد كالمتارسة 1:10 かまか AS MOUSELD BY ISSUED AS つけるりじん かいさいりょう NuxxuE Tarme Service Land 発信的ではいる EF22810 $\frac{\zeta}{\zeta}$ County Name SPATIS 16 [] 6 1,84

TO STERESONSBEDY OF THE RELINOUSHER TO BYSINE THE ACCURACY OF THE DAVIN OF DISTOPY RECORD, AN INCOMPLETE CHUNG OF CUSTODY MAY RESELVE NA MALITERAL TAT DELIVE. TALL SAMPLES ARE WELD FOR 85 DAYS AFTER SAMPLE RECEIVED, FOR SPECIAL RECRESTS CONTACT YOUR PROJECT MAKACER

NAME AND PARTY OF

DATA QUALITY REVIEW CHECKLIST

Consultant: <u>Parsons</u> Sampling Date					2012/08/16		
Location: 208 St. Anne's	Road, Winnip	eg, MB	Laboratory: Maxxam Analytics Inc.				
Consultant Project Number: 10-1177.100			Sample Submission Number: <u>B272641</u>				
Are All Laboratory QC Samples Wi	thin Acceptanc	ce Criteria ((Yes, No,	Not Applicable)?			
	Yes	No	NA		Comments		
Instrument Surrogate Recovery	X			All lab QC met accepte	ance criteria.		
Extraction Surrogate Recovery	X						
Method Blank Concentration	X						
Matrix Duplicate RPD	X						
Matrix Spike Recovery	X						
Lab Control Sample Recovery			X				
Are All Field QC Samples Within A	lert Limits (Yo	es, No, Not No	t Applicab NA	le)?	Comments		
Field Blank Concentration	1 03	T 1	X	No field QC were subi			
Trip Blank Concentration			X				
Field Duplicate RPD			X				
Has CoA been signed off (Yes/No)? Has lab warranted all tests were in s Has lab warranted all tests were ana Were all samples analyzed within he All volatiles samples methanol extra Is Chain of Custody completed and Were sample temperatures acceptab	tatistical controllyzed following bld times (Yes/acted, if require signed (Yes/N	g SOP's in 'No)?: ed, within 4 o)?:	CoA (Yes	yes, No or N/A)?:	Yes Yes Yes Yes N/A Yes Yes		
Was a Data Quality Waiver (DQW)	issued (Yes, N	lo or N/A)'	?:		No		
Date Issued:				Date of Response:			
Is data considered to be reliable (Ye If answer is "No", describe and prov				Yes			
Data Reviewed by (Print): <u>A</u> Review Date: <u>2</u> Revision Date (if applicable): _	013/02/21		- -		ed by (Signature):		



Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S008502

Attention: Adam Wickman

O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2012/10/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B293842 Received: 2012/10/17, 15:00

Sample Matrix: Soil # Samples Received: 8

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	6	2012/10/17	2012/10/20	WINSOP-00054	EPA8260C/CCME PHCCW
,				WINSOP-00055	
BTEX/MTBE Soil LH, VH, F1 SIM/MS (1)	2	2012/10/19	2012/10/24	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX (1)	2	N/A	2012/10/24	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2012/10/19	2012/10/24	BBY8SOP-00030	CCME Soil Tier 1
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2012/10/19	2012/10/25	BBY8SOP-00030	CCME Soil Tier 1
CCME Hydrocarbons (F2-F4 in soil)	6	2012/10/17	2012/10/19	WINSOP-00056	CCME PHC-CWS
Elements by ICPMS (total) (1)	8	2012/10/22	2012/10/23	BBY7SOP-00001	EPA 6020A
Moisture (1)	2	N/A	2012/10/20	BBY8SOP-00017	Ont MOE -E 3139
Moisture	6	N/A	2012/10/19	WIN SOP-00060	Carter Method 51.2
pH (2:1 DI Water Extract) (1)	8	2012/10/24	2012/10/24	BBY6SOP-00028	Carter, SSMA 16.2
VOCs In Soil by HS GC/MS (1)	3	2012/10/19	2012/10/22	BBY8-SOP-0009	EPA 8260C
VOCs in Soil by HS GC/MS (1)	5	2012/10/19	2012/10/23	BBY8-SOP-0009	EPA 8260C

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Janelle Kochan

Qanille Kochan

26 Oct 2012 16:46:25-05:00

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

Janelle Kochan, B.Sc., Project Manager, Email: JKochan@maxxam.ca Phone# (204) 772-7276 Ext:2209

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



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

BTEX/F1-F4 IN SOIL (SOIL)

Maxxam ID		ET5011	ET5012	ET5013	ET5014		
Sampling Date		2012/10/16	2012/10/16	2012/10/16	2012/10/16		
COC Number		10:30 \$008502	10:45 \$008502	11:00 S008502	11:15 S008502		
OOC Ivanibei	UNITS	BH-30-3.7-4.3	BH-31-0.6-1.2	BH-31-1.8-2.4	BH-31-3.1-3.7	RDL	QC Batch
Physical Properties							
Moisture	%	33	20	26	27	0.3	6263346
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<20	<20	<20	110	20	6263340
F3 (C16-C34 Hydrocarbons)	mg/kg	<20	<20	26	<20	20	6263340
F4 (C34-C50 Hydrocarbons)	mg/kg	<20	<20	<20	<20	20	6263340
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	6263340
Volatiles							
Benzene	mg/kg	<0.0050	0.039	<0.0050	<0.0050	0.0050	6263271
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	6263271
Ethylbenzene	mg/kg	0.13	0.040	<0.010	<0.010	0.010	6263271
Xylenes (Total)	mg/kg	0.10	<0.040	<0.040	<0.040	0.040	6263271
m & p-Xylene	mg/kg	0.10	<0.040	<0.040	<0.040	0.040	6263271
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	6263271
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	6263271
F1 (C6-C10) - BTEX	mg/kg	<10	12	<10	27	10	6263271
(C6-C10)	mg/kg	<10	12	<10	27	10	6263271
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	101	102	100	105	N/A	6263271
D10-ETHYLBENZENE (sur.)	%	105	110	113	113	N/A	6263271
D4-1,2-DICHLOROETHANE (sur.)	%	88	85	87	89	N/A	6263271
D8-TOLUENE (sur.)	%	106	106	106	104	N/A	6263271
O-TERPHENYL (sur.)	%	84	88	52	93	N/A	6263340



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

BTEX/F1-F4 IN SOIL (SOIL)

016	
0/16	
0	
31 RDL	QC Batch
31 KDL	NO Datell
0.3	6263346
) 20	6263340
20	6263340
20	6263340
s N/A	6263340
0.005	0 6263271
20 0.020	6263271
10 0.010	6263271
40 0.040	6263271
40 0.040	6263271
20 0.020	6263271
0.10	6263271
10	6263271
10	6263271
N/A	6263271
4 N/A	6263271
. N/A	6263271
3 N/A	6263271
N/A	6263340
	N/A

N/A = Not Applicable

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID	1 1	ET5009	ET5010	ET5011	ET5012	ET5013		
Sampling Date		2012/10/16	2012/10/16	2012/10/16	2012/10/16	2012/10/16		
, -	1	10:00	10:15	10:30	10:45	11:00	1	
COC Number		S008502	S008502	S008502	S008502	S008502		
	LINUTO	D11 20 4 0 4 0	BH-30-2.4-3.1	BH-30-3.7-4.3	BH-31-0.6-1.2	BH-31-1.8-2.4	RDL	QC Batch
	UNITS	BH-30-1.2-1.8	DN-30-2,4-3,1	DH-30-3.7-4.3	DIT-OT-0.0-TIE	Dil-01-110-214	1110-	AC Daton
Physical Properties	UNIIS	Вп-30-1.2-1.8	BH-30-2.4-3.1	BH-30-3.7-4.3	Birotroloritz	Dis-01-110-214		
Physical Properties Soluble (2:1) pH	pH Units	9.04	8.96	7.89	8,47	8,59		6275174

Maxxam ID		ET5014	ET5015	ET5016		
Sampling Date		2012/10/16	2012/10/16	2012/10/16		
		11:15	11:30	11:30		
COC Number		S008502	S008502	S008502		
						I
	UNITS	BH-31-3.1-3.7	BH-31-4.3-4.9	DUP-31	RDL	IQC Batch
Physical Properties	UNITS	BH-31-3.1-3.7	BH-31-4.3-4.9	DUP-31	IRDL	QC Batch
Physical Properties Soluble (2:1) pH	pH Units	8,55	BH-31-4.3-4.9	8.66	0.010	QC Batch 6275444



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: AW

PHYSICAL TESTING (SOIL)

Maxxam ID		ET5009	ET5010		
Sampling Date		2012/10/16	2012/10/16		
1 ' -		10:00	10:15		
COC Number		\$008502	S008502		1
	UNITS	BH-30-1.2-1.8	BH-30-2.4-3.1	RDL	QC Batch

Physical Properties					
Moisture	%	2.4	2.8	0.30	6268164

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		ET5009	ET5010	ET5011	ET5012	1	
Sampling Date		2012/10/16	2012/10/16	2012/10/16	2012/10/16		
		10:00	10:15	10:30	10:45		
COC Number		S008502	S008502	S008502	S008502		
	UNITS	BH-30-1.2-1.8	BH-30-2.4-3.1	BH-30-3.7-4.3	BH-31-0.6-1.2	RDL	QC Batch
Total Metals by ICPMS	UNITS	BH-30-1.2-1.8	BH-30-2.4-3.1	BH-30-3.7-4.3	BH-31-0.6-1.2	RDL	QC Batch

Maxxam ID		ET5013		ET5014	ET5015	ET5016		
Sampling Date		2012/10/16		2012/10/16	2012/10/16	2012/10/16		
		11:00		11:15	11:30	11:30]
COC Number		S008502		S008502	S008502	\$008502		
COC Millinger		COOCOC.		Q00000				
COC Mulimber	UNITS	BH-31-1.8-2.4	QC Batch		BH-31-4.3-4.9	DUP-31	RDL	QC Batc
COC Number	UNITS		QC Batch				RDL	QC Batcl
Total Metals by ICPMS	UNITS		QC Batch				RDL	QC Batcl



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		ET5009		ET5010	ET5011		ET5012		
Sampling Date		2012/10/16		2012/10/16	2012/10/16		2012/10/16		
, -		10:00	Ì	10:15	10:30		10:45		
COC Number		S008502		S008502	S008502		S008502		
	UNITS	BH-30-1.2-1.8	QC Batch	BH-30-2.4-3.1	BH-30-3.7-4.3	QC Batch	BH-31-0.6-1.2	RDL	QC Batch
Volatiles									
1,2-dichloroethane	mg/kg	<0.025	6275009	<0.025	<0.025	6282437	<0.025	0.025	6275009
1,2-dibromoethane	mg/kg	<0.025	6275009	<0.025	<0.025	6282437	<0.025	0.025	6275009

Maxxam ID		ET5013		ET5014		ET5015	ET5016		
Sampling Date		2012/10/16		2012/10/16		2012/10/16	2012/10/16		
, ,		11:00		11:15		11:30	11:30		
COC Number		S008502		S008502		S008502	S008502		
	UNITS	BH-31-1.8-2.4	QC Batch	BH-31-3.1-3.7	QC Batch	BH-31-4.3-4.9	DUP-31	RDL	QC Batch
							Ι		
Volatiles									
Volatiles	mg/kg	<0.025	6282437	<0.025	6275009	<0.025	<0,025	0.025	6282437



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

CCME BTEX/F1-F4 IN SOIL (SOIL)

	2012/10/16		2012/10/16		
				_	
LINUTO		DO Batala		DDI	QC Batch
UNIIS	BH-30-1.2-1.0	UC Batch	DE-30-2.4-3.1	LKOL	NC Daten
mg/kg	<10	6263367	<10	10	6263367
mg/kg	19	6286579	<10	10	6284383
mg/kg	420	6286579	85	10	6284383
mg/kg	65	6286579	28	10	6284383
mg/kg	Yes	6286579	Yes	N/A	6284383
mg/kg	<0.10	6277386	<0.10	0.10	6277386
mg/kg	<0.0050	6277386	<0.0050	0.0050	6277386
mg/kg	<0.020	6277386	<0.020	0.020	6277386
mg/kg	<0.010	6277386	0.011	0.010	6277386
mg/kg	<0.040	6277386	0.046	0.040	6277386
mg/kg	<0.040	6277386	<0.040	0.040	6277386
mg/kg	<0.040	6277386	0.046	0.040	6277386
mg/kg	<10	6277386	<10	10	6277386
%	105	6277386	105	N/A	6277386
%	98	6277386	96	N/A	6277386
%	83	6277386	85	N/A	6277386
%	104	6277386	98	N/A	6277386
%	87	6286579	88	N/A	6284383
	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	2012/10/16 10:00 S008502 UNITS BH-30-1.2-1.8 BH-30-1.2-1.8	2012/10/16	10:00	2012/10/16

N/A = Not Applicable

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

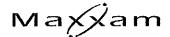
Sampler Initials: AW

Package 1 6.2°C

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

General Comments

Results relate only to the items tested.



Attention: Adam Wickman

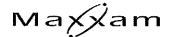
Client Project #:

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB293842

QA/QC Batch			Date Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6263271 HW4	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2012/10/20	Yaluc	101	%	60 - 140
0203271111144	Waterx Opine	D10-ETHYLBENZENE (sur.)	2012/10/20		110	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/20		82	%	60 - 140
		D8-TOLUENE (sur.)	2012/10/20		108	%	60 - 140
		• •	2012/10/20		98	%	60 - 140
		Benzene Toluene	2012/10/20		102	%	60 - 140
			2012/10/20		115	%	60 - 140
		Ethylbenzene	2012/10/20		111	%	60 - 140
		m & p-Xylene	2012/10/20		105	%	60 - 140
		o-Xylene			84	%	60 - 140
		Methyl-tert-butylether (MTBE)	2012/10/20		116	%	60 - 140
	On the of Disorts	(C6-C10)	2012/10/20		101	%	60 - 140
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/10/20			%	30 - 130
		D10-ETHYLBENZENE (sur.)	2012/10/20		109		
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/20		83	%	60 - 140
		D8-TOLUENE (sur.)	2012/10/20		107	%	60 - 140
		Benzene	2012/10/20		97	%	60 - 140
		Toluene	2012/10/20		100	%	60 - 140
		Ethylbenzene	2012/10/20		113	%	60 - 140
		m & p-Xylene	2012/10/20		109	%	60 - 140
		o-Xylene	2012/10/20		103	%	60 - 140
		Methyl-tert-butylether (MTBE)	2012/10/20		83	%	60 - 140
		(C6-C10)	2012/10/20		87	%	60 - 140
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/10/20		103	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2012/10/20		107	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/20		89	%	60 - 140
		D8-TOLUENE (sur.)	2012/10/20		106	%	60 - 140
		Benzene	2012/10/20	<0.0050		mg/kg	
		Toluene	2012/10/20	< 0.020		mg/kg	
		Ethylbenzene	2012/10/20	<0.010		mg/kg	
		Xylenes (Total)	2012/10/20	< 0.040		mg/kg	
		m & p-Xylene	2012/10/20	< 0.040		mg/kg	
		o-Xylene	2012/10/20	<0.020		mg/kg	
		Methyl-tert-butylether (MTBE)	2012/10/20	< 0.10		mg/kg	
		F1 (C6-C10) - BTEX	2012/10/20	<10		mg/kg	
		(C6-C10)	2012/10/20	<10		mg/kg	
	RPD	Benzene	2012/10/20	NC		%	50
	NO	Toluene	2012/10/20	NC		%	50
		Ethylbenzene	2012/10/20	NC		%	50
		Xylenes (Total)	2012/10/20	NC		%	50
		m & p-Xylene	2012/10/20	NC		%	50
		•	2012/10/20	NC		%	50
		o-Xylene		NC		%	N/A
		Methyl-tert-butylether (MTBE)	2012/10/20			%	50
		F1 (C6-C10) - BTEX	2012/10/20	NC NC			50
00000404844		(C6-C10)	2012/10/20	NC	70	%	
6263340 HW4	Matrix Spike	O-TERPHENYL (sur.)	2012/10/19		76	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/10/19		81	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2012/10/19		87	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2012/10/19		96	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/10/19		79	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2012/10/19		86	%	80 - 120
		F3 (C16-C34 Hydrocarbons)	2012/10/19		92	%	80 - 12
		F4 (C34-C50 Hydrocarbons)	2012/10/19		92	%	80 - 120
	Method Blank	O-TERPHENYL (sur.)	2012/10/19		86	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2012/10/19	<20		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2012/10/19	<20		mg/kg	



Attention: Adam Wickman

Client Project #:

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB293842

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6263340 HW4	Method Blank	F4 (C34-C50 Hydrocarbons)	2012/10/19	<20		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2012/10/19	NC		%	50
		F3 (C16-C34 Hydrocarbons)	2012/10/19	NC		%	50
		F4 (C34-C50 Hydrocarbons)	2012/10/19	NC		%	50
5263346 ML8	Method Blank	Moisture	2012/10/19	<0.3		%	
	RPD	Moisture	2012/10/19	12.6		%	20
6268164 CG5	Method Blank	Moisture	2012/10/20	<0.30		%	
	RPD	Moisture	2012/10/20	2,7		%	20
5275009 AC2	Matrix Spike	1,2-dichloroethane	2012/10/22	,	116	%	60 - 140
22.0000 7.02	Matrix Opino	1,2-dibromoethane	2012/10/22		118	%	60 - 140
	Spiked Blank	1,2-dishloroethane	2012/10/22		105	%	60 - 140
	Opined Diann	1,2-dibromoethane	2012/10/22		101	%	60 - 140
	Method Blank	1,2-dichloroethane	2012/10/22	<0.025	101		00 - 140
	MIRITOR DISTIN	1,2-dichlorosthane		<0.025		mg/kg	
	DDD	·	2012/10/22			mg/kg	40
2075474 51	RPD	1,2-dichloroethane	2012/10/22	NC	400	%	40
6275171 DJ	Matrix Spike	Total Lead (Pb)	2012/10/23		100	%	75 - 125
	QC Standard	Total Lead (Pb)	2012/10/23		94	%	70 - 130
	Spiked Blank	Total Lead (Pb)	2012/10/23	0.40	96	%	75 - 125
	Method Blank	Total Lead (Pb)	2012/10/23	<0.10		mg/kg	
	RPD	Total Lead (Pb)	2012/10/23	3.8		%	35
3275174 NS6	Spiked Blank	Soluble (2:1) pH	2012/10/24		102	%	96 - 104
	RPD	Soluble (2:1) pH	2012/10/24	0.5		%	20
3275439 DJ	Matrix Spike	Total Lead (Pb)	2012/10/23		96	%	75 - 125
	QC Standard	Total Lead (Pb)	2012/10/23		99	%	70 - 130
	Spiked Blank	Total Lead (Pb)	2012/10/23		99	%	75 - 125
	Method Blank	Total Lead (Pb)	2012/10/23	<0.10		mg/kg	
	RPD	Total Lead (Pb)	2012/10/23	0.2		%	35
3275444 NS6	Spiked Blank	Soluble (2:1) pH	2012/10/24		102	%	96 - 104
	RPD	Soluble (2:1) pH	2012/10/24	2,7		%	20
3277386 KPA	Matrix Spike	1,4-Difluorobenzene (sur.)	2012/10/24		104	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/10/24		96	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2012/10/24		87	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/24		100	%	70 - 130
		Benzene	2012/10/24		92	%	60 - 140
		Toluene	2012/10/24		90	%	60 - 140
		Ethylbenzene	2012/10/24		88	%	60 - 140
		•	2012/10/24		84	%	60 - 140
		m & p-Xylene			86		
	Outland Disaste	o-Xylene	2012/10/24			%	60 - 140
	Spiked Blank	1,4-Difluorobenzene (sur.)	2012/10/24		105	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/10/24		97	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2012/10/24		80	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/24		99	%	70 - 130
		Benzene	2012/10/24		84	%	60 - 140
		Toluene	2012/10/24		84	%	60 - 140
		Ethylbenzene	2012/10/24		82	%	60 - 140
		m & p-Xylene	2012/10/24		79	%	60 - 140
		o-Xylene	2012/10/24		78	%	60 - 140
		(C6-C10)	2012/10/24		81	%	60 - 140
	Method Blank	1,4-Difluorobenzene (sur.)	2012/10/24		104	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/10/24		99	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2012/10/24		86	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/24		103	%	70 - 130
		Methyl-tert-butylether (MTBE)	2012/10/24	<0.10		mg/kg	. 5 100
		Benzene	2012/10/24	<0.0050		mg/kg	
		Toluene	2012/10/24	<0.020		mg/kg	
		LOIDELLE	20 121 10124	~0.020		mg/Ng	



Attention: Adam Wickman

Client Project #:

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB293842

QA/QC			Date				
Batch			Analyzed			LINUTO	0011019
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6277386 KPA	Method Blank	Ethylbenzene	2012/10/24	<0.010		mg/kg	
		m & p-Xylene	2012/10/24	< 0.040		mg/kg	
		o-Xylene	2012/10/24	<0.040		mg/kg	
		Xylenes (Total)	2012/10/24	<0.040		mg/kg	
		(C6-C10)	2012/10/24	<10		mg/kg	
	RPD	Benzene	2012/10/24	NC		%	40
		Toluene	2012/10/24	NC		%	40
		Ethylbenzene	2012/10/24	NC		%	40
		m & p-Xylene	2012/10/24	NC		%	40
		o-Xylene	2012/10/24	NC		%	4(
		Xylenes (Total)	2012/10/24	NC		%	40
		(C6-C10)	2012/10/24	NC		%	40
6282437 KPA	Matrix Spike	1,2-dichloroethane	2012/10/24		82	%	60 - 140
		1,2-dibromoethane	2012/10/24		88	%	60 - 140
	Spiked Blank	1,2-dichloroethane	2012/10/23		85	%	60 - 14
	•	1,2-dibromoethane	2012/10/23		85	%	60 - 14
	Method Blank	1,2-dichloroethane	2012/10/23	<0.025		mg/kg	
		1,2-dibromoethane	2012/10/23	<0.025		mg/kg	
	RPD	1,2-dichloroethane	2012/10/24	NC		%	4
		1,2-dibromoethane	2012/10/24	NC		%	4
3284383 IT1	Matrix Spike	O-TERPHENYL (sur.)	2012/10/24		94	%	50 - 13
02010001111		F2 (C10-C16 Hydrocarbons)	2012/10/24		93	%	50 - 13
		F3 (C16-C34 Hydrocarbons)	2012/10/24		103	%	50 - 13
		F4 (C34-C50 Hydrocarbons)	2012/10/24		103	%	50 - 13
		Reached Baseline at C50	2012/10/24		YES	%	N/
	Spiked Blank	O-TERPHENYL (sur.)	2012/10/24		88	%	50 - 13
	Opiniou Biaini	F2 (C10-C16 Hydrocarbons)	2012/10/24		87	%	80 - 12
		F3 (C16-C34 Hydrocarbons)	2012/10/24		96	%	80 - 12
		F4 (C34-C50 Hydrocarbons)	2012/10/24		107	%	80 - 12
		Reached Baseline at C50	2012/10/24		YES	%	N/
	Method Blank	O-TERPHENYL (sur.)	2012/10/24		89	%	50 - 13
	Wickling Dialik	F2 (C10-C16 Hydrocarbons)	2012/10/24	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2012/10/24	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2012/10/24	<10		mg/kg	
		Reached Baseline at C50	2012/10/24	YES		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2012/10/24	NC		%	4
	KED	F3 (C16-C34 Hydrocarbons)	2012/10/24	5.3		%	2
		F4 (C34-C50 Hydrocarbons)	2012/10/24	6.9		%	4
		Reached Baseline at C50	2012/10/24	NC		%	
OCCETO DNO	Mately Culles	O-TERPHENYL (sur.)	2012/10/25	110	94	%	50 - 13
3286579 PN2	Matrix Spike	, , ,	2012/10/25		93	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2012/10/25		97	%	50 - 13
		F3 (C16-C34 Hydrocarbons)			98	%	50 - 13
	0 II 1 1 1 1 1 1 1 1 1	F4 (C34-C50 Hydrocarbons)	2012/10/25		96	% %	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2012/10/25		95	% %	80 - 12
		F2 (C10-C16 Hydrocarbons)	2012/10/25		98		80 - 12
		F3 (C16-C34 Hydrocarbons)	2012/10/25			%	80 - 12
		F4 (C34-C50 Hydrocarbons)	2012/10/25		100	%	
	Method Blank	O-TERPHENYL (sur.)	2012/10/25	40.1	103	% ~~~	50 - 1
		F2 (C10-C16 Hydrocarbons)	2012/10/25		RDL=10	mg/kg	
		F3 (C16-C34 Hydrocarbons)	2012/10/25	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2012/10/25	<10		mg/kg	
		Reached Baseline at C50	2012/10/25	YES		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2012/10/25	NC		%	4
		F3 (C16-C34 Hydrocarbons)	2012/10/25	NC		%	4
		F4 (C34-C50 Hydrocarbons)	2012/10/25	NC		%	4



Attention: Adam Wickman

Client Project #:

P,O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB293842

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6286579 PN2	RPD	Reached Baseline at C50	2012/10/25	NC		%	50

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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.



Validation Signature Page

Maxxam Job #: B293842	
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).	

Andy Lu, Kata Validation Coordinator

Bully to

Hua Wo, Organics Supervisor

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

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これた (よいち. Maxxam Analytics, Unit D - 675 Berry Street, Winnipeg, MB, R3H 1A7, Tel: (204) 772-7276, Fax: (204) 772-2386 www.maxxam.ca

CHAIN OF CUSTODY for SUNCOR ENERGY Second Service Com (E-41-1) RESIDENCE OF CELLSES Combe Parsins Coreer [] :·· Jacken wie Knan (persons ich Contract 图 Apple Jew Department تالاتة 0 :50 Courte 2011-489-0914 1 N/A 7. 40 6 tái. WATER CONTRACTOR DOWNSTREAM \$10,5144.54 I RUSH (Contact to to receive) T SUAY D ! DAY Cardolnors Sutinified SERVICE SAINE DAY REQUESTED not Anniver Date Required: REGULAR S Dasi Š Sanior Surices Advisor. HOLD Late Time Spread 101 ショマリ り 3 W. S. 200 WALKE 84-30-12-18 'n Digital 101 13/10/11 1013 UPSTREAM 2 13/14/16 10:15 .5.F h 1/10/11 11:20 \$44. 44 12/4/16 11.15 1543 m 11/15/15 10 12 'n 작가 발표를 2 DUP-31 Sal Wolf a le Senier Sunce: Advisor देश है अपूर्व 學達到學頭 aug bout तेग देखा (Pro

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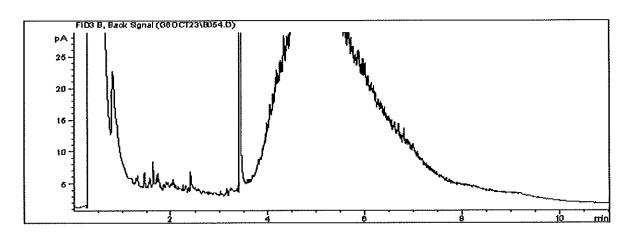


O'CONNOR ASSOCIATES ENVIRONMENTAL

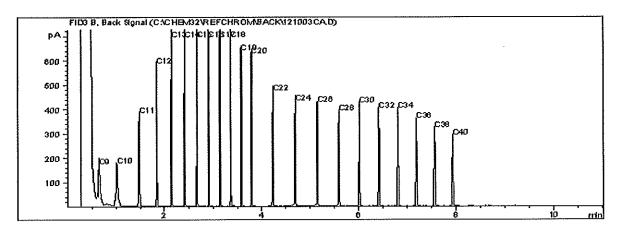
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-30-1.2-1.8

CCME Hydrocarbons (F2-F4 in soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8		C22
Varsol:	Ç8	_	C12	Lubricating Oils:	Ç20	-	C40
Kerosene:	C7	_	C16	Crude Oils:	СЗ		C60+

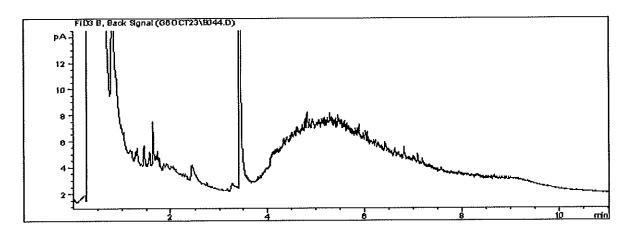


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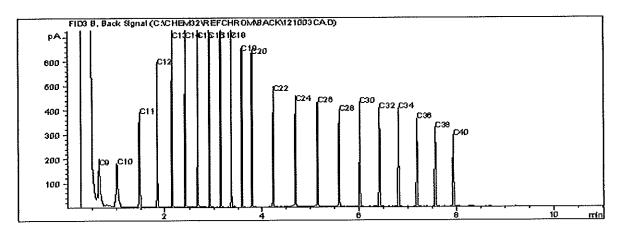
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-30-2.4-3.1

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 C12	Diesel:	C8	C22
Varsol:	C8 - C12	Lubricating Oils:	C20 -	C40
Kerosene:	C7 - C16	Crude Oils:	C3 -	C60+

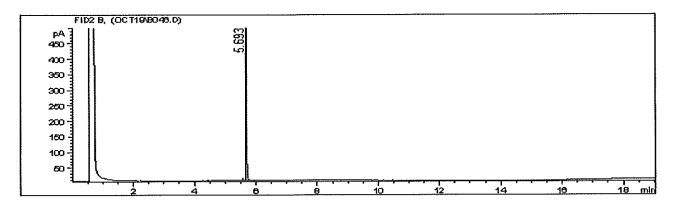


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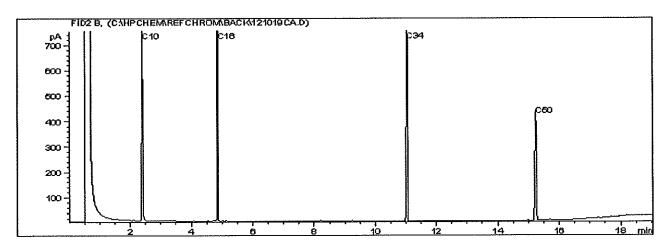
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-30-3.7-4.3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8	-	C22
Varsol:	C8	-	C12	Lubricating Oils:	C20	-	C40
Rerosene:	C7	-	C16	Crude Oils:	СЗ	_	C60+

Page 1 of 1

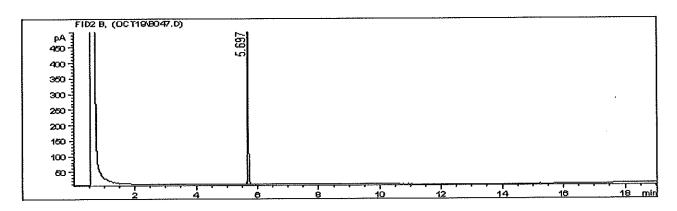


O'CONNOR ASSOCIATES ENVIRONMENTAL

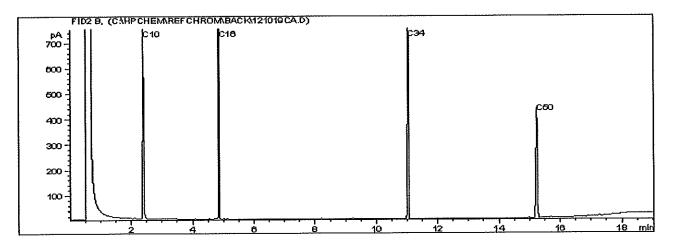
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-31-0.6-1.2

CCME Hydrocarbons (F2-F4 in soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8		C22
Varsol:	C8	-	C12	Lubricating Oils:	C20		C40
Kerosene:	C7	-	C16	Crude Oils:	СЗ	-	C60+

Page 1 of 1

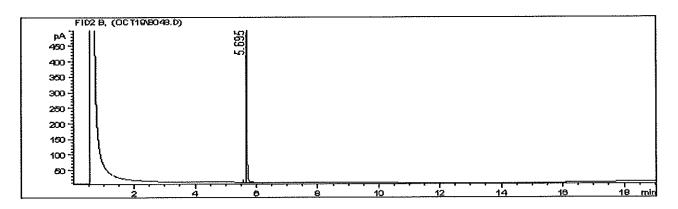


O'CONNOR ASSOCIATES ENVIRONMENTAL

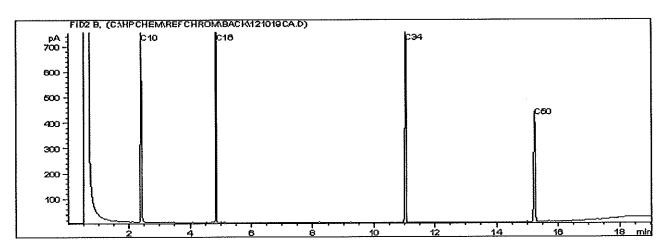
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-31-1.8-2.4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8		C22
Varsol:	C8	-	C12	Lubricating Oils:	C20		C40
Rerosene:	C7	_	C16	Crude Oils:	С3	-	C60+

Page 1 of 1

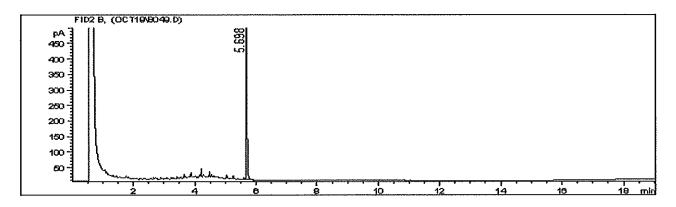


O'CONNOR ASSOCIATES ENVIRONMENTAL

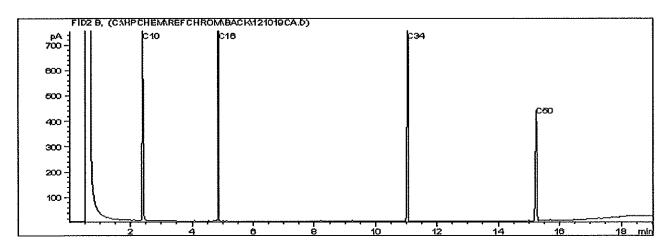
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-31-3.1-3.7

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8	_	C22
Varsol:	C8	-	C12	Lubricating Oils:	C20	_	C40
Rerosene:	C7	-	C16	Crude Oils:	СЗ	-	C60+

Page 1 of 1

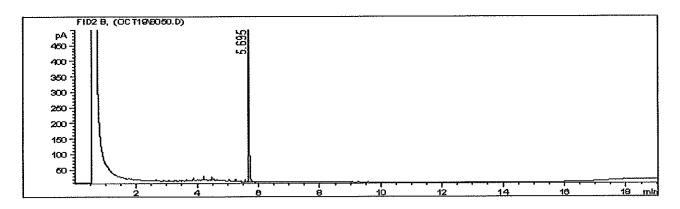


O'CONNOR ASSOCIATES ENVIRONMENTAL

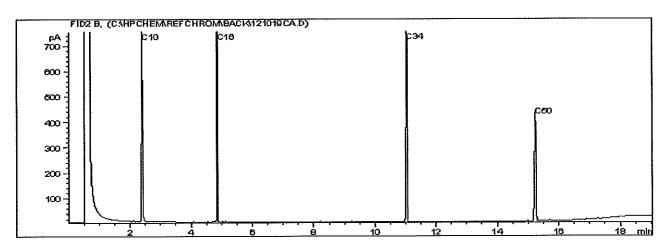
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-31-4.3-4.9

CCME Hydrocarbons (F2-F4 in soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8	_	C22
Varsol:	68	_	C12	Lubricating Oils:	C20		C40
Kerosene:	C7	-	C16	Crude Oils:	C3	-	C60+

Page 1 of 1

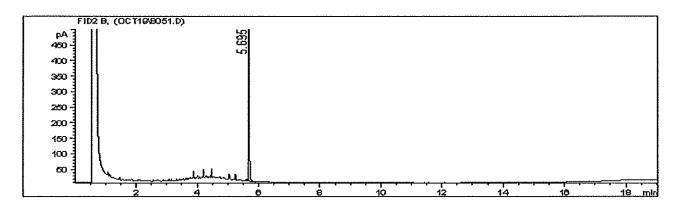


O'CONNOR ASSOCIATES ENVIRONMENTAL

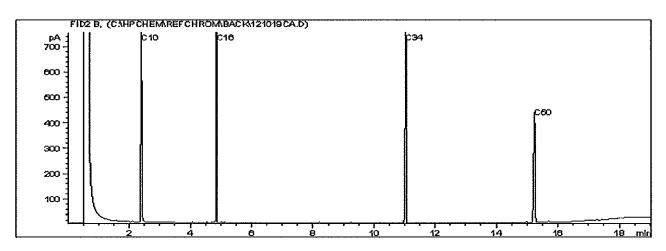
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: DUP-31

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8		C22
Varsol:	C8	_	C12	Lubricating Oils:	C20		C40
Rerosene:	C7	_	C16	Crude Oils:	С3	_	C60+

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: <u>Parsons</u>	Sampling Date: <u>2012/10/16</u>					
Location: 208 St. Anne's Road, Winnipeg, MB	Laboratory: Maxxam Analytics, Winnipeg					
Consultant Project Number: 10-1177.100	Sample Submission Number: <u>B293842</u>					
Are All Laboratory QC Samples Within Acceptance Criteria	(Yes, No, Not Applicable)?					
Yes No	NA Comments					
Instrument Surrogate Recovery Extraction Surrogate Recovery Method Blank Concentration Matrix Duplicate RPD Matrix Spike Recovery Lab Control Sample Recovery	All lab QC met acceptance criteria. X X					
Are All Field QC Samples Within Alert Limits (Yes, No, No	t Applicable)?					
Yes No	NA Comments					
Field Blank Concentration Trip Blank Concentration Field Duplicate RPD X	X All field QC met alert limits. X					
Has CoA been signed off (Yes/No)?: Has lab warranted all tests were in statistical control in CoA Has lab warranted all tests were analyzed following SOP's in Were all samples analyzed within hold times (Yes/No)?: All volatiles samples methanol extracted, if required, within Is Chain of Custody completed and signed (Yes/No)?: Were sample temperatures acceptable when they reached lab	CoA (Yes, No or N/A)?: Yes 48 hours (Yes, No or N/A)?: Yes Yes Yes					
Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)						
Date Issued:	Date of Response:					
Is data considered to be reliable (Yes/No)?: If answer is "No", describe and provide rationale:	Yes					
Data Reviewed by (Print): <u>Alexia Reske-Naurocki</u> Review Date: <u>2013/02/21</u> Revision Date (if applicable):	Data Reviewed by (Signature):					



Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S008503

Attention: Adam Wickman

O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2012/10/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B293849 Received: 2012/10/17, 15:00

Sample Matrix: Soil # Samples Received: 7

		Date	Date	
Analyses	Quantity		Analyzed Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	1	2012/10/17	2012/10/20 WINSOP-00054	EPA8260C/CCME PHCCWS
			WINSOP-00055	
BTEX/F1 by HS GC/MS (MeOH extract)	3	2012/10/18	2012/10/20 WINSOP-00054	EPA8260C/CCME PHCCWS
			WINSOP-00055	
BTEX/F1 by HS GC/MS (MeOH extract)	3	2012/10/19	2012/10/23 WINSOP-00054	EPA8260C/CCME PHCCWS
			WINSOP-00055	
CCME Hydrocarbons (F2-F4 in soil)	1	2012/10/17	2012/10/19 WINSOP-00056	CCME PHC-CWS
CCME Hydrocarbons (F2-F4 in soil)	3	2012/10/18	2012/10/19 WINSOP-00056	CCME PHC-CWS
CCME Hydrocarbons (F2-F4 in soil)	3	2012/10/19	2012/10/22 WINSOP-00056	CCME PHC-CWS
CCME Hydrocarbons (F4G in soil)	1	2012/10/17	2012/10/24	CCME PHC-CWS
Elements by ICPMS (total) (1)	4	2012/10/22	2012/10/23 BBY7SOP-00001	EPA 6020A
Elements by ICPMS (total) (1)	3	2012/10/23	2012/10/23 BBY7SOP-00001	EPA 6020A
Moisture	4	N/A	2012/10/19 WIN SOP-00060	Carter Method 51.2
Moisture	3	N/A	2012/10/22 WIN SOP-00060	Carter Method 51.2
pH (2:1 DI Water Extract) (1)	3	2012/10/23	2012/10/23 BBY6SOP-00028	Carter, SSMA 16.2
pH (2:1 DI Water Extract) (1)	4	2012/10/24	2012/10/24 BBY6SOP-00028	Carter, SSMA 16.2
VOCs in Soil by HS GC/MS (1)	5	2012/10/19	2012/10/22 BBY8-SOP-0009	EPA 8260C
VOCs in Soil by HS GC/MS (1)	2	2012/10/19	2012/10/23 BBY8-SOP-0009	EPA 8260C

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Janelle Kochan

(panelle Kochan—26 Oct 2012 15:53:49 -05:00

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

Janelle Kochan, B.Sc., Project Manager, Email: JKochan@maxxam.ca Phone# (204) 772-7276 Ext:2209



Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Your C.O.C. #: S008503

Attention: Adam Wickman

O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2012/10/25

CERTIFICATE OF ANALYSIS -2-

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



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

BTEX/F1-F4 IN SOIL (SOIL)

					WALL TO SERVICE AND ADDRESS OF THE PARTY OF		-
Maxxam ID		ET5068		ET5069	ET5069		
Sampling Date		2012/10/16	1 1	2012/10/16 12:00	2012/10/16 12:00		
COC Number		11:45 S008503		S008503	S008503		
OOC Number	UNITS	BH-32-1.2-1.8	QC Batch	BH-32-2.4-3.1	BH-32-2.4-3.1	RDL	QC Batcl
					Lab-Dup		
Physical Properties							
Moisture	%	12	6263346	28	N/A	0.3	6264203
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	130	6263340	<20	<20	20	6264179
F3 (C16-C34 Hydrocarbons)	mg/kg	310	6263340	<20	<20	20	6264179
F4 (C34-C50 Hydrocarbons)	mg/kg	2100	6263340	<20	<20	20	6264179
Reached Baseline at C50	mg/kg	No	6263340	Yes	Yes	N/A	6264179
Volatiles							
Benzene	mg/kg	0.075	6263271	<0.0050	<0.0050	0.0050	6264177
Toluene	mg/kg	0.046	6263271	<0.020	<0.020	0.020	6264177
Ethylbenzene	mg/kg	0.078	6263271	<0.010	<0.010	0.010	6264177
Xylenes (Total)	mg/kg	2.9	6263271	<0.040	<0.040	0.040	6264177
m & p-Xylene	mg/kg	2.6	6263271	<0.040	<0.040	0.040	6264177
o-Xylene	mg/kg	0.22	6263271	<0.020	<0.020	0.020	6264177
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	6263271	<0.10	<0.10	0.10	6264177
F1 (C6-C10) - BTEX	mg/kg	36	6263271	<10	<10	10	6264177
(C6-C10)	mg/kg	39	6263271	<10	<10	10	6264177
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	103	6263271	103	103	N/A	6264177
D10-ETHYLBENZENE (sur.)	%	113	6263271	110	103	N/A	6264177
D4-1,2-DICHLOROETHANE (sur.)	%	84	6263271	89	99	N/A	6264177
D8-TOLUENE (sur.)	%	106	6263271	108	103	N/A	6264177
O-TERPHENYL (sur.)	%	86	6263340	92	98	N/A	6264179

N/A = Not Applicable

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

BTEX/F1-F4 IN SOIL (SOIL)

	ET5070	ET5071		ET5072		
	2012/10/16	2012/10/16		2012/10/16		
			<u> </u>			
UNITS	BH-32-3.7-4.3	BH-33-1.2-1.8	QC Batch	DUP-33	RDL	QC Batch
		T	1 1			Γ
%	31	20	6264203	19	0.3	6269454
mg/kg	98	<20	6264179	<20	20	6269450
mg/kg	<20	24	6264179	<20	20	6269450
mg/kg	<20	<20	6264179	<20	20	6269450
mg/kg	Yes	Yes	6264179	Yes	N/A	6269450
						1
mg/kg	<0.0050	0.17	6264177	0.29	0.0050	6269408
mg/kg	<0.020	<0.020	6264177	<0.020	0.020	6269408
mg/kg	<0.010	0.18	6264177	0.26	0.010	6269408
mg/kg	<0.040	0.30	6264177	0.49	0.040	6269408
mg/kg	<0.040	0.30	6264177	0.49	0.040	6269408
mg/kg	<0.020	<0.020	6264177	<0.020	0.020	6269408
mg/kg	<0.10	<0.10	6264177	<0.10	0.10	6269408
mg/kg	<10	11	6264177	<10	10	6269408
mg/kg	<10	11	6264177	<10	10	6269408
%	102	101	6264177	102	N/A	6269408
%	115	106	6264177	90	N/A	6269408
%	80	86	6264177	140	N/A	6269408
%	110	106	6264177	91	N/A	6269408
%	93	89	6264179	91	N/A	6269450
	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	2012/10/16 12:15 S008503 UNITS BH-32-3.7-4.3 % 31 mg/kg 98 mg/kg <20 mg/kg <20 mg/kg Yes mg/kg <0.0050 mg/kg <0.020 mg/kg <0.040 mg/kg <0.040 mg/kg <0.020 mg/kg <10.000 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10 mg/kg <10	2012/10/16 12:30 S008503 S00	2012/10/16	2012/10/16	2012/10/16

N/A = Not Applicable
RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

BTEX/F1-F4 IN SOIL (SOIL)

Maxxam ID		ET5072	ET5073	ET5074	ET5074		
Sampling Date		2012/10/16	2012/10/16	2012/10/16	2012/10/16		
		12:30	12:45	13:00 S008503	13:00 S008503	-	
COC Number	UNITS	S008503 DUP-33 Lab-Dup	S008503 BH-33-2,4-3,1	BH-33-3.7-4.3	BH-33-3.7-4.3	RDL	QC Batch
	UNITS	DOF-33 Cap-Dup	B11-00-2.4-0.1	B11-00-0.7-4.0	Lab-Dup	INDE	a Baton
Physical Properties							
Moisture	%	N/A	32	35	35	0.3	6269454
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<20	<20	<20	N/A	20	6269450
F3 (C16-C34 Hydrocarbons)	mg/kg	<20	<20	<20	N/A	20	6269450
F4 (C34-C50 Hydrocarbons)	mg/kg	<20	<20	<20	N/A	20	6269450
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	N/A	N/A	6269450
Volatiles							
Benzene	mg/kg	0.25	0.013	<0.0050	N/A	0.0050	6269408
Toluene	mg/kg	<0.020	<0.020	<0.020	N/A	0.020	6269408
Ethylbenzene	mg/kg	0.33	<0.010	<0.010	N/A	0.010	6269408
Xylenes (Total)	mg/kg	0.61	<0.040	<0.040	N/A	0.040	6269408
m & p-Xylene	mg/kg	0.61	<0.040	<0.040	N/A	0.040	6269408
o-Xylene	mg/kg	<0.020	<0.020	<0.020	N/A	0.020	6269408
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	N/A	0.10	6269408
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	N/A	10	6269408
(C6-C10)	mg/kg	<10	<10	<10	N/A	10	6269408
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	99	100	99	N/A	N/A	6269408
D10-ETHYLBENZENE (sur.)	%	115	113	115	N/A	N/A	6269408
D4-1,2-DICHLOROETHANE (sur.)	%	90	93	89	N/A	N/A	6269408
D8-TOLUENE (sur.)	%	105	103	105	N/A	N/A	6269408
O-TERPHENYL (sur.)	%	81	69	82	N/A	N/A	6269450

N/A = Not Applicable RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		ET5068	ET5069	ET5070	ET5071		
Sampling Date		2012/10/16	2012/10/16	2012/10/16	2012/10/16		
		11:45	12:00	12:15	12:30		
COC Number		S008503	S008503	S008503	S008503		
	UNITS	BH-32-1.2-1.8	BH-32-2.4-3.1	BH-32-3.7-4.3	BH-33-1.2-1.8	RDL	QC Batch
Dhysical Bronortics						1	
Physical Properties							

RDL = Reportable Detection Limit

	UNITS	DUP-33	BH-33-2.4-3.1	BH-33-3.7-4.3	RDL	QC Batch
COC Number	11111770	S008503	S008503	S008503		000.1
Sampling Date		2012/10/16 12:30	2012/10/16 12:45	2012/10/16 13:00		
Maxxam ID		ET5072	ET5073	ET5074		

Soluble (2:1) pH	pH Units	8.60	8.21	8.04	0.010	6280960
dolable (2.1) pri	prionto	0.00	0.21	0.04	10.010	0200000

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		ET5068		
Sampling Date		2012/10/16		
STOREST OF BUILDING STORES WAS A		11:45		
COC Number		S008503		
	UNITS	BH-32-1.2-1.8	RDL	QC Batch
Ext. Pet. Hydrocarbon				

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID	Ĭ	ET5068	ET5069	ET5070	ET5071		
Sampling Date		2012/10/16	2012/10/16	2012/10/16	2012/10/16		
		11:45	12:00	12:15	12:30		
COC Number		S008503	S008503	S008503	S008503		
	UNITS	BH-32-1.2-1.8	BH-32-2.4-3.1	BH-32-3.7-4.3	BH-33-1.2-1.8	RDL	QC Batch
Total Metals by ICPMS							

Maxxam ID		ET5072	ET5073	ET5074		
Sampling Date		2012/10/16 12:30	2012/10/16 12:45	2012/10/16 13:00		
COC Number		S008503	S008503	S008503		
	UNITS	DUP-33	BH-33-2.4-3.1	BH-33-3.7-4.3	RDI	QC Batch
	ONITO	D01-33	D11-33-2,4-3,1	D11-00-0.1-4.0	INDL	NO DUTO
Total Metals by ICPMS		D01-33	B11-33-2,4-3.1	B11-30-0.1-4.0		NO Baton



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		ET5068	ET5069	ET5070		ET5071		
Sampling Date		2012/10/16	2012/10/16	2012/10/16		2012/10/16		
		11:45	12:00	12:15		12:30		
COC Number		S008503	S008503	S008503		S008503		
	UNITS	BH-32-1.2-1.8	BH-32-2.4-3.1	BH-32-3.7-4.3	QC Batch	BH-33-1.2-1.8	RDL	QC Batch
Volatiles								
1,2-dichloroethane	mg/kg	<0.025	<0.025	<0.025	6275009	<0.025	0.025	6282437
The diomorpounding		<0.025	<0.025	<0.025	6275009	<0.025	0.025	6282437
1.2-dibromoethane	mg/kg							

Maxxam ID	T	ET5072		ET5073		ET5074		
Sampling Date		2012/10/16		2012/10/16		2012/10/16		
		12:30		12:45		13:00		
COC Number		S008503		S008503		S008503		
	UNITS	DUP-33	QC Batch	BH-33-2.4-3.1	QC Batch	BH-33-3.7-4.3	RDL	QC Batch
Volatiles							-	
Volatiles								
1,2-dichloroethane	mg/kg	<0.025	6275009	<0.025	6282437	<0.025	0.025	6275009
1,2-dibromoethane	mg/kg	< 0.025	6275009	<0.025	6282437	< 0.025	0.025	6275009



O'CONNOR ASSOCIATES ENVIRONMENTAL

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AW

Package 1 6.2°C Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

Results relate only to the items tested.



Attention: Adam Wickman

Client Project #: P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB293849

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limit
3263271 HW4	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2012/10/20		101	%	60 - 14
		D10-ETHYLBENZENE (sur.)	2012/10/20		110	%	30 - 13
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/20		82	%	60 - 14
		D8-TOLUENE (sur.)	2012/10/20		108	%	60 - 14
		Benzene	2012/10/20		98	%	60 - 14
		Toluene	2012/10/20		102	%	60 - 14
		Ethylbenzene	2012/10/20		115	%	60 - 14
		m & p-Xylene	2012/10/20		111	%	60 - 14
		o-Xylene	2012/10/20		105	%	60 - 14
		Methyl-tert-butylether (MTBE)	2012/10/20		84	%	60 - 14
		(C6-C10)	2012/10/20		116	%	60 - 14
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/10/20		101	%	60 - 14
	Spikeu bialik	D10-ETHYLBENZENE (sur.)	2012/10/20		109	%	30 - 13
		[12] [12] [12] [12] [12] [12] [13] [13] [13] [13] [13] [13] [13] [13	2012/10/20		83	%	60 - 14
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/20		107	%	60 - 14
		D8-TOLUENE (sur.)			97	%	60 - 14
		Benzene	2012/10/20			%	60 - 14
		Toluene	2012/10/20		100		
		Ethylbenzene	2012/10/20		113	%	60 - 1
		m & p-Xylene	2012/10/20		109	%	60 - 1
		o-Xylene	2012/10/20		103	%	60 - 1
		Methyl-tert-butylether (MTBE)	2012/10/20		83	%	60 - 1
		(C6-C10)	2012/10/20		87	%	60 - 1
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/10/20		103	%	60 - 1
		D10-ETHYLBENZENE (sur.)	2012/10/20		107	%	30 - 1
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/20		89	%	60 - 1
		D8-TOLUENE (sur.)	2012/10/20		106	%	60 - 1
		Benzene	2012/10/20	< 0.0050		mg/kg	
		Toluene	2012/10/20	< 0.020		mg/kg	
		Ethylbenzene	2012/10/20	< 0.010		mg/kg	
		Xylenes (Total)	2012/10/20	< 0.040		mg/kg	
		m & p-Xylene	2012/10/20	< 0.040		mg/kg	
		o-Xylene	2012/10/20	< 0.020		mg/kg	
		Methyl-tert-butylether (MTBE)	2012/10/20	< 0.10		mg/kg	
		F1 (C6-C10) - BTEX	2012/10/20	<10		mg/kg	
		(C6-C10)	2012/10/20	<10		mg/kg	
	RPD	The second of th	2012/10/20	NC		%	
	RPD	Benzene		NC		%	
		Toluene	2012/10/20			%	
		Ethylbenzene	2012/10/20	NC		%	
		Xylenes (Total)	2012/10/20	NC		%	
		m & p-Xylene	2012/10/20	NC			
		o-Xylene	2012/10/20	NC		%	
		Methyl-tert-butylether (MTBE)	2012/10/20	NC		%	٨
		F1 (C6-C10) - BTEX	2012/10/20	NC		%	
		(C6-C10)	2012/10/20	NC		%	
263340 HW4	Matrix Spike	O-TERPHENYL (sur.)	2012/10/19		76	%	50 - 1
		F2 (C10-C16 Hydrocarbons)	2012/10/19		81	%	50 - 1
		F3 (C16-C34 Hydrocarbons)	2012/10/19		87	%	50 - 1
		F4 (C34-C50 Hydrocarbons)	2012/10/19		96	%	50 - 1
	Spiked Blank	O-TERPHENYL (sur.)	2012/10/19		79	%	50 - 1
		F2 (C10-C16 Hydrocarbons)	2012/10/19		86	%	80 - 1
		F3 (C16-C34 Hydrocarbons)	2012/10/19		92	%	80 - 1
		F4 (C34-C50 Hydrocarbons)	2012/10/19		92	%	80 - 1
	Method Blank	O-TERPHENYL (sur.)	2012/10/19		86	%	50 - 1
	Method Dialik	F2 (C10-C16 Hydrocarbons)	2012/10/19	<20	50	mg/kg	
		F3 (C16-C34 Hydrocarbons)	2012/10/19	<20		mg/kg	
		ra (C10-C34 riyurocarbona)	2012/10/19	~20		iliging	



Attention: Adam Wickman

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208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB293849

QA/QC			Date				
Batch			Analyzed	graner	17 <u>2-0</u> 0		
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limit
263340 HW4	Method Blank	F4 (C34-C50 Hydrocarbons)	2012/10/19	<20		mg/kg	-
	RPD	F2 (C10-C16 Hydrocarbons)	2012/10/19	NC		%	5
		F3 (C16-C34 Hydrocarbons)	2012/10/19	NC		%	5
		F4 (C34-C50 Hydrocarbons)	2012/10/19	NC		%	5
263346 ML8	Method Blank	Moisture	2012/10/19	<0.3		%	
	RPD	Moisture	2012/10/19	12.6		%	2
264177 HW4	Matrix Spike						
	[ET5070-01]	4-BROMOFLUOROBENZENE (sur.)	2012/10/19		100	%	60 - 14
		D10-ETHYLBENZENE (sur.)	2012/10/19		116	%	30 - 13
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/19		86	%	60 - 14
		D8-TOLUENE (sur.)	2012/10/19		106	%	60 - 14
		Benzene	2012/10/19		106	%	60 - 14
		Toluene	2012/10/19		107	%	60 - 14
		Ethylbenzene	2012/10/19		123	%	60 - 14
		m & p-Xylene	2012/10/19		117	%	60 - 14
		23.200.200 j. Tj 12.20 TO 40.0 00.0	2012/10/19		111	%	60 - 14
		o-Xylene	2012/10/19		89	%	60 - 14
		Methyl-tert-butylether (MTBE)			86	%	60 - 14
	0 11 1 101 1	(C6-C10)	2012/10/19		101	%	60 - 14
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/10/19			%	30 - 13
		D10-ETHYLBENZENE (sur.)	2012/10/19		100		
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/19		92	%	60 - 14
		D8-TOLUENE (sur.)	2012/10/19		84	%	60 - 1
		Benzene	2012/10/19		98	%	60 - 1
		Toluene	2012/10/19		92	%	60 - 1
		Ethylbenzene	2012/10/19		102	%	60 - 1
		m & p-Xylene	2012/10/19		99	%	60 - 1
		o-Xylene	2012/10/19		96	%	60 - 1
		Methyl-tert-butylether (MTBE)	2012/10/19		85	%	60 - 1
		(C6-C10)	2012/10/19		123	%	60 - 1
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/10/19		100	%	60 - 1
		D10-ETHYLBENZENE (sur.)	2012/10/19		97	%	30 - 1
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/19		103	%	60 - 1
		D8-TOLUENE (sur.)	2012/10/19		81	%	60 - 1
		Benzene	2012/10/19	< 0.0050		mg/kg	
		Toluene	2012/10/19	< 0.020		mg/kg	
		Ethylbenzene	2012/10/19	< 0.010		mg/kg	
		Xylenes (Total)	2012/10/19	< 0.040		mg/kg	
		m & p-Xylene	2012/10/19	< 0.040		mg/kg	
		o-Xylene	2012/10/19	< 0.020		mg/kg	
		Methyl-tert-butylether (MTBE)	2012/10/19	<0.10		mg/kg	
		F1 (C6-C10) - BTEX	2012/10/19	<10		mg/kg	
		(C6-C10)	2012/10/19	<10		mg/kg	
	DDD (ETE000 04)	•	2012/10/19	NC		%	
	RPD [ET5069-01]	Benzene		NC		%	
		Toluene	2012/10/20			%	
		Ethylbenzene	2012/10/20	NC		%	
		Xylenes (Total)	2012/10/20	NC			
		m & p-Xylene	2012/10/20	NC		%	
		o-Xylene	2012/10/20	NC		%	
		Methyl-tert-butylether (MTBE)	2012/10/20	NC		%	N
		F1 (C6-C10) - BTEX	2012/10/20	NC		%	
		(C6-C10)	2012/10/20	NC		%	
264179 HW4					会 彩	20	VE/18 8
	[ET5070-01]	O-TERPHENYL (sur.)	2012/10/19		84	%	50 - 1
		AND THE RESIDENCE OF THE CONTROL OF			00	0.4	F0 4
	- Committee of the Comm	F2 (C10-C16 Hydrocarbons)	2012/10/19		99	% %	50 - 1 50 - 1



Attention: Adam Wickman

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Quality Assurance Report (Continued)

Maxxam Job Number: NB293849

QA/QC			Date				
Batch	00.7		Analyzed	Value	Pagevent	UNITS	QC Limits
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QU LITTIES
6264179 HW4	Matrix Spike [ET5070-01]	F4 (C34-C50 Hydrocarbons)	2012/10/19		95	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/10/19		81	%	50 - 130
	Spiked blatik	F2 (C10-C16 Hydrocarbons)	2012/10/19		98	%	80 - 120
		F3 (C16-C34 Hydrocarbons)	2012/10/19		95	%	80 - 120
		F4 (C34-C50 Hydrocarbons)	2012/10/19		88	%	80 - 120
	Method Blank	O-TERPHENYL (sur.)	2012/10/18		105	%	50 - 130
	Method Didirk	F2 (C10-C16 Hydrocarbons)	2012/10/18	<20	65.5	mg/kg	
		F3 (C16-C34 Hydrocarbons)	2012/10/18	<20		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2012/10/18	<20		mg/kg	
	RPD [ET5069-01]	F2 (C10-C16 Hydrocarbons)	2012/10/19	NC		%	50
	111 5 [210000 01]	F3 (C16-C34 Hydrocarbons)	2012/10/19	NC		%	50
		F4 (C34-C50 Hydrocarbons)	2012/10/19	NC		%	50
6264203 CD3	Method Blank	Moisture	2012/10/19	< 0.3		%	
0201200 000	RPD	Moisture	2012/10/19	1.0		%	20
6269408 HW4		metal.c					
020010011111	[ET5073-01]	4-BROMOFLUOROBENZENE (sur.)	2012/10/23		100	%	60 - 140
	[2.00.00.]	D10-ETHYLBENZENE (sur.)	2012/10/23		111	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/23		96	%	60 - 140
		D8-TOLUENE (sur.)	2012/10/23		103	%	60 - 140
		Benzene	2012/10/23		109	%	60 - 140
		Toluene	2012/10/23		107	%	60 - 140
		Ethylbenzene	2012/10/23		119	%	60 - 14
		m & p-Xylene	2012/10/23		115	%	60 - 140
		o-Xylene	2012/10/23		111	%	60 - 140
		Methyl-tert-butylether (MTBE)	2012/10/23		99	%	60 - 140
		(C6-C10)	2012/10/23		109	%	60 - 140
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2012/10/23		101	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2012/10/23		107	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/23		86	%	60 - 140
		D8-TOLUENE (sur.)	2012/10/23		106	%	60 - 140
		Benzene	2012/10/23		100	%	60 - 140
		Toluene	2012/10/23		100	%	60 - 14
		Ethylbenzene	2012/10/23		113	%	60 - 14
		m & p-Xylene	2012/10/23		109	%	60 - 14
		o-Xylene	2012/10/23		104	%	60 - 14
		Methyl-tert-butylether (MTBE)	2012/10/23		88	%	60 - 14
		(C6-C10)	2012/10/23		111	%	60 - 14
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2012/10/23		100	%	60 - 14
		D10-ETHYLBENZENE (sur.)	2012/10/23		109	%	30 - 13
		D4-1,2-DICHLOROETHANE (sur.)	2012/10/23		87	%	60 - 14 60 - 14
		D8-TOLUENE (sur.)	2012/10/23	10.0050	106	%	60 - 14
		Benzene	2012/10/23	< 0.0050		mg/kg	
		Toluene	2012/10/23	< 0.020		mg/kg	
		Ethylbenzene	2012/10/23	< 0.010		mg/kg	
		Xylenes (Total)	2012/10/23	< 0.040		mg/kg	
		m & p-Xylene	2012/10/23	<0.040 <0.020		mg/kg	
		o-Xylene	2012/10/23	<0.020		mg/kg mg/kg	
		Methyl-tert-butylether (MTBE)	2012/10/23			mg/kg	
		F1 (C6-C10) - BTEX	2012/10/23	<10 <10			
	DDD IETEOZO CA	(C6-C10)	2012/10/23 2012/10/23	13.0		mg/kg %	5
	RPD [ET5072-01]	Benzene		NC		%	5
		Toluene	2012/10/23	23.1		%	5
		Ethylbenzene	2012/10/23 2012/10/23	20.4		%	5
		Xylenes (Total)	2012/10/23	20.4		/0	



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Quality Assurance Report (Continued)

Maxxam Job Number: NB293849

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limit
6269408 HW4	RPD [ET5072-01]	m & p-Xylene	2012/10/23	20.4		%	5
		o-Xylene	2012/10/23	NC		%	5
		Methyl-tert-butylether (MTBE)	2012/10/23	NC		%	N/A
		F1 (C6-C10) - BTEX	2012/10/23	NC		%	5
		(C6-C10)	2012/10/23	NC		%	50
6269450 HW4	Matrix Spike						
	[ET5073-01]	O-TERPHENYL (sur.)	2012/10/22		80	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/10/22		97	%	50 - 13
		F3 (C16-C34 Hydrocarbons)	2012/10/22		104	%	50 - 13
		F4 (C34-C50 Hydrocarbons)	2012/10/22		107	%	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2012/10/22		86	%	50 - 13
	•	F2 (C10-C16 Hydrocarbons)	2012/10/22		95	%	80 - 12
		F3 (C16-C34 Hydrocarbons)	2012/10/22		99	%	80 - 12
		F4 (C34-C50 Hydrocarbons)	2012/10/22		100	%	80 - 12
	Method Blank	O-TERPHENYL (sur.)	2012/10/22		91	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2012/10/22	<20		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2012/10/22	<20		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2012/10/22	<20		mg/kg	
	RPD [ET5072-01]	F2 (C10-C16 Hydrocarbons)	2012/10/22	NC		%	5
	= (=	F3 (C16-C34 Hydrocarbons)	2012/10/22	NC		%	5
		F4 (C34-C50 Hydrocarbons)	2012/10/22	NC		%	5
6269454 ML8	Method Blank	Moisture	2012/10/22	<0.3		%	
OZOSTOT WILD	RPD [ET5074-01]	Moisture	2012/10/22	0.3		%	2
6275009 AC2	Matrix Spike	1,2-dichloroethane	2012/10/22	0.0	116	%	60 - 14
02/0000 AO2	Mutilix Opino	1,2-dibromoethane	2012/10/22		118	%	60 - 14
	Spiked Blank	1,2-dichloroethane	2012/10/22		105	%	60 - 14
	opined blatin	1,2-dibromoethane	2012/10/22		101	%	60 - 14
	Method Blank	1,2-dichloroethane	2012/10/22	< 0.025	101	mg/kg	00 - 14
	Wellion Dialik	3 · 1	2012/10/22	<0.025		mg/kg	
	RPD	1,2-dibromoethane	2012/10/22	NC		%	4
007E400 D I		1,2-dichloroethane		NO	96	%	75 - 12
6275439 DJ	Matrix Spike	Total Lead (Pb)	2012/10/23		99	%	70 - 13
	QC Standard	Total Lead (Pb)	2012/10/23		99	%	
	Spiked Blank	Total Lead (Pb)	2012/10/23	40.40	99	0.9	75 - 12
	Method Blank	Total Lead (Pb)	2012/10/23	<0.10		mg/kg	•
0075444 N00	RPD	Total Lead (Pb)	2012/10/23	0.2	400	%	300 40
6275444 NS6	Spiked Blank	Soluble (2:1) pH	2012/10/24	0.7	102	%	96 - 10
	RPD	Soluble (2:1) pH	2012/10/24	2.7	0.5	%	75 40
6280956 DJ	Matrix Spike	Total Lead (Pb)	2012/10/23		95	%	75 - 12
	QC Standard	Total Lead (Pb)	2012/10/23		95	%	70 - 13
	Spiked Blank	Total Lead (Pb)	2012/10/23	-0.40	100	%	75 - 12
	Method Blank	Total Lead (Pb)	2012/10/23	<0.10		mg/kg	
3.60	RPD	Total Lead (Pb)	2012/10/23	1.1	922	%	
6280960 NS6	Spiked Blank	Soluble (2:1) pH	2012/10/23		102	%	96 - 10
	RPD	Soluble (2:1) pH	2012/10/23	0.7		%	2
6282156 CD3	Spiked Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2012/10/24	1012212000	117	%	70 - 13
	Method Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2012/10/24	<500		mg/kg	ne.
	RPD	F4G-SG (Heavy Hydrocarbons-Grav.)	2012/10/24	NC		%	5
6282437 KPA	Matrix Spike	1,2-dichloroethane	2012/10/24		82	%	60 - 14
		1,2-dibromoethane	2012/10/24		88	%	60 - 14
	Spiked Blank	1,2-dichloroethane	2012/10/23		85	%	60 - 14
		1,2-dibromoethane	2012/10/23		85	%	60 - 14
	Method Blank	1,2-dichloroethane	2012/10/23	< 0.025		mg/kg	
		1,2-dibromoethane	2012/10/23	< 0.025		mg/kg	
	RPD	1,2-dichloroethane	2012/10/24	NC		%	4
		1,2-dibromoethane	2012/10/24	NC		%	4



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Quality Assurance Report (Continued) Maxxam Job Number: NB293849

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery. Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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.



Validation Signature Page

Maxxam Job #: B293849
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).
Andy Lu, Data Validation Coordinator
Hua Wo, Organics Supervisor

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

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Lab Comments

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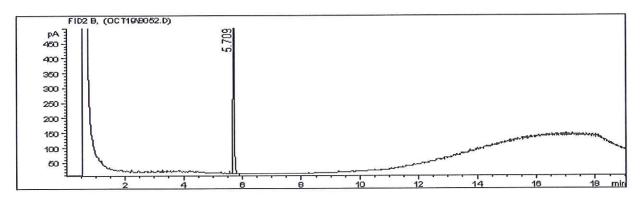


O'CONNOR ASSOCIATES ENVIRONMENTAL

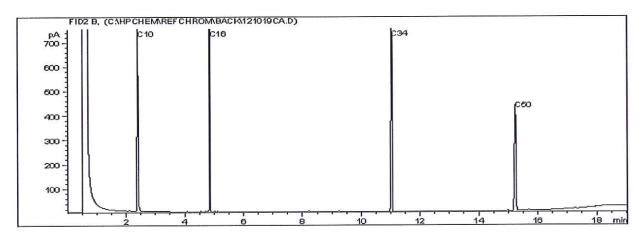
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG, M

Client ID: BH-32-1.2-1.8

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8	-	C22
Varsol:	C8	-	C12	Lubricating Oils:	C20	-	C40
Rerosene:	C7	-	C16	Crude Oils:	C3		C60+

Page 1 of 1

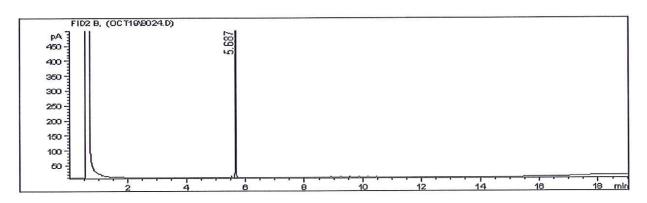


O'CONNOR ASSOCIATES ENVIRONMENTAL

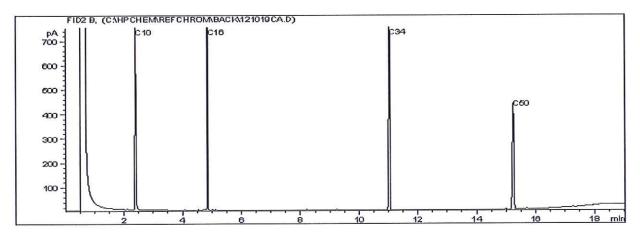
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG, M

Client ID: BH-32-2.4-3.1

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8	_	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7	-	C16	Crude Oils:	C3	-	C60+

Page 1 of 1

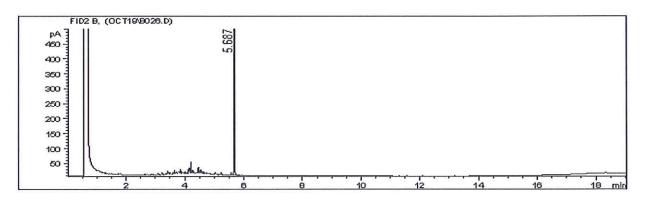


O'CONNOR ASSOCIATES ENVIRONMENTAL

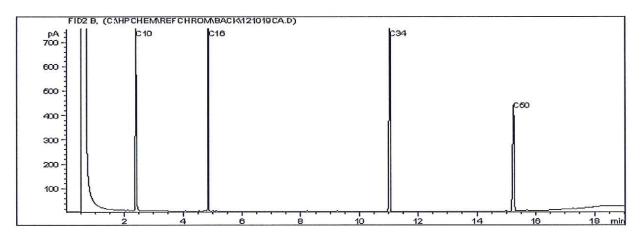
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG, M

Client ID: BH-32-3.7-4.3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8	_	C22
Varsol:	C8	-	C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7	1000	C16	Crude Oils:	C3	-	C60+

Page 1 of 1

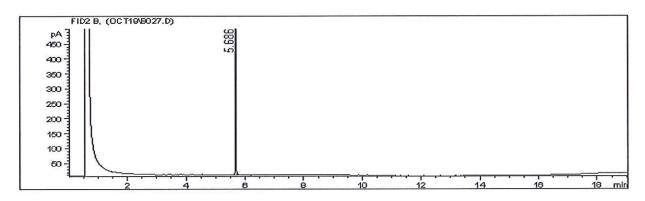


O'CONNOR ASSOCIATES ENVIRONMENTAL

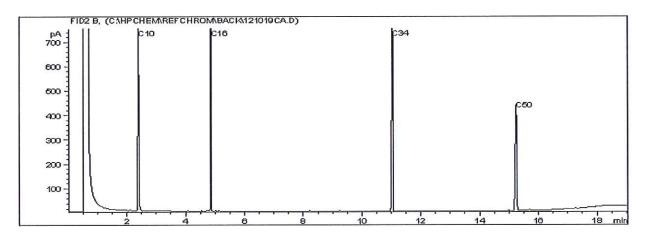
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG, M

Client ID: BH-33-1.2-1.8

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8		C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7	-	C16	Crude Oils:	C3	-	C60+

Page 1 of 1

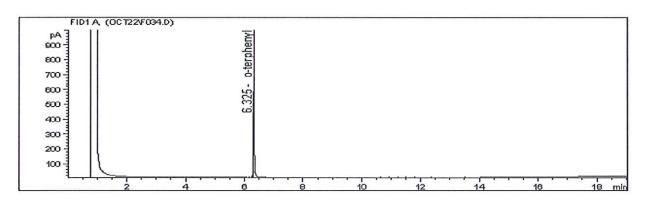


O'CONNOR ASSOCIATES ENVIRONMENTAL

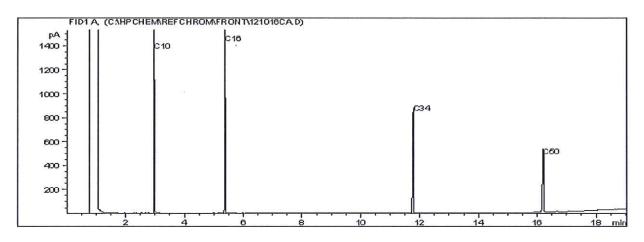
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG, M

Client ID: DUP-33

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8	-	C22
Varsol:	C8	-	C12	Lubricating Oils:	C20	-	C40
Rerosene:	C7	-	C16	Crude Oils:	C3	\rightarrow	C60+

Page 1 of 1

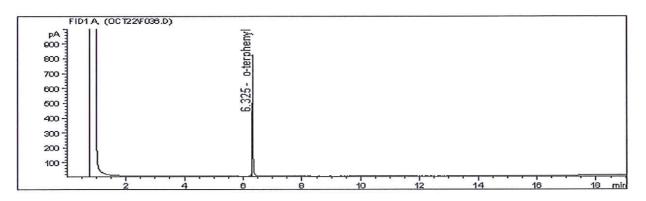


O'CONNOR ASSOCIATES ENVIRONMENTAL

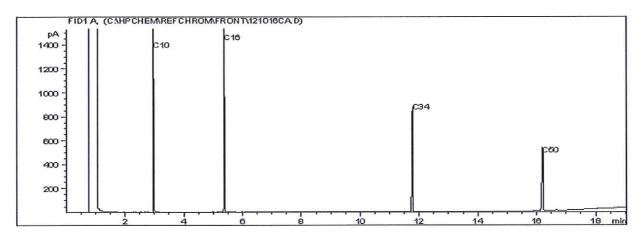
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG, M

Client ID: BH-33-2.4-3.1

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8	_	C22
Varsol:	C8		C12	Lubricating Oils:	C20		C40
Kerosene:	C7	-	C16	Crude Oils:	C3	3-3	C60+

Page 1 of 1

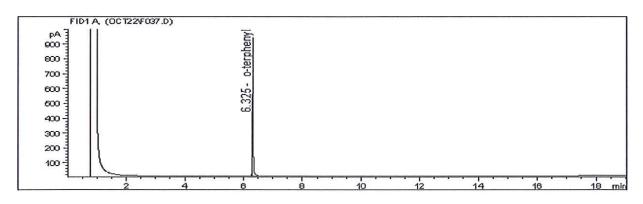


O'CONNOR ASSOCIATES ENVIRONMENTAL

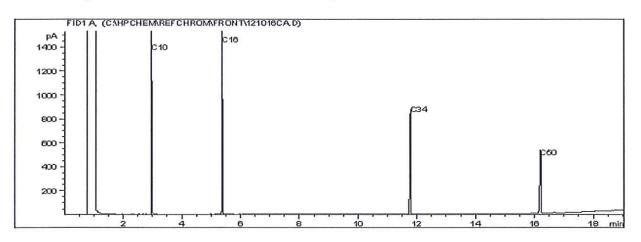
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG, M

Client ID: BH-33-3.7-4.3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	***	C12	Diesel:	C8	1	C22
Varsol:	C8		C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7		C16	Crude Oils:	СЗ	-	C60+

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons				Sampling Date: <u>2012/10/16</u>				
Location: 208 St. Anne's Road, Winnipeg, MB				Laboratory: Maxxam Analytics, Winnipeg				
Consultant Project Number: 10-1177.100			Sample Submission Number: <u>B293849</u>					
Are All Laboratory QC Samples W	ithin Acceptane	ce Criteria ((Yes, No,	Not Applicable)?				
	Yes	No	NA		Comments			
Instrument Surrogate Recovery Extraction Surrogate Recovery Method Blank Concentration Matrix Duplicate RPD Matrix Spike Recovery	X X X X		X	All lab QC met accept	ance criteria.			
Lab Control Sample Recovery			X					
Are All Field QC Samples Within A Field Blank Concentration Trip Blank Concentration Field Duplicate RPD	Alert Limits (Y Yes	es, No, Not	NA X X	le)? All field QC met alert	Comments limits.			
Has CoA been signed off (Yes/No) Has lab warranted all tests were in the Has lab warranted all tests were and Were all samples analyzed within hall volatiles samples methanol extra Chain of Custody completed and Were sample temperatures acceptal	statistical contralyzed following times (Yes racted, if requir signed (Yes/N	ng SOP's in /No)?: ed, within 4 lo)?:	CoA (Ye	s, No or N/A)?: Yes, No or N/A)?:	Yes Yes Yes Yes Yes Yes Yes Yes Yes			
Was a Data Quality Waiver (DQW)) issued (Yes, N	No or N/A)	?:		No			
Date Issued: _				Date of Response:				
Is data considered to be reliable (Y If answer is "No", describe and pro				Yes				
Data Reviewed by (Print): <u>/</u> Review Date: <u>/</u> Revision Date (if applicable): _	2013/02/21		:	Data Reviewe Revise	ed by (Signature): Ala Malaced by (Signature):			



Your Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003331

Attention: Adam Wickman

O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB R2J 4B3 CANADA

Report Date: 2013/03/04

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B314347 Received: 2013/02/22, 14:35

Sample Matrix: Soil # Samples Received: 10

		Date	Date	
Analyses	Quantity	Extracted	Analyzed Laboratory Method	Analytical Method
Volatile F1-BTEX (1)	10	N/A	2013/03/04 BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	2	2013/02/26	2013/02/27 BBY8SOP-00030	CCME Soil Tier 1
CCME Hydrocarbons (F2-F4 in soil) (1)	8	2013/02/27	2013/03/04 BBY8SOP-00030	CCME Soil Tier 1
Elements by ICPMS (total) (1)	10	2013/02/26	2013/02/27 BBY7SOP-00001	EPA 6020A
Moisture (1)	2	N/A	2013/02/27 BBY8SOP-00017	Ont MOE -E 3139
Moisture (1)	8	N/A	2013/02/28 BBY8SOP-00017	Ont MOE -E 3139
pH (2:1 DI Water Extract) (1)	10	2013/02/27	2013/02/27 BBY6SOP-00028	Carter, SSMA 16.2
CCME F1 C6-C10 in Soil by GC/FID (1)	2	2013/02/26	2013/03/02 BBY8SOP-00012	EPA SW8260C
CCME F1 C6-C10 in Soil by GC/FID (1)	8	2013/02/27	2013/03/01 BBY8SOP-00012	EPA SW8260C
VOCs in Soil by HS GC/MS (1)	2	2013/02/26	2013/03/02 BBY8-SOP-0009	EPA 8260C
VOCs in Soll by HS GC/MS (1)	8	2013/02/27	2013/03/01 BBY8-SOP-0009	EPA 8260C

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Janelle Kochan

(paralle Kodra 05 Mar 2013 08:21:37 -06:00

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

Janelle Kochan, B.Sc., Project Manager, Email: JKochan@maxxam.ca

Phone# (204) 772-7276 Ext:2209

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 #: B314347 Report Date: 2013/03/04 O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		FS0579	FS0580	FS0581	FS0581	FS0582		
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21		
, ,		10:50	11:00	11:10	11:10	11:20		<u> </u>
COC Number		S003331	S003331	S003331	S003331	S003331		
	UNITS	BH-36-0.6-1.2	BH-36-2.4-3.0	BH-36-3.6-4.2	BH-36-3.6-4.2 Lab-Dup	BH-36-5.4-6.0	RDL	QC Batch
Physical Properties								

Maxxam ID		FS0583	FS0584	FS0585	FS0586	FS0587		
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21		
,		11:20	12:30	12:40	12:50	12:50		
COC Number		S003331	S003331	S003331	\$003331	S003331		
	UNITS	DUP-36	BH-38-0.6-1.2	BH-38-1.8-2.4	BH-38-3.0-3.6	DUP-38	RDL	QC Batch
				<u> </u>		ı	<u>I</u>	
Physical Properties								
Soluble (2:1) pH	pH Units	8.33	8,58	8.72	8,47	8.29	0.010	6598360

2013/02/21 13:00		
		1
\$003331		
S BH-38-4.8-5.4	RDL	QC Batch
ts 8.22	0.010	6598360
	S BH-38-4.8-5.4	S BH-38-4,8-5.4 RDL



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		FS0579		FS0580	FS0581	FS0582		
Sampling Date		2013/02/21		2013/02/21	2013/02/21	2013/02/21		1
J		10:50		11:00	11:10	11:20		
COC Number		S003331		S003331	S003331	\$003331		
	UNITS	BH-36-0.6-1.2	QC Batch	BH-36-2.4-3.0	BH-36-3.6-4.2	BH-36-5.4-6.0	RDL	QC Batch

Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	6602831	<10	<10	<10	10	6610325
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	6602831	52	30	25	10	6610325
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	6602831	33	<10	<10	10	6610325
Reached Baseline at C50	mg/kg	Yes	6602831	Yes	Yes	Yes	N/A	6610325
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	95	6602831	95	91	86	N/A	6610325

N/A = Not Applicable

RDL = Reportable Detection Limit

Maxxam ID		FS0583		FS0584	FS0585		
Sampling Date		2013/02/21		2013/02/21	2013/02/21		
, , , , ,		11:20		12:30	12:40		
COC Number		S003331		S003331	S003331		1
	UNITS	DUP-36	QC Batch	BH-38-0.6-1.2	BH-38-1.8-2.4	RDL	QC Batch
Ext. Pet. Hydrocarbon							
TO (O40 O40 I) (december 1)	mg/kg	<10	6602831	<10	<10	10	6610325
F2 (C10-C16 Hydrocarbons)	Luiduză 1	- 10	1000000				1

F2 (C10-C16 Hydrocarbons)	mg/kg	<10	6602831	<10	<10	10	6610325
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	6602831	<10	<10	10	6610325
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	6602831	<10	<10	10	6610325
Reached Baseline at C50	mg/kg	Yes	6602831	Yes	Yes	N/A	6610325
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	86	6602831	90	102	N/A	6610325

N/A = Not Applicable

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		FS0586		FS0587	FS0588		
Sampling Date		2013/02/21		2013/02/21	2013/02/21	-	
1 "		12:50		12:50	13:00		
COC Number		S003331		S003331	S003331		İ
	UNITS	BH-38-3.0-3.6	QC Batch	DUP-38	BH-38-4.8-5.4	RDL	QC Batch

Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	6611348	<10	<10	10	6610325
F3 (C16-C34 Hydrocarbons)	mg/kg	10	6611348	23	46	10	6610325
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	6611348	<10	12	10	6610325
Reached Baseline at C50	mg/kg	Yes	6611348	Yes	Yes	N/A	6610325
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	98	6611348	96	88	N/A	6610325

N/A = Not Applicable

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PHYSICAL TESTING (SOIL)

Maxxam ID		FS0579		FS0580	FS0581	FS0582		
Sampling Date		2013/02/21		2013/02/21	2013/02/21	2013/02/21		
Sampling Late		10:50		11:00	11:10	11:20		
COC Number		S003331		S003331	S003331	S003331		
O O O TTOLINGO			50 D . 4 . I.	DI 20 2 4 2 0	BH-36-3.6-4.2	BH-36-5.4-6.0	ותם	QC Batch
	UNITS	BH-36-0.6-1.2	QC Batch	BH-36-2.4-3.0	BN-30-3.0-4.2	_ вп-эо-э.4-о.о	IVDE	NO DUITOIS
	UNITS	BH-36-0.6-1.2	QC Batch	ВП-30-2.4-3.0	BN-30-3.0-4.2	BH-30-3.4-0.0		NO BUILDIN
Physical Properties Moisture	UNITS	BH-36-0.6-1.2	6597940	30	35	34	0.30	6597941

	%	35	6597940	23	17	27	0.30	6597941
Physical Properties							_	
	UNITS	DUP-36	QC Batch	BH-38-0.6-1.2	BH-38-1.8-2.4	BH-38-3.0-3.6	RDL	QC Batch
COC Number		S003331		S003331	S003331	S003331		
1		11:20	·	12:30	12:40	12:50	ļ	
Sampling Date		2013/02/21		2013/02/21	2013/02/21	2013/02/21		
Maxxam ID		FS0583		FS0584	FS0585	FS0586	_	

Maxxam ID		FS0586	FS0587	FS0588		
Sampling Date		2013/02/21	2013/02/21	2013/02/21		
		12:50	12:50	13:00		
COC Number		S003331	S003331	S003331		
	UNITS	BH-38-3.0-3.6	DUP-38	BH-38-4.8-5.4	RDL	QC Batch
		Lab-Dup	L			!
Physical Properties		Lao-Dup				



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FS0579	FS0580	FS0581	FS0581		
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21	1	
J =		10:50	11:00	11:10	11:10		
COC Number		S003331	S003331	S003331	S003331		
	UNITS	BH-36-0.6-1.2	BH-36-2.4-3.0	BH-36-3.6-4.2	BH-36-3.6-4.2	RDL	QC Batch
			1	i	Lab-Dup		
	1 :				i Fan-Dub		
	<u></u>		<u> </u>		T Lab-Dup		1
Total Metals by ICPMS					Lab-bup		

Total Lead (Pb)	mg/kg	15.9	13.8	14.4	4.18	0.10	6598356
Total Metals by ICPMS	<u></u>						
	UNITS	BH-36-5.4-6.0	DUP-36	BH-38-0.6-1,2	BH-38-1.8-2.4	RDL	QC Batch
COC Number		S003331	S003331	S003331	S003331		
		11:20	11:20	12:30	12:40		
Sampling Date	1	2013/02/21	2013/02/21	2013/02/21	2013/02/21		
Maxxam ID		F\$0582	FS0583	FS0584	FS0585		

Maxxam ID Sampling Date		2013/02/21 12:50	2013/02/21 12:50	2013/02/21 13:00		
COC Number	UNITS	S003331 BH-38-3.0-3.6	S003331 DUP-38	S003331 BH-38-4.8-5.4	RDL.	QC Batch
Total Metals by ICPMS						
Total Lead (Pb)	mg/kg	12.8	14.5	15.7	0.10	6598356



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

CCME VOC + F1 IN SOIL (SOIL)

Maxxam ID		FS0579		FS0580	FS0581		ļ
Sampling Date		2013/02/21		2013/02/21	2013/02/21		
		10:50		11:00	11:10		
COC Number		S003331		S003331	S003331	RDL	OC Batab
	UNITS	BH-36-0.6-1.2	QC Batch	BH-36-2.4-3.0	BH-36-3.6-4.2	KUL	QC Batch
Calculated Parameters							
F1 (C6-C10) - BTEX	mg/kg	<10	6593938	<10	<10	10	6593938
Volatile Hydrocarbons							
(C6-C10)	mg/kg	<10 (1)	6609711	<10 (1)	<10 (1)	10	6612293
Volatiles							
1,2-dichloroethane	mg/kg	<0.025 (1)	6604979	<0.025 (1)	<0.025 (1)	0.025	6612201
Benzene	mg/kg	<0.0050 (1)	6604979	<0.0050 (1)	<0.0050 (1)	0.0050	6612201
Methyl-tert-butylether (MTBE)	mg/kg	<0.10 (1)	6604979	<0.10 (1)	<0.10 (1)	0.10	6612201
Toluene	mg/kg	<0.020 (1)	6604979	<0.020 (1)	<0.020 (1)	0.020	6612201
1,2-dibromoethane	mg/kg	<0.025 (1)	6604979	<0.025 (1)	<0.025 (1)	0.025	6612201
Ethylbenzene	mg/kg	<0.010 (1)	6604979	<0.010 (1)	<0.010 (1)	0.010	6612201
m & p-Xylene	mg/kg	<0.040 (1)	6604979	<0.040 (1)	<0.040 (1)	0.040	6612201
o-Xylene	mg/kg	<0.040 (1)	6604979	<0.040 (1)	<0.040 (1)	0.040	6612201
Xylenes (Total)	mg/kg	<0.040	6604979	<0.040	<0.040	0.040	6612201
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	98	6604979	100	100	N/A	6612201
4-BROMOFLUOROBENZENE (sur.)	%	84	6604979	93	94	N/A	6612201
D10-ETHYLBENZENE (sur.)	%	88	6604979	112	113	N/A	6612201
D4-1,2-DICHLOROETHANE (sur.)	%	106	6604979	119	121	N/A	6612201

N/A = Not Applicable

RDL = Reportable Detection Limit

⁽¹⁾ Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

CCME VOC + F1 IN SOIL (SOIL)

Maxxam ID		FS0582		FS0583		FS0584		
Sampling Date		2013/02/21		2013/02/21		2013/02/21		
		11:20		11:20		12:30		
COC Number		S003331		S003331		S003331	ļ	
	UNITS	BH-36-5.4-6.0	QC Batch	DUP-36	QC Batch	BH-38-0.6-1.2	RDL	QC Batch
Calculated Parameters								
F1 (C6-C10) - BTEX	mg/kg	<10	6593938	<10	6593938	15	10	6593938
Volatile Hydrocarbons								
(C6-C10)	mg/kg	<10 (1)	6612293	<10 (1)	6609711	15 (1)	10	6612293
Volatiles								
1,2-dichloroethane	mg/kg	<0.025 (1)	6612201	<0.025 (1)	6604979	<0.025 (1)	0.025	6612201
Benzene	mg/kg	<0.0050 (1)	6612201	<0.0050 (1)	6604979	0.0093 (1)	0.0050	6612201
Methyl-tert-butylether (MTBE)	mg/kg	<0.10 (1)	6612201	<0.10 (1)	6604979	<0.10 (1)	0.10	6612201
Toluene	mg/kg	<0.020 (1)	6612201	<0.020 (1)	6604979	<0.020 (1)	0,020	6612201
1,2-dibromoethane	mg/kg	<0.025 (1)	6612201	<0.025 (1)	6604979	<0.025 (1)	0.025	6612201
Ethylbenzene	mg/kg	<0.010 (1)	6612201	<0.010 (1)	6604979	0.030 (1)	0.010	6612201
m & p-Xylene	mg/kg	<0.040 (1)	6612201	<0.040 (1)	6604979	<0.040 (1)	0.040	6612201
o-Xylene	mg/kg	<0.040 (1)	6612201	<0.040 (1)	6604979	<0.040 (1)	0.040	6612201
Xylenes (Total)	mg/kg	<0.040	6612201	<0.040	6604979	<0.040	0.040	6612201
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	99	6612201	98	6604979	97	N/A	6612201
4-BROMOFLUOROBENZENE (sur.)	%	103	6612201	84	6604979	110	N/A	6612201
D10-ETHYLBENZENE (sur.)	%	117	6612201	86	6604979	115	N/A	6612201
D4-1,2-DICHLOROETHANE (sur.)	%	126	6612201	110	6604979	129	N/A	6612201

N/A = Not Applicable

RDL = Reportable Detection Limit

(1) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

CCME VOC + F1 IN SOIL (SOIL)

		500505	FS0586	FS0587	FS0588	1	
Maxxam ID		FS0585	2013/02/21	2013/02/21	2013/02/21	 	
Sampling Date		2013/02/21 12:40	12:50	12:50	13:00		
COO Newshor		S003331	S003331	S003331	S003331		
COC Number	UNITS	BH-38-1.8-2.4	BH-38-3.0-3.6	DUP-38	BH-38-4.8-5.4	RDL	QC Batch
Calculated Parameters							
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	10	6593938
Volatile Hydrocarbons						<u> </u>	
(C6-C10)	mg/kg	<10 (1)	<10 (1)	<10 (1)	<10 (1)	10	6612293
Volatiles							
1,2-dichloroethane	mg/kg	<0.025 (1)	<0.025 (1)	<0.025 (1)	<0.025 (1)	0.025	6612201
Benzene	mg/kg	0.0099 (1)	<0.0050 (1)	<0.0050 (1)	<0.0050 (1)	0.0050	6612201
Methyl-tert-butylether (MTBE)	mg/kg	<0.10 (1)	<0.10 (1)	<0.10 (1)	<0.10 (1)	0.10	6612201
Toluene	mg/kg	<0.020 (1)	<0.020 (1)	<0.020 (1)	<0.020 (1)	0.020	6612201
1,2-dibromoethane	mg/kg	<0.025 (1)	<0.025 (1)	<0.025 (1)	<0.025 (1)	0.025	6612201
Ethylbenzene	mg/kg	0.018 (1)	<0.010 (1)	<0.010 (1)	<0.010 (1)	0.010	6612201
m & p-Xylene	mg/kg	<0.040 (1)	<0.040 (1)	<0.040 (1)	<0.040 (1)	0.040	6612201
o-Xylene	mg/kg	<0.040 (1)	<0.040 (1)	<0.040 (1)	<0.040 (1)	0.040	6612201
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	6612201
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	96	87	99	98	N/A	6612201
4-BROMOFLUOROBENZENE (sur.)	%	98	82	102	106	N/A	6612201
D10-ETHYLBENZENE (sur.)	%	108	101	116	119	N/A	6612201
D4-1,2-DICHLOROETHANE (sur.)	%	128	127	118	128	N/A	6612201

N/A = Not Applicable

RDL = Reportable Detection Limit

⁽¹⁾ Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: AB

CCME VOC + F1 IN SOIL (SOIL)

Maxxam ID		FS0588		
Sampling Date		2013/02/21		
		13:00		
COC Number		S003331		
	UNITS	BH-38-4.8-5.4	RDL	QC Batch
		Lab-Dup		
Volatile Hydrocarbons		-		
(C6-C10)	mg/kg	<10 (1)	10	6612293
Volatiles				
1,2-dichloroethane	mg/kg	<0.025 (1)	0.025	6612201
Benzene	mg/kg	<0.0050 (1)	0.0050	6612201
Methyl-tert-butylether (MTBE)	mg/kg	<0.10 (1)	0.10	6612201
Toluene	mg/kg	<0.020 (1)	0.020	6612201
1,2-dibromoethane	mg/kg	<0.025 (1)	0.025	6612201
Ethylbenzene	mg/kg	<0.010 (1)	0.010	6612201
m & p-Xylene	mg/kg	<0.040 (1)	0.040	6612201
o-Xylene	mg/kg	<0.040 (1)	0.040	6612201
Xylenes (Total)	mg/kg	<0.040	0.040	6612201
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	95	N/A	6612201
4-BROMOFLUOROBENZENE (sur.)	%	109	N/A	6612201
D10-ETHYLBENZENE (sur.)	%	113	N/A	6612201
D4-1,2-DICHLOROETHANE (sur.)	%	127	N/A	6612201

N/A = Not Applicable RDL = Reportable Detection Limit

⁽¹⁾ Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

Package 1 9.5°C

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

General Comments

Results relate only to the Items tested.



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB314347

QA/QC Batch							
			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limit
6597940 LO1	Method Blank	Moisture	2013/02/27	<0.30		%	
	RPD	Moisture	2013/02/27	8.4		%	2
6597941 LO1	Method Blank	Moisture	2013/02/28	< 0.30		%	
	RPD [FS0586-01]	Moisture	2013/02/28	4.3		%	2
6598356 DJ	Matrix Spike	,					
•••	[FS0581-02]	Total Lead (Pb)	2013/02/27		102	%	75 - 12
	QC Standard	Total Lead (Pb)	2013/02/27		96	%	70 - 13
	Spiked Blank	Total Lead (Pb)	2013/02/27		102	%	75 - 12
	Method Blank	Total Lead (Pb)	2013/02/27	<0.10		mg/kg	
	RPD [FS0581-02]	Total Lead (Pb)	2013/02/27	1.1		%	3
3598360 NS6	Spiked Blank	Soluble (2:1) pH	2013/02/27		102	%	96 - 10
3000000 1100	RPD [FS0581-02]	Soluble (2:1) pH	2013/02/27	0.9		%	2
602831 TL2	Matrix Spike	O-TERPHENYL (sur.)	2013/02/27		100	%	50 - 13
3002001 1EE	maan opno	F2 (C10-C16 Hydrocarbons)	2013/02/27		108	%	50 - 13
		F3 (C16-C34 Hydrocarbons)	2013/02/27		102	%	50 - 13
		F4 (C34-C50 Hydrocarbons)	2013/02/27		97	%	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2013/02/27		95	%	50 - 13
	оржео ыык	F2 (C10-C16 Hydrocarbons)	2013/02/27		97	%	80 - 12
		F3 (C16-C34 Hydrocarbons)	2013/02/27		90	%	80 - 12
		F4 (C34-C50 Hydrocarbons)	2013/02/27		87	%	80 - 12
	Method Blank	O-TERPHENYL (sur.)	2013/02/27		95	%	50 - 13
	Method Digity	F2 (C10-C16 Hydrocarbons)	2013/02/27	<10	45	mg/kg	
		F3 (C16-C34 Hydrocarbons)	2013/02/27	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2013/02/27	<10		mg/kg	
	ממט	F2 (C10-C16 Hydrocarbons)	2013/02/27	NC (1)		%	
	RPD	F3 (C16-C34 Hydrocarbons)	2013/02/27	4.9 (1)		%	-
			2013/02/27	2.1 (1)		%	
		F4 (C34-C50 Hydrocarbons) Reached Baseline at C50	2013/02/27	NC NC		%	
0004070 14145	Matrix Oaller		2013/02/27	110	96	%	70 - 1
6604979 MM5	Matrix Spike	1,4-Difluorobenzene (sur.)	2013/03/02		90	%	70 - 1
		4-BROMOFLUOROBENZENE (sur.)	2013/03/02		87	%	50 - 1
		D10-ETHYLBENZENE (sur.)	2013/03/02		102	%	70 - 1
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/02		92	%	60 - 1
		1,2-dichloroethane			84	%	60 - 1
		Benzene	2013/03/02		83	%	60 - 1
		Toluene	2013/03/02		96	% %	60 - 1
		1,2-dibromoethane	2013/03/02		92	% %	60 - 1
		Ethylbenzene	2013/03/02		98	%	60 - 1
		m & p-Xylene	2013/03/02		94	%	60 - 1
		o-Xylene	2013/03/02				70 - 1
	Spiked Blank	1,4-Difluorobenzene (sur.)	2013/03/01		96	%	
		4-BROMOFLUOROBENZENE (sur.)	2013/03/01		93	%	70 - 1
		D10-ETHYLBENZENE (sur.)	2013/03/01		90	%	50 - 1
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/01		105	%	70 - 1
		1,2-dichloroethane	2013/03/01		110	%	60 - 1
		Benzene	2013/03/01		94	%	60 - 1
		Toluene	2013/03/01		96	%	60 - 1
		1,2-dibromoethane	2013/03/01		96	%	60 - 1
		Ethylbenzene	2013/03/01		102	%	60 - 1
		m & p-Xylene	2013/03/01		110	%	60 - 1
		o-Xylene	2013/03/01		106	%	60 - 1
	Method Blank	1,4-Difluorobenzene (sur.)	2013/03/01		98	%	70 - 1
		4-BROMOFLUOROBENZENE (sur.)	2013/03/01		91	%	70 - 1
		D10-ETHYLBENZENE (sur.)	2013/03/01		92	%	50 - 1
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/01		124	%	70 - 1
		1,2-dichloroethane	2013/03/01	< 0.025		mg/kg	



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB314347

QA/QC			Date				
Batch		_	Analyzed			LINETO	001100
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
604979 MM5	Method Blank	Benzene	2013/03/01	<0.0050		mg/kg	
		Methyl-tert-butylether (MTBE)	2013/03/01	<0.10		mg/kg	
		Toluene	2013/03/01	<0.020		mg/kg	
		1,2-dibromoethane	2013/03/01	<0.025		mg/kg	
		Ethylbenzene	2013/03/01	<0.010		mg/kg	
		m & p-Xylene	2013/03/01	<0.040		mg/kg	
		o-Xylene	2013/03/01	<0.040		mg/kg	40
	RPD	1,2-dichloroethane	2013/03/02	NC		%	40
		1,2-dibromoethane	2013/03/02	NC		%	40
609711 MM5	Spiked Blank	(C6-C10)	2013/03/02		76	%	60 - 140
	Method Blank	(C6-C10)	2013/03/02	<10		mg/kg	E0 400
610325 TL2	Matrix Spike	O-TERPHENYL (sur.)	2013/03/01		97	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2013/03/01		96	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2013/03/01		79	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2013/03/01		79	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/01		82	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2013/03/01		102	%	80 - 120
		F3 (C16-C34 Hydrocarbons)	2013/03/01		83	%	80 - 120
		F4 (C34-C50 Hydrocarbons)	2013/03/01		84	%	80 - 120
	Method Blank	O-TERPHENYL (sur.)	2013/03/01		93	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2013/03/01	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2013/03/01	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2013/03/01	<10		mg/kg	
		Reached Baseline at C50	2013/03/01	YES		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2013/03/01	NC		%	40
		F3 (C16-C34 Hydrocarbons)	2013/03/01	NC		%	40
		F4 (C34-C50 Hydrocarbons)	2013/03/01	NC		%	40
		Reached Baseline at C50	2013/03/01	NC		%	50
611348 PN2	Matrix Spike	O-TERPHENYL (sur.)	2013/03/04		99	%	50 - 130
	•	F2 (C10-C16 Hydrocarbons)	2013/03/04		102	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2013/03/04		90	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2013/03/04		81	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/04		103	%	50 - 130
	,	F2 (C10-C16 Hydrocarbons)	2013/03/04		102	%	80 - 120
		F3 (C16-C34 Hydrocarbons)	2013/03/04		90	%	80 - 120
		F4 (C34-C50 Hydrocarbons)	2013/03/04		81	%	80 - 120
	Method Blank	O-TERPHENYL (sur.)	2013/03/04		113	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2013/03/04	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2013/03/04	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2013/03/04	<10		mg/kg	
		Reached Baseline at C50	2013/03/04	YES		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2013/03/04	8.3		%	40
	–	F3 (C16-C34 Hydrocarbons)	2013/03/04	NC		%	40
		F4 (C34-C50 Hydrocarbons)	2013/03/04	NC		%	40
		Reached Baseline at C50	2013/03/04	NC		%	50
612201 MM5	Matrix Spike	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
	[FS0588-01]	1,4-Difluorobenzene (sur.)	2013/03/01		97	%	70 - 130
	į. 00000 0 rj	4-BROMOFLUOROBENZENE (sur.)	2013/03/01		116	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2013/03/01		118	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/01		115	%	70 - 130
		1,2-dichloroethane	2013/03/01		119	%	60 - 140
		Benzene	2013/03/01		123	%	60 - 140
		Toluene	2013/03/01		116	%	60 - 140
		1,2-dibromoethane	2013/03/01		123	%	60 - 140
		t,z-dibromoetnane Ethylbenzene	2013/03/01		124	%	60 - 140
		Enthineuseue	2010/00/01		124	70	30 140



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB314347

QA/QC			Date				
Batch			Analyzed		_		
Num Init	QC Туре	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6612201 MM5	Matrix Spike						
	[FS0588-01]	m & p-Xylene	2013/03/01		132	%	60 - 140
		o-Xylene	2013/03/01		128	%	60 - 140
	Spiked Blank	1,4-Difluorobenzene (sur.)	2013/03/01		98	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2013/03/01		91	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2013/03/01		101	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/01		115	%	70 - 130
		1,2-dichloroethane	2013/03/01		116	%	60 - 140
		Benzene	2013/03/01		113	%	60 - 140
		Toluene	2013/03/01		104	%	60 - 140
		1,2-dibromoethane	2013/03/01		110	%	60 - 140
		Ethylbenzene	2013/03/01		110	%	60 - 140
		m & p-Xylene	2013/03/01		120	%	60 - 140
		o-Xylene	2013/03/01		115	%	60 - 140
	Method Blank	1,4-Difluorobenzene (sur.)	2013/03/01		101	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2013/03/01		92	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2013/03/01		102	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/01		112	%	70 - 130
		1,2-dichloroethane	2013/03/01	< 0.025		mg/kg	
		Benzene	2013/03/01	<0.0050		mg/kg	
		Methyl-tert-butylether (MTBE)	2013/03/01	<0.10		mg/kg	
		Toluene	2013/03/01	<0.020		mg/kg	
		1,2-dibromoethane	2013/03/01	<0.025		mg/kg	
		Ethylbenzene	2013/03/01	< 0.010		mg/kg	
		m & p-Xylene	2013/03/01	<0.040		mg/kg	
		o-Xylene	2013/03/01	<0.040		mg/kg	
		Xylenes (Total)	2013/03/01	<0.040		mg/kg	
	RPD [FS0588-01]	1,2-dichloroethane	2013/03/01	NC (2)		111g/kg %	40
	תרט (רטטטסט-ט ון	•	2013/03/01	NC (2)		%	40
		Benzene	2013/03/01			% %	40
		Methyl-tert-butylether (MTBE)		NC (2)		% %	40
		Toluene	2013/03/01	NC (2)		% %	
		1,2-dibromoethane	2013/03/01	NC (2)			40
		Ethylbenzene	2013/03/01	NC (2)		%	40
		m & p-Xylene	2013/03/01	NC (2)		%	40
		o-Xylene	2013/03/01	NC (2)		%	40
		Xylenes (Total)	2013/03/01	NC		%	40
6612293 MM5	Spiked Blank	(C6-C10)	2013/03/01	.	126	%	60 - 140
	Method Blank	(C6-C10)	2013/03/01	<10		mg/kg	
	RPD [FS0588-01]	(C6-C10)	2013/03/01	NC (2)		%	50

Duplicate: Paired analysis of a separate portion of the same sample, Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (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) Detection limits raised due to high moisture content.
- (2) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



Validation Signature Page

Maxxam Job #: B314347
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).
Andy Lu, Data Validation Coordinator

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.

· 原新公司 大方, 图14

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Linguistic may be proved in the control of the cont	axxam Analytics, Unit D -	$C\mathcal{L}$ 675 Berry Street, Wi	innipeg, MB, R3H 1A	.7, Tel: (204) 772-7	7276, Fax: (2	204) 772-2	386 www.maxx	

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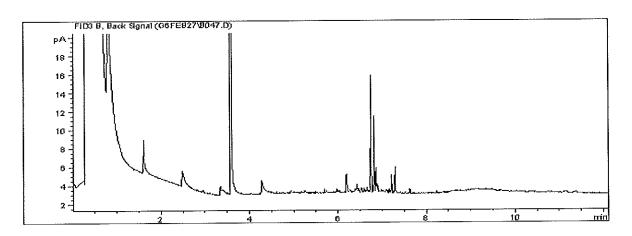
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

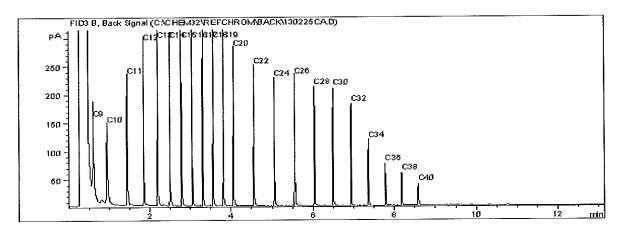
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-36-0.6-1.2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	cs -	C22
Varsol:	C8 - C12	Lubricating Oils:	C20 -	
Kerosene:	C7 - C16	Crude Oils:	C3 -	C60+



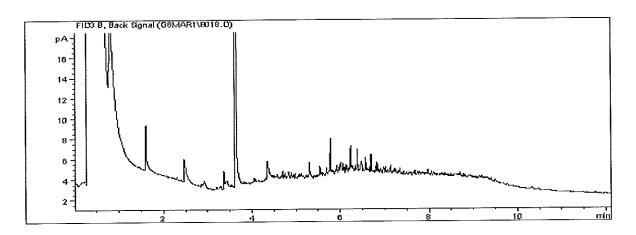
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

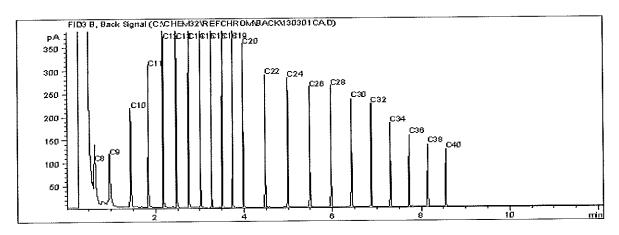
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-36-2.4-3.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8		C22
Varsol:	Ca		C12	Lubricating Oils:	C20	_	C40
Kerosene:			~ ~	Crude Oils:	C3	_	C60+



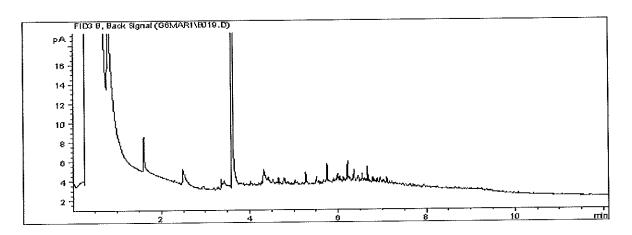
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

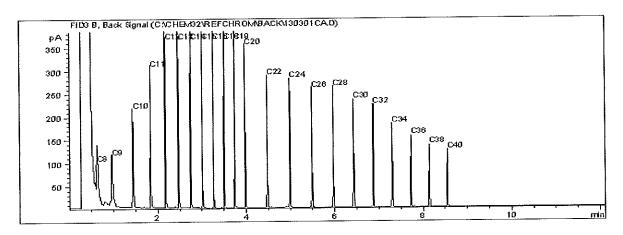
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-36-3.6-4.2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	0.4	_	C12	Diesel:	C8	-	C22
Varsol:	CB	_	C12	Lubricating Oils:	C20		C40
Kerosene:			C16	Crude Oils:	C3	-	C60+



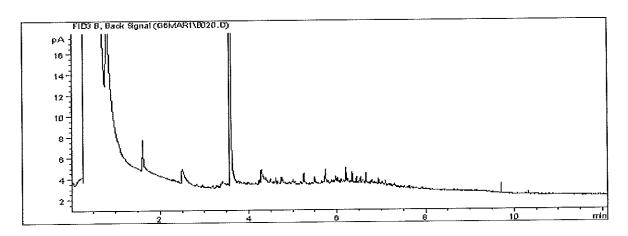
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

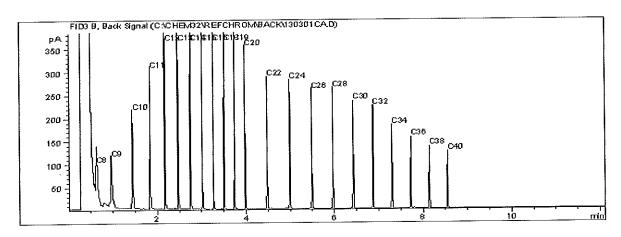
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-36-5.4-6.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	ce	C22
Varsol:	C8	-	C12	Lubricating Oils:	C20	C40
Kerosene:	C7	-	C16	Crude Oils:	C3	 C60+



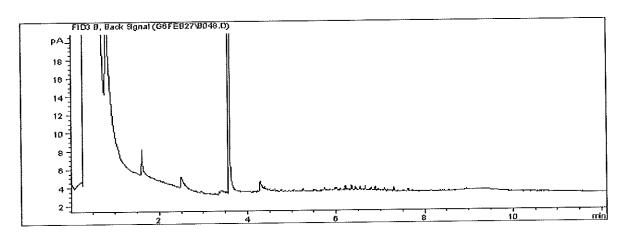
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

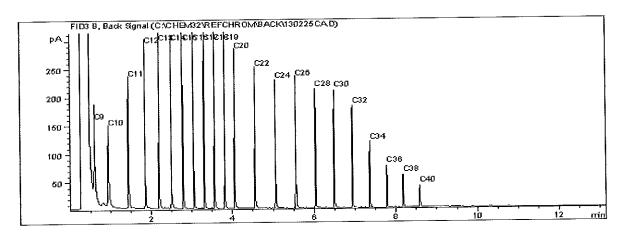
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: DUP-36

CCME Hydrocarbons (F2-F4 in soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 (212	Diesel:	C8	-	C22
General .			v	COL		C40
Varsol:	C8 - (C12	Lubricating Oils:			
		71.0	Crude Oils:	CЗ		C60+
Kerosene:	C7 - 1	C16	CIUTE OTTO:			



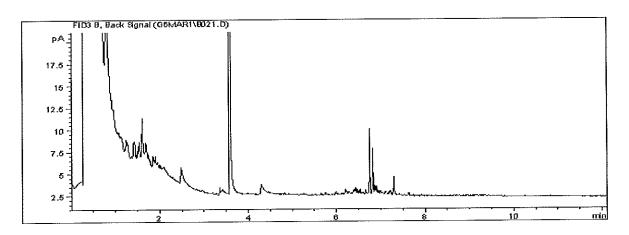
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

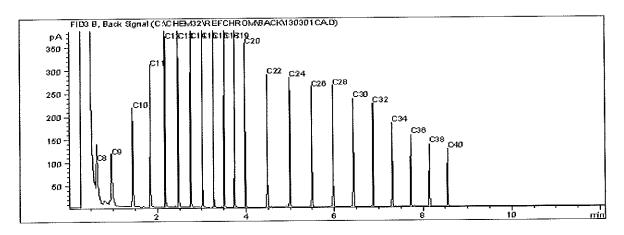
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-38-0.6-1.2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

01	C4	C12	Diesel:	ca	_	C22
Gasoline:	C4 -	CIZ				
Varsol:	C8 - :	C12	Lubricating Oils:	C20	-	C40
	• -		Crude Oils:	C3		C60+
Kerosene:	C7 -	CID	CIMA OTTO.			



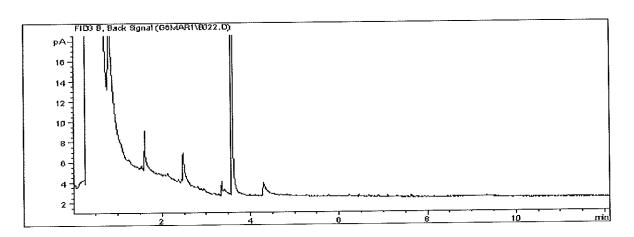
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

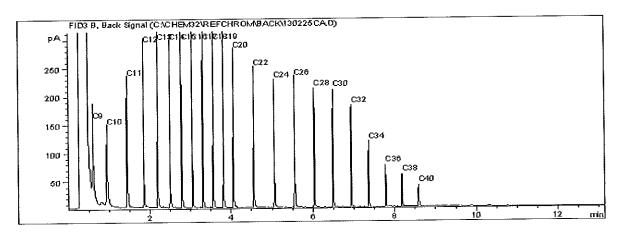
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-38-1.8-2.4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	C12	Diesel:	C8	-	C22
Varsol:	Č8 -	C12	Lubricating Oils:			C40
Kerosene:	C7 -	C16	Crude Oils:	СЗ		C60+



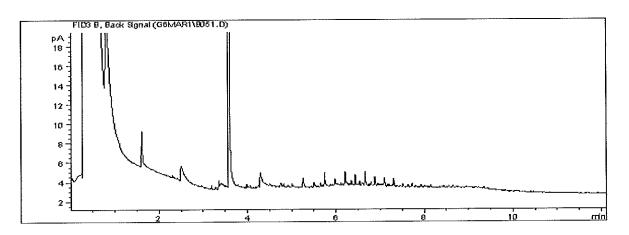
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

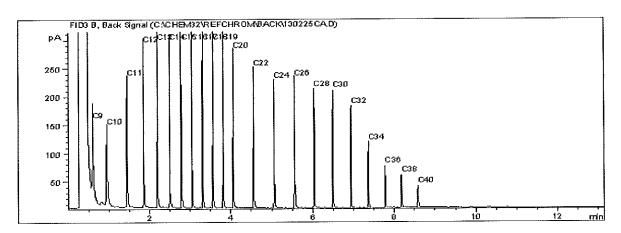
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-38-3.0-3.6

CCME Hydrocarbons (F2-F4 in soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	cs -	C22
Varsol:	C8 - C12	Lubricating 0ils:	C20 -	
Kerosene:	C7 - C16	Crude Oils:	C3 -	C60+



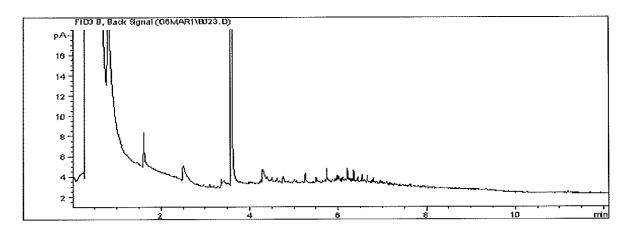
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

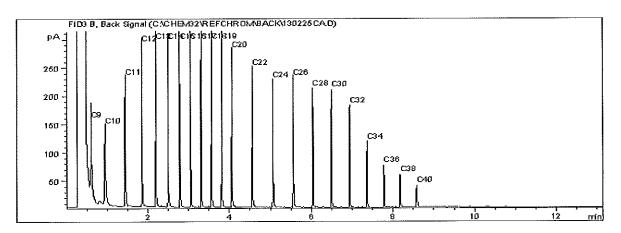
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: DUP-38

CCME Hydrocarbons (F2-F4 in soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	CS		C22
Varsol:	C8	_	C12	Lubricating Oils:	C20		C40
Kerosene:	C7	_	C16	Crude Oils:	C3	-	C60+



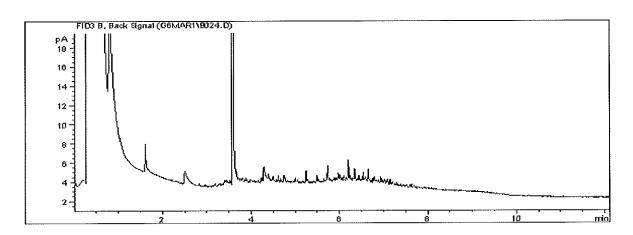
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

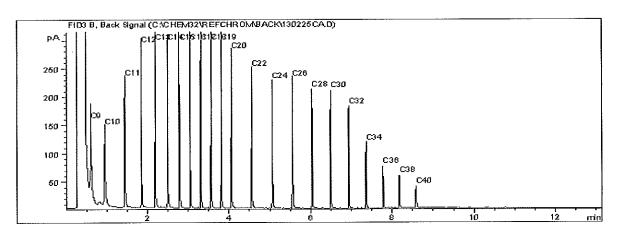
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-38-4.8-5.4

CCME Hydrocarbons (F2-F4 In soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 -	C22
Varsol:	C8 - C12	Lubricating Oils:	C20 -	C40
Kerosene:	C7 - C16	Crude Oils:	C3 -	C60+

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons				Sampling Date: 2	2013/02/21
Location: 208 St. Anne's	Road, Winnipe	eg, MB		Laboratory : 1	Maxxam Analytics, Winnipeg
Consultant Project Number: 10	0-1177.100			Sample Subn	nission Number: <u>B314347</u>
Are All Laboratory QC Samples Wi	thin Acceptance	e Criteria (Yes, No,	Not Applicable)?	
	Yes	No	NA		Comments
Instrument Surrogate Recovery Extraction Surrogate Recovery	X X			All lab QC met accepto	ance criteria.
Method Blank Concentration	X				
Matrix Duplicate RPD	X				
Matrix Spike Recovery	X		v		
Lab Control Sample Recovery			X		
Are All Field QC Samples Within A	Llert Limits (Ye	s, No, Not No	Applicab NA		Comments
Field Blank Concentration			X	All field QC met alert	limits.
Trip Blank Concentration			X		,
Field Duplicate RPD	X				
Has CoA been signed off (Yes/No). Has lab warranted all tests were in so Has lab warranted all tests were and Were all samples analyzed within hall volatiles samples methanol extra Is Chain of Custody completed and Were sample temperatures acceptable.	statistical control ulyzed following old times (Yes/ acted, if require signed (Yes/No	g SOP's in No)?: ed, within 4 o)?:	CoA (Yes	s, No or N/A)?: Yes, No or N/A)?:	Yes Yes Yes Yes No Yes Yes Yes
Was a Data Quality Waiver (DQW)	issued (Yes, N	o or N/A)'	?:		No
Date Issued: _		•	ř	Date of Response:	
Is data considered to be reliable (Your If answer is "No", describe and pro		,		Yes	
Data Reviewed by (Print): <u>A</u> Review Date: <u>2</u> Revision Date (if applicable): _	2013/03/06		- - -		ed by (Signature): ## Months



Your Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003354

Attention: Adam Wickman

O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2013/03/04

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B314367 Received: 2013/02/22, 14:35

Sample Matrix: Soil # Samples Received: 12

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS (1)	8	2013/02/26	2013/02/28	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX (1)	8	N/A	2013/02/28	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	4	2013/02/26	2013/02/27	BBY8SOP-00030	CCME Soll Tier 1
CCME Hydrocarbons (F2-F4 in soll) (1)	4	2013/02/26	2013/03/04	BBY8SOP-00030	CCME Soil Tier 1
Grain Size Classification (Calc) (1)	4	N/A	2013/02/27	BBY6SOP-00039	Carter SSMA 47.4
Elements by ICPMS (total) (1)	8	2013/02/27	2013/02/27	BBY7SOP-00001	EPA 6020A
Particulate Mesh 200 (1)	4	N/A	2013/02/27	BBY6SOP-00039	Carter SSMA 47.4
Moisture (i)	9	N/A	2013/02/27	BBY8SOP-00017	Ont MOE -E 3139
Moisture (1)	3	N/A	2013/02/28	BBY8SOP-00017	Ont MOE -E 3139
pH (2:1 DI Water Extract) (1)	5	2013/02/27	2013/02/27	BBY6SOP-00028	Carter, SSMA 16.2
pH (2:1 DI Water Extract) (i)	3	2013/02/28	2013/02/28	BBY6SOP-00028	Carter, SSMA 16.2
VOCs in Soil by HS GC/MS (1)	8	2013/02/26	2013/03/02	BBY8-SOP-0009	EPA 8260C

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Quality Kochan

Openality Kochan

Openality Kochan

Openality Kochan

Openality Kochan

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

Janelle Kochan, B.Sc., Project Manager, Email: JKochan@maxxam.ca Phone# (204) 772-7276 Ext:2209

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



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler initials: AB

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		FS0783	FS0785	FS0787		FS0789		
Sampling Date		2013/02/21	2013/02/21	2013/02/21		2013/02/21		
	İ	08:00	08:20	08:40		09:00		
COC Number		S003354	S003354	S003354		S003354		
	UNITS	BH-34-0.6-1.2	BH-34-1.8-2.4	BH-34-3.0-3.6	QC Batch	BH-34-4.2-4.8	RDL	QC Batch
Dhualad Dranatica	T		1			· · · · · · · · · · · · · · · · · · ·		1
Physical Properties	1 :							

Maxxam ID		FS0791	FS0792	FS0793	FS0794		
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21		
_		13:20	13:30	13:40	13:50		1
COC Number		S003354	S003354	S003354	S003354	1	
	1111170	DI1 20 0 C 4 0	BH-39-1.8-2.4	BH-39-3.0-3.6	BH-39-4.8-5.4	RDL	QC Batch
•	UNITS	BH-39-0.6-1.2	DR-38-1.0-2.4	DU-38-3'0-3'0	БП-38-4.0-3.4	IKDL	MC Batti
Physical Properties	UNITS	BH-39-0.0-1.2	BH-39-1.0-2.4	DH-38-3.0-3.0	BR-39-4.0-3.4	I	MC Batch



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PARTICLE SIZE DISTRIBUTION ANALYSIS (SOIL)

Maxxam ID		FS0784	FS0784	FS0786	FS0788	FS0790		
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21		
		08:10	08;10	08:30	08:50	09:10		
COC Number		S003354	S003354	S003354	S003354	S003354		
	UNITS	BH-34-1.2-1.8	BH-34-1.2-1.8 Lab-Dup	BH-34-2.4-3.0	BH-34-3.6-4.2	BH-34-5.4-6.0	RDL	QC Batch
			ŀ			1	T	
Physical Properties								
Physical Properties 200 mesh (>.075 mm)	%	0.15	0.28	0.64	<0.10	0.20	0.10	6602856
<u> </u>	%	0.15 99.9	0.28 99.7	0.64 99.4	<0.10	0.20 99.8	0.10	6602856 6602856

N/A = Not Applicable RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PHYSICAL TESTING (SOIL)

Maxxam ID		FS0783		FS0784		F\$0785		
Sampling Date		2013/02/21		2013/02/21		2013/02/21		
		08:00		08:10		08:20		
COC Number		S003354		S003354		S003354		
***************************************	1	DII 040040	QC Batch	BH-34-1.2-1.8	QC Batch	BH-34-1.8-2.4	ותם	QC Batch
	UNITS	BH-34-0.6-1.2	MC Daten	DN-34-1,2-1,0	NO DATOII	DN-34-1.0-2.4	NUL	QC Batti
Physical Properties	UNITS	BH-34-0.6-1.2	QC Batch	БП-34-1.2-1.0	QC Batch	BH-34-1.0-2.4	ROL	QC Batch

Maxxam ID		FS0786		FS0787		FS0788		
Sampling Date		2013/02/21		2013/02/21		2013/02/21		
		08:30		08:40		08:50	ŀ	
COC Number		S003354		S003354		S003354		
	UNITS	BH-34-2.4-3.0	QC Batch	BH-34-3.0-3.6	QC Batch	BH-34-3.6-4.2	RDL	QC Batch
Physical Properties								

axxam ID		FS0789		FS0790		FS0791		
mpling Date		2013/02/21		2013/02/21		2013/02/21		
		09:00		09:10	1	13:20		
OC Number		S003354		S003354		S003354		Ì
	UNITS	BH-34-4.2-4.8	QC Batch	BH-34-5.4-6.0	QC Batch	BH-39-0.6-1.2	RDL	QC Batch
	T							Τ'
ysical Properties								
oisture	%	35	6597940	34	6599165	26	0.30	6597940
ysical Properties	%	35	6597940	34	6599165	26	0.3	0

Maxxam ID		FS0792	FS0793	FS0794	1	
Sampling Date		2013/02/21	2013/02/21	2013/02/21		
		13:30	13:40	13:50		
COC Number		S003354	S003354	S003354		
	UNITS	BH-39-1.8-2.4	BH-39-3.0-3.6	BH-39-4.8-5.4	RDL	QC Batch
	1 - 1111 -					
Physical Proportion						
Physical Properties						



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FS0783	FS0785	FS0787		FS0789		1
Sampling Date		2013/02/21	2013/02/21	2013/02/21		2013/02/21		
		08:00	08:20	08:40	j	09:00		
COC Number		S003354	S003354	S003354		S003354		
	11111	DUSAGEAS	BH-34-1.8-2.4	BH-34-3.0-3.6	QC Batch	BH-34-4.2-4.8	וחם	QC Batch
	UNITS	BH-34-0.6-1.2	DH-34-1.0-2.4	† DILI-04-0-0-0	NO Daton	DI1-07-7,2-7,0	11/12/14	GC Batch
Total Metals by ICPMS	UNITS	BH-34-0.0-1.2	DH-34-1.0-2.4	<u> BN-34-3.0-3.0</u>	AC Datem	D11-04-4,2-4,0	IXOL.	NO Batch

Maxxam ID		FS0791	FS0792	FS0793	FS0794		
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21		
		13:20	13:30	13:40	13:50		
COC Number		\$003354	S003354	S003354	S003354		
	UNITS	BH-39-0.6-1.2	BH-39-1.8-2.4	BH-39-3.0-3.6	BH-39-4.8-5.4	RDL	QC Batch
Total Metals by ICPMS	UNITS	BH-39-0.6-1.2	BH-39-1.8-2.4	BH-39-3.0-3.6	BH-39-4.8-5.4	RDL	QC Batch



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FS0783	FS0785	FS0787	FS0789	FS0791	1	
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21		
		08:00	08:20	08:40	09:00	13:20		
COC Number		S003354	S003354	S003354	S003354	S003354		
l	UNITS	BH-34-0.6-1.2	BH-34-1.8-2.4	BH-34-3.0-3.6	BH-34-4.2-4.8	BH-39-0.6-1.2	RDL	QC Batch

Volatiles								
1,2-dichloroethane	mg/kg	<0.025 (1)	<0.025 (1)	<0.025 (1)	<0.025 (1)	<0.025 (1)	0.025	6604979
1,2-dibromoethane	mg/kg	<0.025 (1)	<0.025 (1)	<0.025 (1)	<0.025 (1)	<0.025 (1)	0.025	6604979

RDL = Reportable Detection Limit

(1) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime

	UNITS	BH-39-1.8-2.4	BH-39-1.8-2.4 Lab-Dub	BH-39-3.0-3.6	BH-39-4.8-5.4	RDL	QC Batch
COC Number		S003354	S003354	S003354	S003354		
		13:30	13:30	13:40	13:50		
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21		
Maxxam ID		FS0792	FS0792	FS0793	FS0794		

Volatiles							
1,2-dichloroethane	mg/kg	<0.025 (1)	<0.025	<0.025 (1)	<0.025 (1)	0.025	6604979
1,2-dibromoethane	mg/kg	<0.025 (1)	<0.025	<0.025 (1)	<0.025 (1)	0.025	6604979

RDL = Reportable Detection Limit

⁽¹⁾ Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

CCME BTEX/F1-F4 IN SOIL (SOIL)

Maxxam ID		FS0783		FS0785		FS0787		
Sampling Date		2013/02/21		2013/02/21		2013/02/21		
COC Number		08:00	<u> </u>	08:20		08:40		
COC Number	UNITS	S003354 BH-34-0.6-1.2	QC Batch	S003354	OO Datale	S003354	DDI	00041
	DIALLS	DIT-34-0.0-1.2	Mr patcu	BH-34-1.8-2.4	QC Batch	BH-34-3.0-3.6	RDL	QC Batch
Calculated Parameters]	
F1 (C6-C10) - BTEX	mg/kg	<10	6593938	<10	6593938	<10	10	6593938
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	6610325	<10	6610325	<10	10	6602831
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	6610325	23	6610325	53	10	6602831
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	6610325	<10	6610325	12	10	6602831
Reached Baseline at C50	mg/kg	Yes	6610325	Yes	6610325	Yes	N/A	6602831
Volatiles								
Methyl-tert-butylether (MTBE)	mg/kg	<0.10 (1)	6607498	<0.10 (1)	6606115	<0.10 (1)	0.10	6606115
Benzene	mg/kg	<0.0050 (1)	6607498	<0.0050 (1)	6606115	<0.0050 (1)	0.0050	6606115
Toluene	mg/kg	<0.020 (1)	6607498	<0.020 (1)	6606115	<0.020 (1)	0.020	6606115
Ethylbenzene	mg/kg	<0.010 (1)	6607498	<0.010 (1)	6606115	<0.010 (1)	0.010	6606115
m & p-Xylene	mg/kg	<0.040 (1)	6607498	<0.040 (1)	6606115	<0.040 (1)	0.040	6606115
o-Xylene	mg/kg	<0.040 (1)	6607498	<0.040 (1)	6606115	<0.040 (1)	0.040	6606115
Xylenes (Total)	mg/kg	<0.040	6607498	<0.040	6606115	<0.040	0.040	6606115
(C6-C10)	mg/kg	<10 (1)	6607498	<10 (1)	6606115	<10 (1)	10	6606115
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	102	6607498	102	6606115	100	N/A	6606115
4-BROMOFLUOROBENZENE (sur.)	%	100	6607498	101	6606115	103	N/A	6606115
D10-ETHYLBENZENE (sur.)	%	95	6607498	94	6606115	94	N/A	6606115
D4-1,2-DICHLOROETHANE (sur.)	%	96	6607498	96	6606115	97	N/A	6606115
O-TERPHENYL (sur.)	%	95	6610325	93	6610325	95	N/A	6602831

N/A = Not Applicable RDL = Reportable Detection Limit

(1) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

CCME BTEX/F1-F4 IN SOIL (SOIL)

Maxxam ID		FS0789		FS0791		FS0792	.].	<u> </u>
Sampling Date		2013/02/21		2013/02/21		2013/02/21		
COC Number		09:00		13:20		13;30	ļ	
COC Number	UNITS	S003354 BH-34-4.2-4.8	QC Batch	S003354	DC Batala	S003354	DDI	00 B-4-1
	UNITS	DN-34-4.2-4.8	MC Dates	BH-39-0.6-1.2	QC Batch	BH-39-1.8-2.4	RDL	QC Batch
Calculated Parameters							<u> </u>	
F1 (C6-C10) - BTEX	mg/kg	<10	6593938	<10	6593938	23	10	6593938
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	6602831	<10	6610325	24	10	6611348
F3 (C16-C34 Hydrocarbons)	mg/kg	36	6602831	11	6610325	29	10	6611348
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	6602831	<10	6610325	10	10	6611348
Reached Baseline at C50	mg/kg	Yes	6602831	Yes	6610325	Yes	N/A	6611348
Volatiles								
Methyl-tert-butylether (MTBE)	mg/kg	<0.10 (1)	6606115	<0.10 (1)	6607498	<0.10 (1)	0.10	6607498
Benzene	mg/kg	<0.0050 (1)	6606115	<0.0050 (1)	6607498	<0.0050 (1)	0.0050	6607498
Toluene	mg/kg	<0.020 (1)	6606115	<0.020 (1)	6607498	<0.020 (1)	0.020	6607498
Ethylbenzene	mg/kg	<0.010 (1)	6606115	<0.010 (1)	6607498	0.062 (1)	0.010	6607498
m & p-Xylene	mg/kg	<0.040 (1)	6606115	<0.040 (1)	6607498	0.21 (1)	0.040	6607498
o-Xylene	mg/kg	<0.040 (1)	6606115	<0.040 (1)	6607498	<0.040 (1)	0.040	6607498
Xylenes (Total)	mg/kg	<0.040	6606115	<0.040	6607498	0,21	0.040	6607498
(C6-C10)	mg/kg	<10 (1)	6606115	<10 (1)	6607498	23 (1)	10	6607498
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	104	6606115	101	6607498	100	N/A	6607498
4-BROMOFLUOROBENZENE (sur.)	%	104	6606115	101	6607498	102	N/A	6607498
D10-ETHYLBENZENE (sur.)	%	94	6606115	94	6607498	93	N/A	6607498
D4-1,2-DICHLOROETHANE (sur.)	%	102	6606115	98	6607498	103	N/A	6607498
O-TERPHENYL (sur.)	%	88	6602831	100	6610325	102	N/A	6611348

N/A = Not Applicable

RDL = Reportable Detection Limit

(1) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

CCME BTEX/F1-F4 IN SOIL (SOIL)

Maxxam ID		FS0793		FS0794		
Sampling Date		2013/02/21		2013/02/21		
		13:40		13:50		
COC Number	UNITS	S003354	00 0-4-1-	S003354	BBI	00 D-4-1
	LONITS	BH-39-3.0-3.6	QC Batch	BH-39-4.8-5.4	RDL	QC Batch
Calculated Parameters						
F1 (C6-C10) - BTEX	mg/kg	<10	6593938	<10	10	6593938
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	6602831	<10	10	6602831
F3 (C16-C34 Hydrocarbons)	mg/kg	12	6602831	22	10	6602831
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	6602831	<10	10	6602831
Reached Baseline at C50	mg/kg	Yes	6602831	Yes	N/A	6602831
Volatiles						
Methyl-tert-butylether (MTBE)	mg/kg	<0.10 (1)	6606115	<0.10 (1)	0.10	6607498
Benzene	mg/kg	<0.0050 (1)	6606115	<0.0050 (1)	0.0050	6607498
Toluene	mg/kg	<0.020 (1)	6606115	<0.020 (1)	0.020	6607498
Ethylbenzene	mg/kg	<0.010 (1)	6606115	<0.010 (1)	0.010	6607498
m & p-Xylene	mg/kg	<0.040 (1)	6606115	<0.040 (1)	0.040	6607498
o-Xylene	mg/kg	<0.040 (1)	6606115	<0.040 (1)	0.040	6607498
Xylenes (Total)	mg/kg	<0.040	6606115	<0.040	0.040	6607498
(C6-C10)	mg/kg	<10 (1)	6606115	<10 (1)	10	6607498
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	100	6606115	101	N/A	6607498
4-BROMOFLUOROBENZENE (sur.)	%	103	6606115	99	N/A	6607498
D10-ETHYLBENZENE (sur.)	%	94	6606115	95	N/A	6607498
D4-1,2-DICHLOROETHANE (sur.)	%	97	6606115	97	N/A	6607498
O-TERPHENYL (sur.)	%	94	6602831	82	N/A	6602831

N/A = Not Applicable

RDL = Reportable Detection Limit
(1) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL
Client Project #: 10-1177.100
Site Location: 208 ST. ANNE'S BOAD, WINNIES

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

Package 1 9.1°C

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

General Comments

Results relate only to the items tested.



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB314367

QA/QC			Date		•		·
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6597940 LO1	Method Blank	Moisture	2013/02/27	<0.30		%	
	RPD	Moisture	2013/02/27	8.4		%	20
6597941 LO1	Method Blank	Moisture	2013/02/28	<0.30		%	
	RPD	Moisture	2013/02/28	4.3		%	20
6599165 LO1	Method Blank	Moisture	2013/02/27	< 0.30		%	
	RPD	Moisture	2013/02/27	1.8		%	20
6602705 DJ	Matrix Spike	Total Lead (Pb)	2013/02/27		108	%	75 - 125
	QC Standard	Total Lead (Pb)	2013/02/27		100	%	70 - 130
	Spiked Blank	Total Lead (Pb)	2013/02/27		100	%	75 - 125
	Method Blank	Total Lead (Pb)	2013/02/27	< 0.10		mg/kg	
	RPD	Total Lead (Pb)	2013/02/27	2.8		%	35
6602709 NS6	Spiked Blank	Soluble (2:1) pH	2013/02/28		102	%	96 - 104
	RPD	Soluble (2:1) pH	2013/02/28	0.5		%	20
6602773 DJ	Matrix Spike	Total Lead (Pb)	2013/02/27		107	%	75 - 125
	QC Standard	Total Lead (Pb)	2013/02/27		102	%	70 - 130
Spiked Blank	Total Lead (Pb)	2013/02/27		108	%	75 - 125	
	Method Blank	Total Lead (Pb)	2013/02/27	<0.10		mg/kg	10 120
6602790 NS6	Spiked Blank	Soluble (2:1) pH	2013/02/27	-0.10	102	%	96 - 104
0002.00 1100	RPD	Soluble (2:1) pH	2013/02/27	0.1	102	%	20
6602831 TL2	Matrix Spike	O-TERPHENYL (sur.)	2013/02/27	0.1	100	%	50 - 130
COCECOT TEE	Matrix Opine	F2 (C10-C16 Hydrocarbons)	2013/02/27		108	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2013/02/27		102	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2013/02/27		97	%	50 - 130 50 - 130
	Snikad Diank	O-TERPHENYL (sur.)	2013/02/27		95	%	50 - 130
Spiked Blank	Opined blank	F2 (C10-C16 Hydrocarbons)	2013/02/27		97	%	80 - 120
			2013/02/27		90		80 - 120
		F3 (C16-C34 Hydrocarbons)				%	80 - 120
	Made at Diaute	F4 (C34-C50 Hydrocarbons)	2013/02/27		87 05	%	
	Method Blank	O-TERPHENYL (sur.)	2013/02/27	-40	95	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2013/02/27	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2013/02/27	<10		mg/kg	
	DDD	F4 (C34-C50 Hydrocarbons)	2013/02/27	<10		mg/kg	40
	RPD	F2 (C10-C16 Hydrocarbons)	2013/02/27	NC (1)		%	40
		F3 (C16-C34 Hydrocarbons)	2013/02/27	4.9 (1)		%	40
		F4 (C34-C50 Hydrocarbons)	2013/02/27	2.1 (1)		%	40
		Reached Baseline at C50	2013/02/27	NC		%	50
6602856 MCI	RPD [FS0784-01]	200 mesh (>.075 mm)	2013/02/27	NC		%	35
		200 mesh (<.075 mm)	2013/02/27	0.1		%	35
6604979 MM5	Matrix Spike						
	[FS0792-01]	1,2-dichloroethane	2013/03/02		92	%	60 - 140
		1,2-dibromoethane	2013/03/02		96	%	60 - 140
	Spiked Blank	1,2-dichloroethane	2013/03/01		110	%	60 - 140
		1,2-dibromoethane	2013/03/01		96	%	60 - 140
	Method Blank	1,2-dichloroethane	2013/03/01	<0.025		mg/kg	
		1,2-dibromoethane	2013/03/01	<0.025		mg/kg	
	RPD [FS0792-01]	1,2-dichloroethane	2013/03/02	NÇ		%	40
		1,2-dibromoethane	2013/03/02	NC		%	40
6606115 MM5	Matrix Spike	1,4-Difluorobenzene (sur.)	2013/02/28		104	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2013/02/28		100	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2013/02/28		92	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/02/28		97	%	70 - 130
		Benzene	2013/02/28		93	%	60 - 140
		Toluene	2013/02/28		94	%	60 - 140
		Ethylbenzene	2013/02/28		102	%	60 - 140
		m & p-Xylene	2013/02/28		101	%	60 - 140
		o-Xylene	2013/02/28		100	%	60 - 140
		= : y:sire				. •	20 . 10



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB314367

Batch Num Init			Date				
Num Init			Analyzed				
	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6606115 MM5		1,4-Difluorobenzene (sur.)	2013/02/28	Value	95	%	70 - 130
	•	4-BROMOFLUOROBENZENE (sur.)	2013/02/28		103	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2013/02/28		102	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/02/28		106	%	70 - 130
		Benzene	2013/02/28		104	%	60 - 140
		Toluene	2013/02/28		105	%	60 - 140
		Ethylbenzene	2013/02/28		113	%	60 - 140
		m & p-Xylene	2013/02/28		113	%	60 - 140
		o-Xylene	2013/02/28		112	% %	60 - 140
		(C6-C10)	2013/02/28		99	%	60 - 140
	Method Blank	1,4-Difluorobenzene (sur.)	2013/02/28		99 97	% %	
	WOULDS BIGHT	4-BROMOFLUOROBENZENE (sur.)	2013/02/28				70 - 130
		D10-ETHYLBENZENE (sur.)			100	%	70 - 130
			2013/02/28		109	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/02/28	-0.40	104	%	70 - 130
		Methyl-tert-butylether (MTBE)	2013/02/28	<0.10		mg/kg	
		Benzene	2013/02/28	<0.0050		mg/kg	
		Toluene	2013/02/28	<0.020		mg/kg	
		Ethylbenzene	2013/02/28	<0.010		mg/kg	
		m & p-Xylene	2013/02/28	<0.040		mg/kg	
		o-Xylene	2013/02/28	<0.040		mg/kg	
		Xylenes (Total)	2013/02/28	<0.040		mg/kg	
		(C6-C10)	2013/02/28	<10		mg/kg	
	RPD	Methyl-tert-butylether (MTBE)	2013/02/28	NC (2)		%	40
		Benzene	2013/02/28	NC (2)		%	40
		Toluene	2013/02/28	NC (2)		%	40
		Ethylbenzene	2013/02/28	NC (2)		%	40
		m & p-Xylene	2013/02/28	NC (2)		%	40
		o-Xylene	2013/02/28	NC (2)		%	40
		Xylenes (Total)	2013/02/28	NC `		%	40
6607498 MM5	Matrix Spike	1,4-Difluorobenzene (sur.)	2013/02/28		102	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2013/02/28		106	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2013/02/28		94	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/02/28		95	%	70 - 130
		Benzene	2013/02/28		106	%	60 - 140
		Toluene	2013/02/28		108	%	60 - 140
		Ethylbenzene	2013/02/28		116	%	60 - 140
		m & p-Xylene	2013/02/28		117	%	60 - 140
		o-Xylene	2013/02/28		118	%	60 - 140
	Spiked Blank	1,4-Difluorobenzene (sur.)	2013/02/28		101	%	70 - 130
	-piites -idilit	4-BROMOFLUOROBENZENE (sur.)	2013/02/28		107	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2013/02/28		83		
		D4-1,2-DICHLOROETHANE (sur.)	2013/02/28			%	50 - 130
		_			94	%	70 - 130
		Benzene	2013/02/28		79	%	60 - 140
		Toluene	2013/02/28		81	%	60 - 140
		Ethylbenzene	2013/02/28		88	%	60 - 140
		m & p-Xylene	2013/02/28		87	%	60 - 140
		o-Xylene	2013/02/28		87	%	60 - 140
	Read at Drawn	(C6-C10)	2013/02/28		104	%	60 - 140
	Method Blank	1,4-Difluorobenzene (sur.)	2013/02/28		103	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2013/02/28		100	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2013/02/28		93	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/02/28		97	%	70 - 130
		Methyl-tert-butylether (MTBE)	2013/02/28	<0.10		mg/kg	
		Benzene	2013/02/28	<0.0050		mg/kg	
		Toluene	2013/02/28	<0.020		mg/kg	



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB314367

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limit
6607498 MM5	Method Blank	Ethylbenzene	2013/02/28	<0.010		mg/kg	
		m & p-Xylene	2013/02/28	<0.040		mg/kg	
		o-Xylene	2013/02/28	<0.040		mg/kg	
		Xylenes (Total)	2013/02/28	< 0.040		mg/kg	
		(C6-C10)	2013/02/28	<10		mg/kg	
	RPD	Methyl-tert-butylether (MTBE)	2013/02/28	NC (2)		%	4
		Benzene	2013/02/28	NC (2)		%	4
		Toluene	2013/02/28	NC (2)		%	4
		Ethylbenzene	2013/02/28	NC (2)		%	4
		m & p-Xylene	2013/02/28	NC (2)		%	
		o-Xvlene	2013/02/28	NC (2)		%	2
		Xylenes (Total)	2013/02/28	NC (2)		%	- 4
		(C6-C10)	2013/02/28	NC (2)		%	- 4
6610325 TL2	Matrix Spike	O-TERPHENYL (sur.)	2013/02/20	140 (2)	97	%	50 - 13
0010020 162	Matrix Opino	F2 (C10-C16 Hydrocarbons)	2013/03/01			%	
		F3 (C16-C34 Hydrocarbons)	2013/03/01		96 79	%	50 - 13
							50 - 13
	Callead Dlamie	F4 (C34-C50 Hydrocarbons)	2013/03/01		79	%	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/01		82	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/01		102	%	80 - 12
		F3 (C16-C34 Hydrocarbons)	2013/03/01		83	%	80 - 12
		F4 (C34-C50 Hydrocarbons)	2013/03/01		84	%	80 - 12
	Method Blank	O-TERPHENYL (sur.)	2013/03/01		93	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/01	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2013/03/01	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2013/03/01	<10		mg/kg	
		Reached Baseline at C50	2013/03/01	YES		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2013/03/01	NC		%	4
		F3 (C16-C34 Hydrocarbons)	2013/03/01	NC		%	4
		F4 (C34-C50 Hydrocarbons)	2013/03/01	NC		%	4
		Reached Baseline at C50	2013/03/01	NC		%	5
6611348 PN2	Matrix Spike	O-TERPHENYL (sur.)	2013/03/04		99	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/04		102	%	50 - 13
		F3 (C16-C34 Hydrocarbons)	2013/03/04		90	%	50 - 13
		F4 (C34-C50 Hydrocarbons)	2013/03/04		81	%	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/04		103	%	50 - 13
	Opinoo Dianic	F2 (C10-C16 Hydrocarbons)	2013/03/04		102	%	80 - 12
		F3 (C16-C34 Hydrocarbons)	2013/03/04		90	%	80 - 12
		F4 (C34-C50 Hydrocarbons)	2013/03/04		81		
	Method Blank	O-TERPHENYL (sur.)				%	80 - 12
	Metrico Diarix	` '	2013/03/04	-40	113	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/04	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2013/03/04	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2013/03/04	<10		mg/kg	
	DDD	Reached Baseline at C50	2013/03/04	YES		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2013/03/04	8,3		%	4
		F3 (C16-C34 Hydrocarbons)	2013/03/04	NC		%	4
		F4 (C34-C50 Hydrocarbons)	2013/03/04	NC		%	4
		Reached Baseline at C50	2013/03/04	NC		%	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency,



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB314367

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) Detection limits raised due to high moisture content.

(2) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



Validation Signature Page

Maxxam Job #: B314367
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).
Andy Lu, Touta Validation Coordinator
Andy Lu, Bata Vandation Coolumator

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

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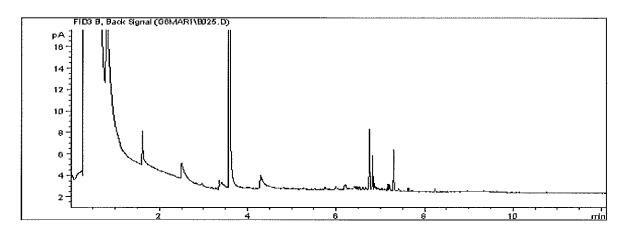
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

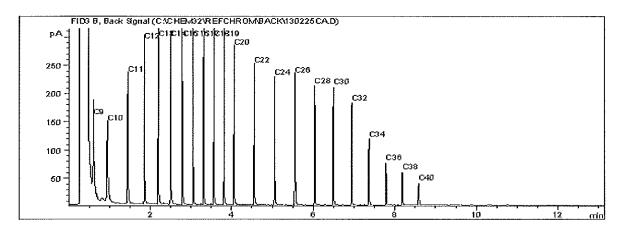
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-34-0.6-1.2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	€4	-	C12	Diesel:	C8	_	C22
Varsol:	ca		C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7		C16	Crude Oils:	CЗ	_	C60+



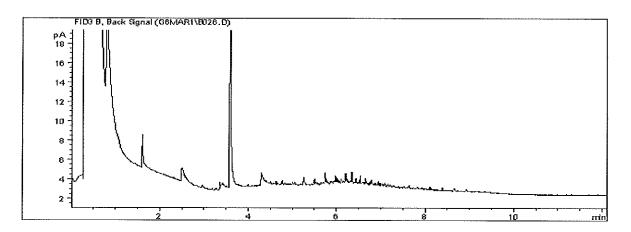
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

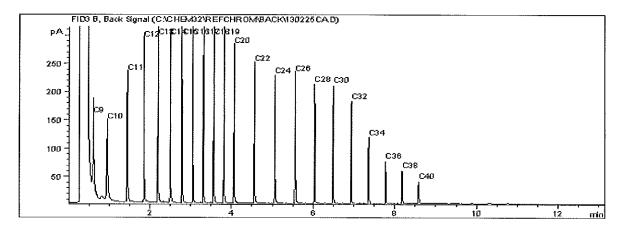
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-34-1.8-2.4

CCME Hydrocarbons (F2-F4 in soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8	-	022
Varsol:	C8	_	C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7	-	C16	Crude Oils:	СЗ	_	C60+



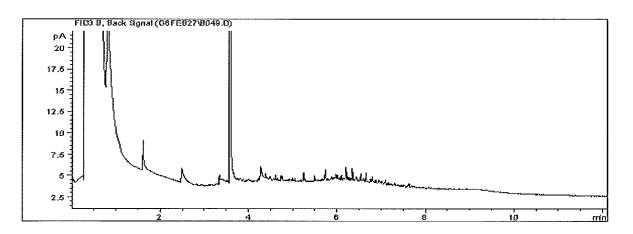
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

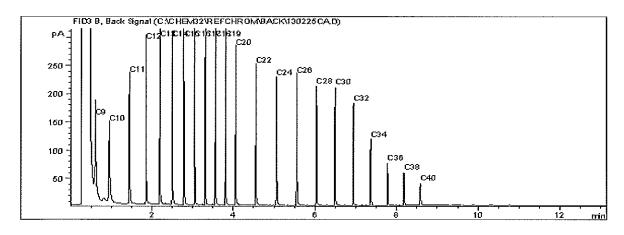
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-34-3.0-3.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8	_	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20		C40
Kerosene:	C7	_	C16	Crude Oils:	C3	-	C60+



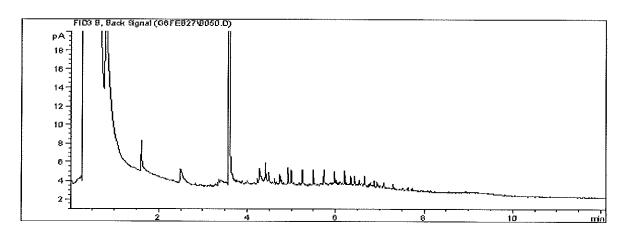
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

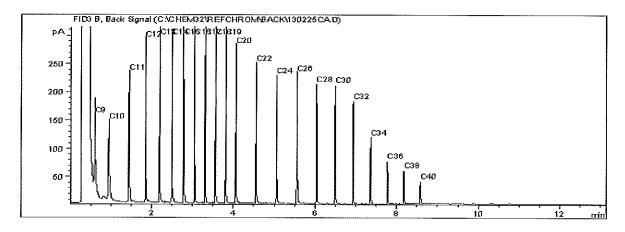
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-34-4.2-4.8

CCME Hydrocarbons (F2-F4 In soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8	 C22
Varsol:	C8	-	C12	Lubricating Oils:	C20	 C40
Kerosene:	67		C16	Crude Oils:	C3	 C60+



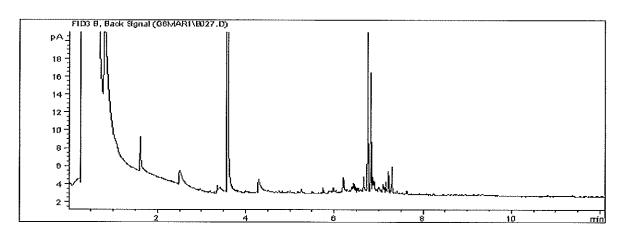
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

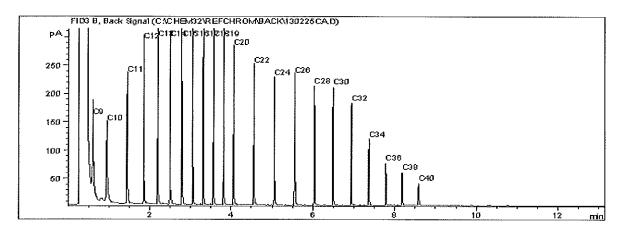
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-39-0.6-1.2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8	_	C22
Varsol:	CB	-	C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7		C16	Crude Oils:	C3	_	C60+



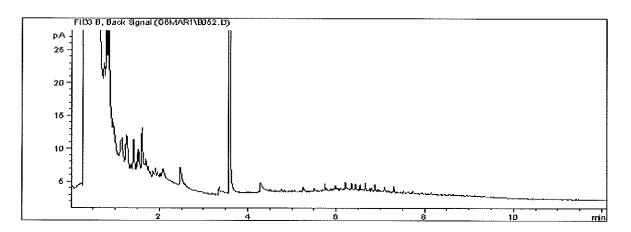
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

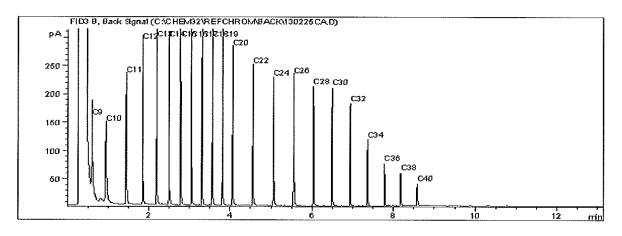
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-39-1.8-2.4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	 C12	Diesel:	C8	_	C22
Varsol:	C8	 C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7	 C16	Crude Oils:	C3	_	C60+



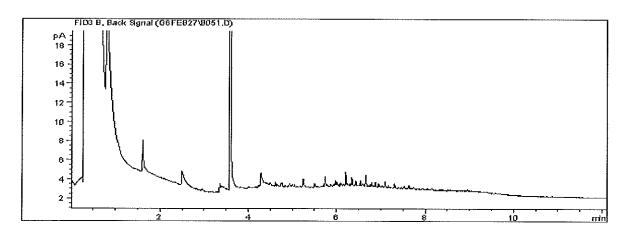
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

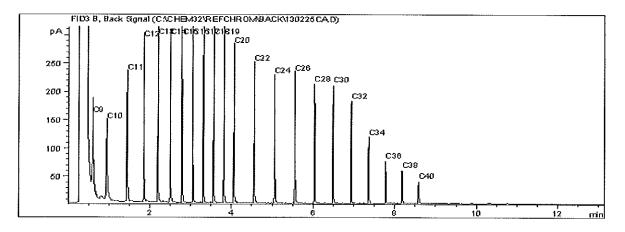
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-39-3.0-3.6

CCME Hydrocarbons (F2-F4 in soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8	_	C22
Varsol:	C8		C12	Lubricating Oils:	C20		C40
Kerosene:	C7	•	C16	Crude Oils:	CЗ		C60+



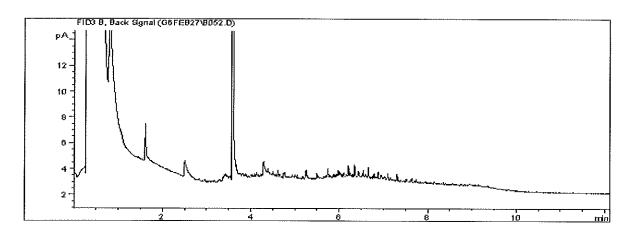
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

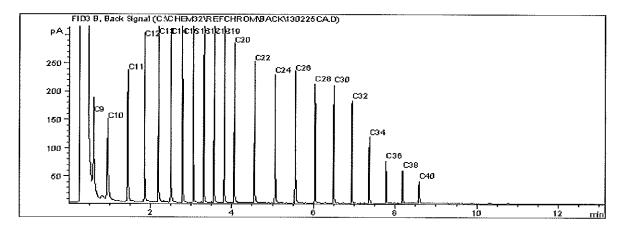
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-39-4.8-5.4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8		C22
Varsol:	C8		C12	Lubricating Oils:	C20		C40
Kerosene:	C7		C16	Crude Oils:	C3	_	C60+

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons				Sampling Date:	2013/02/21
Location: 208 St. Anne's	s Road, Winnip	oeg, MB		Laboratory:	Maxxam Analytics, Winnipeg
Consultant Project Number: 1	0-1177.100			Sample Subr	nission Number: <u>B314367</u>
Are All Laboratory QC Samples Wi	thin Acceptan	ce Criteria	(Yes, No,	Not Applicable)?	
	Yes	No	NA		Comments
Instrument Surrogate Recovery	X	1.0		All lab QC met accept	**************************************
Extraction Surrogate Recovery	X				
Method Blank Concentration	X				
Matrix Duplicate RPD	X				
Matrix Spike Recovery	X				
Lab Control Sample Recovery			X		
Are All Field QC Samples Within A	Alert Limits (Y	es, No, Not	t Applicat	le)?	
	Yes	No	NA		Comments
Field Blank Concentration			X	No field QC were sub	mitted.
Trip Blank Concentration			X		
Field Duplicate RPD			X		
Has CoA been signed off (Yes/No) Has lab warranted all tests were in some Has lab warranted all tests were and Were all samples analyzed within hall volatiles samples methanol extra Is Chain of Custody completed and Were sample temperatures acceptable.	statistical contralyzed followin old times (Yes acted, if requir signed (Yes/N	ng SOP's in /No)?: ed, within 4 [o)?:	CoA (Ye	s, No or N/A)?: Yes, No or N/A)?:	Yes Yes Yes Yes No Yes Yes
Was a Data Quality Waiver (DQW)	issued (Yes, N	No or N/A)'	?:		No
Date Issued: _			tic .	Date of Response:	·
Is data considered to be reliable (Ye If answer is "No", describe and pro				Yes	a.
Data Reviewed by (Print): <u>A</u> Review Date: <u>2</u> Revision Date (if applicable): _	013/03/06				ed by (Signature): <u>ALL P. M.</u>



Your Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003353

Attention: Adam Wickman

O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2013/03/05

This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B314377 Received: 2013/02/22, 14:35

Sample Matrix: Soil # Samples Received: 11

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS (1)	7	2013/02/26	2013/02/28	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX (1)	2	N/A	2013/02/28	BBY WI-00033	BC MOE Lab Method
Volatile F1-BTEX (1)	5	N/A	2013/03/01	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	6	2013/02/26	2013/02/27	BBY8SOP-00030	CCME Soil Tier 1
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2013/02/26	2013/03/04	BBY8SOP-00030	CCME Soil Tier 1
Grain Size Classification (Calc) (1)	4	N/A	2013/02/27	BBY6SOP-00039	Carter SSMA 47.4
Elements by ICPMS (total) (1)	7	2013/02/26	2013/02/27	BBY7SOP-00001	EPA 6020A
Particulate Mesh 200 (1)	4	N/A	2013/02/27	BBY6SOP-00039	Carter SSMA 47.4
Moisture (1)	4	N/A	2013/02/27	BBY8SOP-00017	Ont MOE -E 3139
Moisture (1)	7	N/A	2013/02/28	BBY8SOP-00017	Ont MOE -E 3139
pH (2:1 DI Water Extract) (1)	7	2013/02/27	2013/02/27	BBY6SOP-00028	Carter, SSMA 16.2
VOCs in Soil by HS GC/MS (1)	1	2013/02/26	2013/03/01	BBY8-SOP-0009	EPA 8260C
VOCs in Soil by HS GC/MS (1)	6	2013/02/26	2013/03/02	BBY8-SOP-0009	EPA 8260C

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Janelle Kochan

(paralle Kochan 05 Mar 2013 14:57:51 -08:00

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

Janelle Kochan, B.Sc., Project Manager, Email: JKochan@maxxam.ca Phone# (204) 772-7276 Ext:2209

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



RDL = Reportable Detection Limit

Maxxam Job #: B314377 Report Date: 2013/03/05 O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		FS0841	FS0843	FS0845	FS0847	F\$0848		
Sampling Date]	2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21		
		09:40	10:00	10:20	11:40	11:50		
COC Number		\$003353	\$003353	S003353	S003353	\$003353		
	UNITS	BH-35-0.6-1.2	BH-35-2.4-3.0	BH-35-4.2-4.8	BH-37-0.0-0.6	BH-37-1.8-2.4	RDL	QC Batch
							T	
Physical Properties								

Maxxam ID		FS0849	FS0850		
Sampling Date		2013/02/21	2013/02/21		
		12:00	12:10		
COC Number		S003353	S003353		
					1
	UNITS	BH-37-3.0-3.6	BH-37-4.2-4.8	RDL	QC Batci
Physical Properties	UNITS	BH-37-3.0-3.6	BH-37-4.2-4.8	RDL	QC Batcl



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PARTICLE SIZE DISTRIBUTION ANALYSIS (SOIL)

Maxxam ID		FS0840	FS0842	FS0844	FS0846		
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21		
· ·		09:30	09:50	10:10	10:30		
COC Number		S003353	\$003353	\$003353	S003353		
	UNITS	BH-35-0.0-0.6	BH-35-1.8-2.4	BH-35-3.0-3.6	BH-35-4.8-5.4	RDL	QC Batch

Physical Properties							
200 mesh (>.075 mm)	%	0.95	0.36	1.02	0.33	0.10	6602856
200 mesh (<.075 mm)	%	99.1	99.6	99.0	99.7	0.10	6602856
Grain Size	N/A	FINE	FINE	FINE	FINE	N/A	6593955

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PHYSICAL TESTING (SOIL)

Maxxam ID		FS0840		FS0841		FS0842		
Sampling Date		2013/02/21		2013/02/21		2013/02/21		
. •		09:30		09:40		09:50		
COC Number		S003353		S003353		S003353		
			DC Datab	BH-35-0.6-1.2	QC Batch	BH-35-1.8-2.4	PDI	QC Batch
·	UNITS	BH-35-0.0-0.6	QC Batch	DU-33-0.0-1.5	QU Datti	BU-20-1-0-5-4	INDL	NC Daten
Physical Properties	UNITS	BH-35-0.0-0.6	QC Batch	ВП-33-0.0-1.2	QO BACCII	BA-33-1.0-2.4	INDL	Date:

Maxxam ID		FS0843		FS0844		FS0845		
Sampling Date		2013/02/21		2013/02/21		2013/02/21		
		10:00		10:10		10:20	·	
COC Number		S003353		S003353		S003353		
					2021	DIL 04 (0 4 0	DDI	DO Datale
	UNITS	BH-35-2.4-3.0	QC Batch	BH-35-3.0-3.6	QC Batch	BH-35-4.2-4.8	RUL	QC Batch
Physical Properties	UNITS	BH-35-2.4-3.0	QC Batch	BH-35-3.0-3.6	QC Batch	BH-35-4.2-4.8	RUL	UC Batch

2013/02/21		00101000				
		2013/02/21	2013/02/21	2013/02/21	T	
10:30		11:40	11:50	12:00		
\$003353		S003353	S003353	S003353		
BH-35-4.8-5.4	QC Batch	BH-37-0.0-0.6	BH-37-1.8-2.4	BH-37-3.0-3.6	RDL	QC Batch
					T	
33	6599165	23	15	35	0.30	6597941
	S003353 BH-35-4.8-5.4	S003353 BH-35-4.8-5.4 QC Batch	S003353 S003353 BH-35-4.8-5.4 QC Batch BH-37-0.0-0.6	S003353 S003353 S003353 BH-35-4.8-5.4 QC Batch BH-37-0.0-0.6 BH-37-1.8-2.4	S003353 S003353 S003353 S003353 BH-35-4.8-5.4 QC Batch BH-37-0.0-0.6 BH-37-1.8-2.4 BH-37-3.0-3.6	S003353 S003353 S003353 S003353 BH-35-4.8-5.4 QC Batch BH-37-0.0-0.6 BH-37-1.8-2.4 BH-37-3.0-3.6 RDL

	FS0850		l
	2013/02/21		
	12:10		
	S003353		
UNITS	BH-37-4.2-4.8	RDL	QC Batch
	UNITS	2013/02/21 12;10 \$003353	2013/02/21 12:10 \$003353

0.10 6598356

270



Total Lead (Pb)

Maxxam Job #: B314377 Report Date: 2013/03/05

O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

14.3

Sampler Initials: AB

14.8

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

	10		1 2011 00 2017 010	, =,, == +,4,-4,0	DIT-01-010-010	ii xDC	MA DUICH
COC Number	UNITS	S003353 BH-35-0.6-1.2	S003353 BH-35-2.4-3.0	S003353 BH-35-4.2-4.8	S003353 BH-37-0.0-0.6	RDI	QC Batch
COC Number	-	09:40	10:00	10:20	11:40		
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21		
Maxxam ID		FS0841	FS0843	FS0845	FS0847		

4.06

RDL = Reportable Detection Limit

Maxxam ID		FS0848	FS0849	FS0850		Ü
Sampling Date		2013/02/21	2013/02/21	2013/02/21		
		11:50	12:00	12:10		
COC Number		S003353	S003353	S003353		
	UNITS	BH-37-1.8-2.4	BH-37-3.0-3.6	BH-37-4.2-4.8	RDL	QC Batch

Total Metals by ICPMS		•				
Total Lead (Pb)	mg/kg	5.94	15.3	16,4	0.10	6598356
RDI = Renortable Detect	ion I lmit		1	.1	P	

mg/kg



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FS0841	FS0843	FS0845	FS0847	FS0848		
Sampling Date		2013/02/21	2013/02/21	2013/02/21	2013/02/21	2013/02/21		
		09:40	10:00	10:20	11:40	11:50		
COC Number		S003353	S003353	S003353	S003353	S003353		
	UNITS	BH-35-0.6-1.2	BH-35-2.4-3.0	BH-35-4.2-4.8	BH-37-0.0-0.6	BH-37-1.8-2.4	RDL	QC Batch

Volatiles								
1,2-dichloroethane	mg/kg	<0.025 (1)	<0.025 (1)	<0.025 (1)	<0.025 (1)	<0.025 (1)	0.025	6604979
1,2-dibromoethane	mg/kg	<0.025 (1)	<0.025 (1)	<0.025 (1)	<0.025 (1)	<0.025 (1)	0.025	6604979

RDL = Reportable Detection Limit

(1) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime

	UNITS	BH-37-3.0-3.6	QC Batch	BH-37-4.2-4.8	RDL	QC Batch
COC Number		\$003353		S003353		
		12:00		12:10		
Sampling Date		2013/02/21		2013/02/21		
Maxxam ID		FS0849		FS0850		

Volatiles						
1,2-dichloroethane	mg/kg	<0.025 (1)	6604979	<0.025 (1)	0.025	6612201
1,2-dibromoethane	mg/kg	<0.025 (1)	6604979	<0.025 (1)	0.025	6612201

RDL = Reportable Detection Limit

^(1) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

CCME BTEX/F1-F4 IN SOIL (SOIL)

Maxxam ID		FS0841	FS0843	FS0845	FS0847		l
Sampling Date	-	2013/02/21	2013/02/21	2013/02/21	2013/02/21	+	
Camping Date		09:40	10:00	10:20	11:40		
COC Number		S003353	S003353	S003353	S003353		
	UNITS	BH-35-0.6-1.2	BH-35-2.4-3.0	BH-35-4.2-4.8	BH-37-0.0-0.6	RDL	QC Batch
				1			ł""
Calculated Parameters							
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	10	6593938
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	10	6602831
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	11	100	10	6602831
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	<10	73	10	6602831
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	6602831
Volatiles							
Methyl-tert-butylether (MTBE)	mg/kg	<0.10 (1)	<0.10 (1)	<0.10 (1)	<0.10 (1)	0.10	6607498
Benzene	mg/kg	<0.0050 (1)	<0.0050 (1)	<0.0050 (1)	0.57 (1)	0.0050	6607498
Toluene	mg/kg	<0.020 (1)	<0.020 (1)	<0.020 (1)	0.040 (1)	0.020	6607498
Ethylbenzene	mg/kg	<0.010 (1)	<0.010 (1)	<0.010 (1)	0.34 (1)	0.010	6607498
m & p-Xylene	mg/kg	<0.040 (1)	<0.040 (1)	<0.040 (1)	0.22 (1)	0.040	6607498
o-Xylene	mg/kg	<0.040 (1)	<0.040 (1)	<0.040 (1)	0.11 (1)	0.040	6607498
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	0.33	0.040	6607498
(C6-C10)	mg/kg	<10 (1)	<10 (1)	<10 (1)	<10 (1)	10	6607498
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	101	102	100	102	N/A	6607498
4-BROMOFLUOROBENZENE (sur.)	%	101	100	101	99	N/A	6607498
D10-ETHYLBENZENE (sur.)	%	97	94	96	93	N/A	6607498
D4-1,2-DICHLOROETHANE (sur.)	%	96	97	98	98	N/A	6607498
O-TERPHENYL (sur.)	%	96	95	94	98	N/A	6602831

N/A = Not Applicable RDL = Reportable Detection Limit

⁽¹⁾ Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

CCME BTEX/F1-F4 IN SOIL (SOIL)

- · · · · · · · · · · · · · · · · · · ·							
Maxxam ID		FS0848	FS0848		FS0849		
Sampling Date		2013/02/21	2013/02/21		2013/02/21		
COO Niverbar		11:50 S003353	11:50 S003353	 	12:00 \$003353		
COC Number	UNITS	BH-37-1.8-2.4	BH-37-1.8-2.4	QC Batch	BH-37-3.0-3.6	RDL	QC Batch
	Omi	B11-01-110-2.4	Lab-Dup	Sto Buton	B11-07-010-010	1.02	Zo Buton
Calculated Parameters							
F1 (C6-C10) - BTEX	mg/kg	<10	N/A	6593938	<10	10	6593938
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	190	N/A	6610325	<10	10	6602831
F3 (C16-C34 Hydrocarbons)	mg/kg	55	N/A	6610325	<10	10	6602831
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	N/A	6610325	<10	10	6602831
Reached Baseline at C50	mg/kg	Yes	N/A	6610325	Yes	N/A	6602831
Volatiles							
Methyl-tert-butylether (MTBE)	mg/kg	<0.10 (1)	<0.10 (1)	6607498	<0.10 (1)	0.10	6607498
Benzene	mg/kg	<0.0050 (1)	<0.0050 (1)	6607498	<0.0050 (1)	0.0050	6607498
Toluene	mg/kg	<0.020 (1)	<0.020 (1)	6607498	<0.020 (1)	0.020	6607498
Ethylbenzene	mg/kg	<0.010 (1)	<0.010 (1)	6607498	<0.010 (1)	0.010	6607498
m & p-Xylene	mg/kg	<0.040 (1)	<0.040 (1)	6607498	<0.040 (1)	0.040	6607498
o-Xylene	mg/kg	<0.040 (1)	<0.040 (1)	6607498	<0.040 (1)	0.040	6607498
Xylenes (Total)	mg/kg	<0.040	<0.040	6607498	<0.040	0.040	6607498
(C6-C10)	mg/kg	<10 (1)	<10 (1)	6607498	<10 (1)	10	6607498
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	102	101	6607498	101	N/A	6607498
4-BROMOFLUOROBENZENE (sur.)	%	101	104	6607498	102	N/A	6607498
D10-ETHYLBENZENE (sur.)	%	93	94	6607498	98	N/A	6607498
D4-1,2-DICHLOROETHANE (sur.)	%	97	97	6607498	102	N/A	6607498
O-TERPHENYL (sur.)	%	95	N/A	6610325	95	N/A	6602831

N/A = Not Applicable

RDL = Reportable Detection Limit

⁽¹⁾ Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

CCME BTEX/F1-F4 IN SOIL (SOIL)

	UNITS	BH-37-4.2-4.8	RDL	QC Batch
COC Number		S003353		
		12:10		
Sampling Date		2013/02/21		
Maxxam ID		FS0850		

Calculated Parameters				
F1 (C6-C10) - BTEX	mg/kg	<10	10	6593938
Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	10	6602831
F3 (C16-C34 Hydrocarbons)	mg/kg	17	10	6602831
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	10	6602831
Reached Baseline at C50	mg/kg	Yes	N/A	6602831
Volatiles				
Methyl-tert-butylether (MTBE)	mg/kg	<0.10 (1)	0.10	6607498
Benzene	mg/kg	<0.0050 (1)	0.0050	6607498
Toluene	mg/kg	<0.020 (1)	0.020	6607498
Ethylbenzene	mg/kg	<0.010 (1)	0.010	6607498
m & p-Xylene	mg/kg	<0.040 (1)	0.040	6607498
o-Xylene	mg/kg	<0.040 (1)	0.040	6607498
Xylenes (Total)	mg/kg	<0.040	0.040	6607498
(C6-C10)	mg/kg	<10 (1)	10	6607498
Surrogate Recovery (%)				
1,4-Difiuorobenzene (sur.)	%	101	N/A	6607498
4-BROMOFLUOROBENZENE (sur.)	%	100	N/A	6607498
D10-ETHYLBENZENE (sur.)	%	99	N/A	6607498
D4-1,2-DICHLOROETHANE (sur.)	%	99	N/A	6607498
O-TERPHENYL (sur.)	%	84	N/A	6602831
			•	

N/A = Not Applicable

RDL = Reportable Detection Limit

^(1) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

Package 1 9.8°C

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

General Comments

Results relate only to the items tested.



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB314377

QA/QC			Date				110
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6597941 LO1	Method Blank	Moisture	2013/02/28	<0.30		%	
	RPD	Moisture	2013/02/28	4.3		%	20
6598356 DJ	Matrix Splke	Total Lead (Pb)	2013/02/27		102	%	75 - 125
	QC Standard	Total Lead (Pb)	2013/02/27		96	%	70 - 130
	Spiked Blank	Total Lead (Pb)	2013/02/27		102	%	75 - 125
	Method Blank	Total Lead (Pb)	2013/02/27	<0.10		mg/kg	
	RPD	Total Lead (Pb)	2013/02/27	1.1		%	35
6598360 NS6	Spiked Blank	Soluble (2:1) pH	2013/02/27		102	%	96 - 104
	RPD	Soluble (2:1) pH	2013/02/27	0.9		%	20
6599165 LO1	Method Blank	Moisture	2013/02/27	<0.30		%	
	RPD	Moisture	2013/02/27	1.8		%	20
602831 TL2	Matrix Spike	O-TERPHENYL (sur.)	2013/02/27		100	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2013/02/27		108	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2013/02/27		102	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2013/02/27		97	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2013/02/27		95	%	50 - 130
	'	F2 (C10-C16 Hydrocarbons)	2013/02/27		97	%	80 - 120
		F3 (C16-C34 Hydrocarbons)	2013/02/27		90	%	80 - 120
		F4 (C34-C50 Hydrocarbons)	2013/02/27		87	%	80 - 120
	Method Blank	O-TERPHENYL (sur.)	2013/02/27		95	%	50 - 130
	Motrica Bianit	F2 (C10-C16 Hydrocarbons)	2013/02/27	<10	00	mg/kg	00 100
		F3 (C16-C34 Hydrocarbons)	2013/02/27	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2013/02/27	<10		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2013/02/27	NC (1)		₩ %	40
	KILD	F3 (C16-C34 Hydrocarbons)	2013/02/27	4.9 (1)		%	40
			2013/02/27			%	40
		F4 (C34-C50 Hydrocarbons)		2.1 (1)			
COOOCC MOI	RPD	Reached Baseline at C50	2013/02/27	NC		% %	50 35
8602856 MCI	KFD	200 mesh (>.075 mm)	2013/02/27	NC			
2001070 11117	11.15.0.11.	200 mesh (<.075 mm)	2013/02/27	0,1		%	35
6604979 MM5	Matrix Spike	1,2-dichloroethane	2013/03/02		92	%	60 - 140
		1,2-dibromoethane	2013/03/02		96	%	60 - 140
	Spiked Blank	1,2-dichloroethane	2013/03/01		110	%	60 - 140
		1,2-dibromoethane	2013/03/01		96	%	60 - 140
	Method Blank	1,2-dichloroethane	2013/03/01	<0.025		mg/kg	
		1,2-dibromoethane	2013/03/01	<0.025		mg/kg	
	RPD	1,2-dichloroethane	2013/03/02	NC		%	40
		1,2-dibromoethane	2013/03/02	NC		%	40
607498 MM5	Matrix Spike						
	[FS0848-01]	1,4-Difluorobenzene (sur.)	2013/02/28		102	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2013/02/28		106	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2013/02/28		94	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/02/28		95	%	70 - 130
		Benzene	2013/02/28		106	%	60 - 140
		Toluene	2013/02/28		108	%	60 - 140
		Ethylbenzene	2013/02/28		116	%	60 - 140
		m & p-Xylene	2013/02/28		117	%	60 - 140
		o-Xylene	2013/02/28		118	%	60 - 140
	Spiked Blank	1,4-Difluorobenzene (sur.)	2013/02/28		101	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2013/02/28		107	%	70 - 130
		D10-ETHYLBENZENE (sur.)	2013/02/28		83	%	50 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/02/28		94	%	70 - 130
		Benzene	2013/02/28		79	%	60 - 140
		Toluene	2013/02/28		79 81	% %	60 - 140
			2013/02/28				
		Ethylbenzene			88	%	60 - 140
		m & p-Xylene	2013/02/28		87	%	60 - 140



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB314377

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limit
6607498 MM5	Spiked Blank	o-Xylene	2013/02/28		87	%	60 - 14
		(C6-C10)	2013/02/28		104	%	60 - 14
	Method Blank	1,4-Difluorobenzene (sur.)	2013/02/28		103	%	70 - 13
		4-BROMOFLUOROBENZENE (sur.)	2013/02/28		100	%	70 - 13
		D10-ETHYLBENZENE (sur.)	2013/02/28		93	%	50 - 13
		D4-1,2-DICHLOROETHANE (sur.)	2013/02/28		97	%	70 - 13
		Methyl-tert-butylether (MTBE)	2013/02/28	<0.10		mg/kg	
		Benzene	2013/02/28	<0.0050		mg/kg	
		Toluene	2013/02/28	<0.020		mg/kg	
		Ethylbenzene	2013/02/28	<0.010		mg/kg	
		m & p-Xylene	2013/02/28	<0.040		mg/kg	
		o-Xylene	2013/02/28	< 0.040		mg/kg	
		Xylenes (Total)	2013/02/28	< 0.040		mg/kg	
		(Ć6-C10)	2013/02/28	<10		mg/kg	
	RPD [FS0848-01]	Methyl-tert-butylether (MTBE)	2013/02/28	NC (2)		%	4
	[Benzene	2013/02/28	NC (2)		%	4
		Toluene	2013/02/28	NC (2)		%	4
		Ethylbenzene	2013/02/28	NC (2)		%	4
		m & p-Xylene	2013/02/28	NC (2)		%	
		o-Xylene	2013/02/28	NC (2)		%	4
		Xylenes (Total)	2013/02/28	NC (2)		%	-
		(C6-C10)	2013/02/28	NC (2)		%	4
6610325 TL2	Matrix Spike	O-TERPHENYL (sur.)	2013/03/01	110 (2)	97	%	50 - 13
0010020 122	Matrix Opino	F2 (C10-C16 Hydrocarbons)	2013/03/01		96	%	50 - 13
		F3 (C16-C34 Hydrocarbons)	2013/03/01		79	%	50 - 13
		F4 (C34-C50 Hydrocarbons)	2013/03/01		79	%	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/01		82	%	50 - 13
	Spiked blank	F2 (C10-C16 Hydrocarbons)	2013/03/01		102	%	80 - 12
		F3 (C16-C34 Hydrocarbons)			83	%	80 - 12
		,	2013/03/01		84		80 - 12 80 - 12
	Method Blank	F4 (C34-C50 Hydrocarbons)	2013/03/01			% %	
	Method Blank	O-TERPHENYL (sur.)	2013/03/01	-40	93		50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/01	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2013/03/01	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2013/03/01	<10		mg/kg	
	000	Reached Baseline at C50	2013/03/01	YES		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2013/03/01	NC		%	4
		F3 (C16-C34 Hydrocarbons)	2013/03/01	NC		%	4
		F4 (C34-C50 Hydrocarbons)	2013/03/01	NC		%	4
		Reached Baseline at C50	2013/03/01	NC		%	{
6612201 MM5	Matrix Spike	1,2-dichloroethane	2013/03/01		119	%	60 - 14
		1,2-dibromoethane	2013/03/01		123	%	60 - 14
	Spiked Blank	1,2-dichloroethane	2013/03/01		116	%	60 - 14
		1,2-dibromoethane	2013/03/01		110	%	60 - 14
	Method Blank	1,2-dichloroethane	2013/03/01	< 0.025		mg/kg	
		1,2-dibromoethane	2013/03/01	<0.025		mg/kg	
	RPD	1,2-dichloroethane	2013/03/01	NC (2)		%	4
		1,2-dibromoethane	2013/03/01	NC (2)		%	

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.

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.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB314377

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) Detection limits raised due to high moisture content.

(2) Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime



Validation Signature Page

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

Andy Lu, Data Validation Coordinator

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

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Same Actor Revoca	SERVICE 12.04Y SERVICE 12.04Y REQUESTED: Date Required: RECULAR (5 Dept) RECULAR (5 Dept)	- Ru-14-00-0-	18H-35-0-6-12	こ田二・ストー・スー・スエ	- B3-75-50	81-30-30 81-30-30	- 元二・んだ・なの一よの	1 81 - 46 - 4.4 - 4.4	# Ru-37-0.0-0.6	では、なったこの。	36-08-18-18	187-87-43-48		Please indicate Filtered, Preserved or 56th (F. P., 572)	おきなるとのであるが、 といいとはなるのである。	The state of the s	

Page 15 of 22 Salar Allendaria

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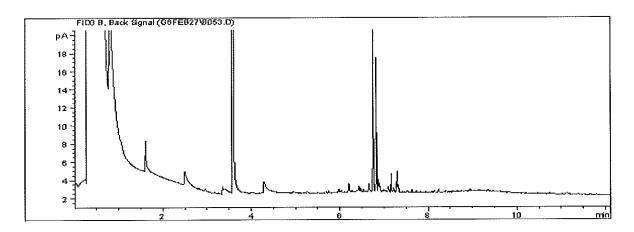
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

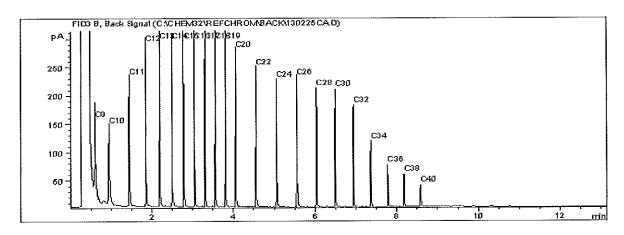
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-35-0.6-1.2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8	_	C22
Varsol:	C8		Cl2	Lubricating Oils:	C20		C40
Kerosene:	C7		C16	Crude Oils:	C3	-	C60+



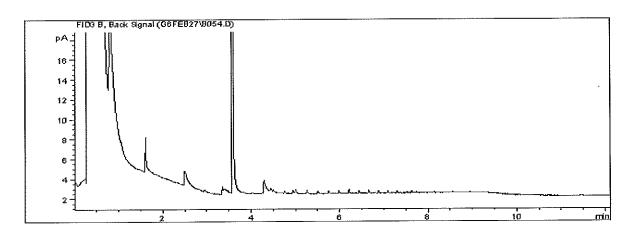
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

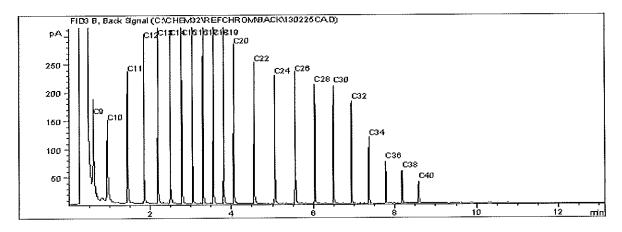
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-35-2.4-3.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	- C12	Diesel:	C8 -	C22
Varsol:	C8 -	- C12	Lubricating Oils:	C20 -	C40
Kerosene:	C7 -	- C16	Crude Oils:	сз -	C60+



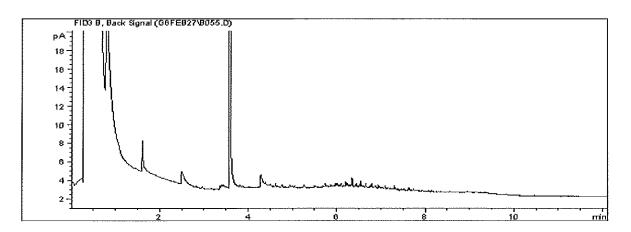
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

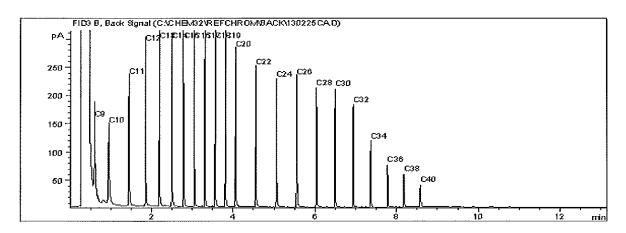
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-35-4.2-4.8

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8	 C22
Varsol:	C8	-	C12	Lubricating Oils:	620	 C40
Kerosene:	C7	-	C16	Crude Oils:	C3	 C60+



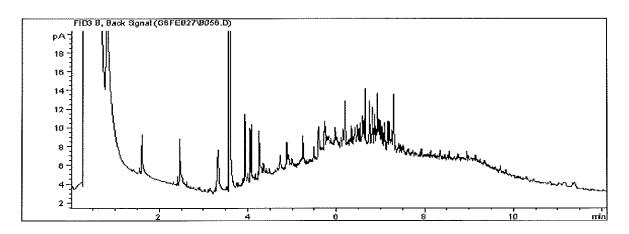
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

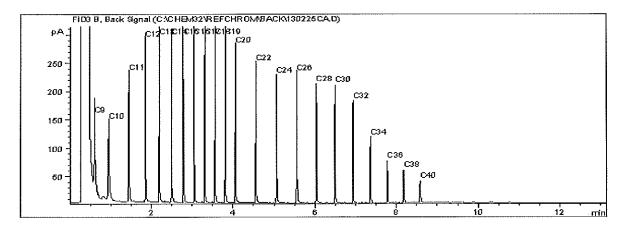
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-37-0.0-0.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8	-	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7	_	C16	Crude Oils:	C3	-	C60+



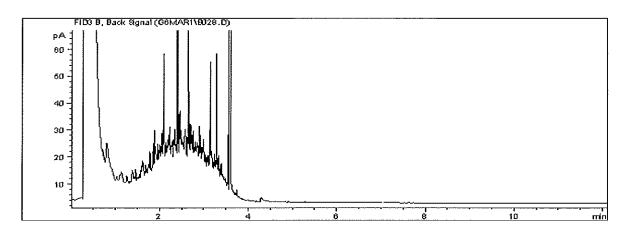
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

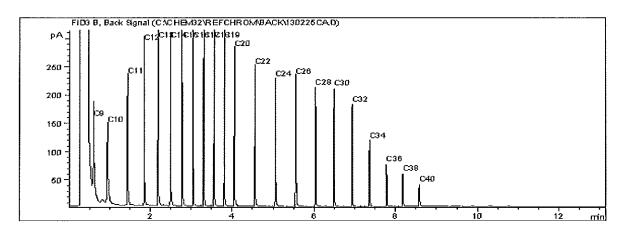
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-37-1.8-2.4

CCME Hydrocarbons (F2-F4 in soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 ~	C12	Diesel:	C8 -	 C22
Varsol:	C8 →	Cl2	Lubricating Oils:	C20	 C40
Kerosene:	€7 ↔	C16	Crude Oils:	C3	 C60+



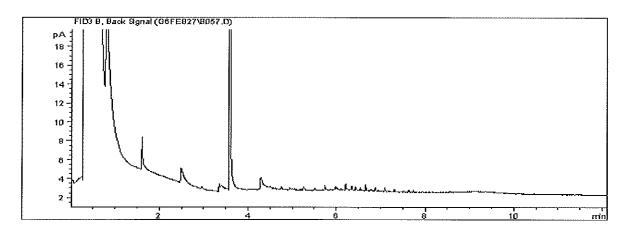
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

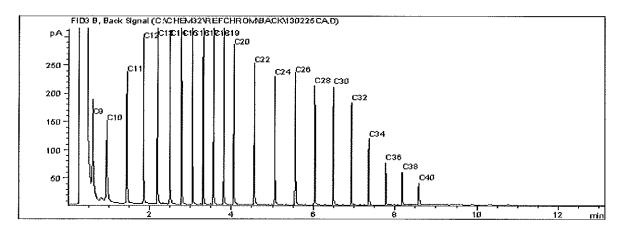
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-37-3.0-3.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		CIS	Diesel:	C8	_	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7	_	C16	Crude Oils:	C3	_	C60+



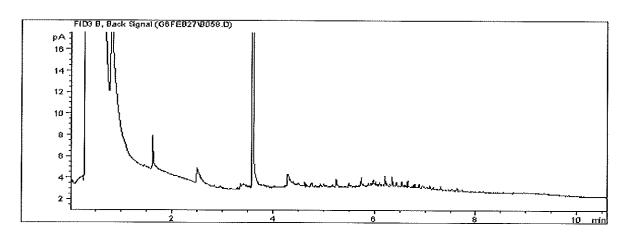
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

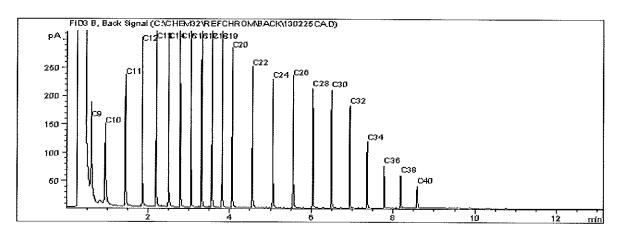
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG.

Client ID: BH-37-4.2-4.8

CCME Hydrocarbons (F2-F4 In soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON MUMBER PANGES

Gasoline:	C4	-	C12	Diesel:	C8	_	C22
Varsol:	C8	-	C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7	-	C16	Crude Oils:	CЗ	-	C60+

DATA QUALITY REVIEW CHECKLIST

Consultant: <u>Parsons</u>				Sampling Date:	2013/02/21
Location: 208 St. Anne's Ro	ad, Winnipeg, λ	<u> 1B</u>		Laboratory:	Maxxam Analytics, Winnipeg
Consultant Project Number: 10-11	77.100			Sample Subr	nission Number: <u>B314377</u>
Are All Laboratory QC Samples Within	Acceptance Cr	iteria (Y	es, No,	Not Applicable)?	
	Yes	No	NA		Comments
Instrument Surrogate Recovery Extraction Surrogate Recovery Method Blank Concentration Matrix Duplicate RPD Matrix Spike Recovery Lab Control Sample Recovery	X X X X		X	All lab QC met accept	ance criteria.
Are All Field QC Samples Within Alert	Limits (Yes, No	o, Not A	applicab	e)?	
	Yes 1	No	NA		Comments
Field Blank Concentration Trip Blank Concentration Field Duplicate RPD			X X X	No field QC were subn	nitted.
Has CoA been signed off (Yes/No)?: Has lab warranted all tests were in statis Has lab warranted all tests were analyze Were all samples analyzed within hold to All volatiles samples methanol extracted Is Chain of Custody completed and sign Were sample temperatures acceptable was	d following SO imes (Yes/No)? d, if required, wed (Yes/No)?:	P's in C ?: ithin 48	oA (Yes	, No or N/A)?: Yes, No or N/A)?:	Yes Yes Yes Yes No Yes Yes
Was a Data Quality Waiver (DQW) issu	ed (Yes, No or	N/A)?:		-	No
Date Issued:			Ι	Date of Response:	
Is data considered to be reliable (Yes/N If answer is "No", describe and provide				Yes	
Data Reviewed by (Print): <u>Alexion</u> Review Date: <u>2013/</u> Revision Date (if applicable):	03/06				d by (Signature): A.R. M.L. d by (Signature):



Your Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003361

Attention: Adam Wickman

O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2013/03/06

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B314774 Received: 2013/02/25, 12:25

Sample Matrix: Soil # Samples Received: 9

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
Volatile F1-BTEX (1)	9	N/A	2013/03/05	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	8	2013/03/01	2013/03/04	BBY8SOP-00030	CCME Soil Tier 1
CCME Hydrocarbons (F2-F4 in soil) (t)	1	2013/03/01	2013/03/05	BBY8SOP-00030	CCME Soil Tier 1
Elements by ICPMS (total) (1)	9	2013/02/27	2013/02/27	BBY7SOP-00001	EPA 6020A
Moisture (1)	9	N/A	2013/02/28	BBY8SOP-00017	Ont MOE -E 3139
pH (2:1 DI Water Extract) (1)	9	2013/02/27	2013/02/27	BBY6SOP-00028	Carter, SSMA 16.2
CCME F1 C6-C10 in Soil by GC/FID (1)	9	2013/02/27	2013/03/04	BBY8SOP-00012	EPA SW8260C
VOCs in Soil by HS GC/MS (1)	9	2013/02/27	2013/03/04	BBY8-SOP-0009	EPA 8260C

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Janelle Kochan
Openille Kodhan
06 Mar 2013 16:17:52 -08:00

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

Janelle Kochan, B.Sc., Project Manager, Email: JKochan@maxxam.ca Phone# (204) 772-7276 Ext;2209

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



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		FS2846	FS2847	FS2848	FS2849		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22	İ	
. •	1 1	10:00	10:15	10:30	11:30		
COC Number		S003361	S003361	S003361	S003361		
	UNITS	BH-40-0.6-1.2	BH-40-2.4-3.0	BH-40-4.8-5.4	BH-41-2.4-3.0	RDL	QC Batch
Calculated Parameters							
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	61	10	6608165
Physical Properties							
Soluble (2:1) pH	pH Units	9.12	9.05	8.27	8.32	0.010	6602790
Physical Properties						0.010	6

Maxxam ID		F\$2850	FS2851	FS2852	FS2853		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
		11:45	12:00	13:00	13:15		
COC Number		S003361	S003361	S003361	S003361		
	UNITS	BH-41-3.0-3.6	BH-41-3.6-4.2	BH-42-0.6-1.2	BH-42-1.8-2.4	RDL	QC Batch
						<u> </u>	
Calculated Parameters							
F1 (C6-C10) - BTEX	mg/kg	59	<10	<10	<10	10	6608165
Physical Properties							
Soluble (2:1) pH p	H Units	8.29	7.98	9.35	8,39	0.010	6602790

Maxxam ID		FS2854		
Sampling Date		2013/02/22		
· -		13:30		
COC Number		\$003361	ļ	
	UNITS	BH-42-3.0-3.6	RDL	QC Batch
Calculated Parameters				
F1 (C6-C10) - BTEX	mg/kg	<10	10	6608165
Physical Properties				
Soluble (2:1) pH	pH Units	7.88	0.010	6602790

N/A

93

6611348



Maxxam Job #: B314774 Report Date: 2013/03/06 O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

88

Sampler Initials: AB

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		FS2846	FS2847	FS2848	FS2849		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
. 0		10:00	10:15	10:30	11:30		
COC Number		S003361	S003361	S003361	S003361		
	UNITS	BH-40-0.6-1.2	BH-40-2.4-3.0	BH-40-4.8-5.4	BH-41-2.4-3.0	RDL	QC Batch
Ext. Pet. Hydrocarbon							
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	44	10	6611348
F3 (C16-C34 Hydrocarbons)	mg/kg	68	170	13	39	10	6611348
F4 (C34-C50 Hydrocarbons)	mg/kg	42	130	<10	12	10	6611348
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	6611348

N/A = Not Applicable

O-TERPHENYL (sur.)

Surrogate Recovery (%)

RDL = Reportable Detection Limit

%

96

OOO Number	UNITS	BH-41-3.0-3.6	BH-41-3.6-4.2	BH-42-0.6-1.2	BH-42-1.8-2.4	RDL	QC Batch
COC Number		S003361	S003361	S003361	S003361		
l ' "		11:45	12:00	13:00	13:15	1	
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
Maxxam ID		F\$2850	FS2851	FS2852	FS2853		

88

Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	40	<10	<10	<10	10	6611348
F3 (C16-C34 Hydrocarbons)	mg/kg	15	50	<10	31	10	6611348
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	23	<10	<10	10	6611348
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	6611348
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	76	94	97	92	N/A	6611348

N/A = Not Applicable

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		FS2854		
Sampling Date		2013/02/22		
, 0		13:30		
COC Number		S003361		
	UNITS	BH-42-3.0-3.6	RDL	QC Batch

Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	10	6611348
F3 (C16-C34 Hydrocarbons)	mg/kg	45	10	6611348
F4 (C34-C50 Hydrocarbons)	mg/kg	10	10	6611348
Reached Baseline at C50	mg/kg	Yes	N/A	6611348
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	87	N/A	6611348

N/A = Not Applicable

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PHYSICAL TESTING (SOIL)

Maxxam ID		F\$2846	FS2847	FS2848		FS2849		
Sampling Date		2013/02/22	2013/02/22	2013/02/22		2013/02/22		
		10:00	10:15	10:30		11:30		
COC Number		\$003361	S003361	S003361		S003361	_L	
			DIL 40 2 4 2 0	BH-40-4.8-5.4	QC Batch	BH-41-2,4-3.0	וחאו	QC Batch
	UNITS	BH-40-0.6-1.2	BH-40-2.4-3.0	ВП-40-4.0-5.4	QC Batti	DI[-4]-2,4-0.0	IKDE	NO Daton
Physical Properties	UNITS	BH-40-0,6-1.2	BH-40-2.4-3.0	БП-40-4.0-5.4	QC Batti	D[[+4]+2,4-0.0	INDL	NO DUTON

Maxxam ID		FS2850		FS2851	FS2851		FS2852		
Sampling Date		2013/02/22		2013/02/22	2013/02/22		2013/02/22	ı	
		11:45		12:00	12:00		13:00		
COC Number		S003361		S003361	S003361		S003361		
000,100.	UNITS	BH-41-3.0-3.6	QC Batch	BH-41-3.6-4.2	BH-41-3.6-4.2	QC Batch	BH-42-0.6-1.2	RDL	QC Batch
			1		Lab-Dup				
Physical Properties					Lab-Dup				

Maxxam ID		FS2853	FS2854		
Sampling Date		2013/02/22	2013/02/22		
· -		13:15	13:30		
COC Number		S003361	S003361		<u> </u>
		mil 10 1 0 0 1	B11 40 0 0 0	DDI	MC Batal
	UNITS	BH-42-1.8-2.4	BH-42-3.0-3.6	KUL	NC Battr
Physical Properties	UNITS	BH-42-1.8-2.4	BH-42-3.0-3.6	KUL	QC Batch
Physical Properties Moisture	W WITS	31	33	0,30	6602185



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FS2846	FS2847	FS2848	FS2849		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
		10:00	10:15	10:30	11:30		
COC Number		S003361 ·	S003361	S003361	S003361		
	UNITS	BH-40-0.6-1.2	BH-40-2.4-3.0	BH-40-4.8-5.4	BH-41-2.4-3.0	RDL	QC Batch
	011110			•		_	
Total Metals by ICPMS							

Maxxam ID		FS2850	FS2851	FS2852	FS2853		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
		11:45	12:00	13:00	13:15		
COC Number		S003361	S003361	S003361	S003361		
	UNITS	BH-41-3.0-3.6	BH-41-3.6-4.2	BH-42-0.6-1.2	BH-42-1.8-2.4	RDL	QC Batch
Total Metals by ICPMS	Ī						

Maxxam ID		FS2854		
Sampling Date		2013/02/22		
		13:30		
COC Number		S003361		
	UNITS	BH-42-3.0-3.6	RDL	QC Batch
Total Metals by ICPMS Total Lead (Pb)	mg/kg	16.0	0.10	6602773



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FS2846	FS2847	FS2848	FS2849		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
		10:00	10:15	10:30	11:30		
COC Number		S003361	S003361	S003361	5003361		
	UNITS	BH-40-0.6-1.2	BH-40-2.4-3.0	BH-40-4.8-5.4	BH-41-2.4-3.0	RDL	QC Batch
Volatile Hydrocarbons							
(C6-C10)	mg/kg	<10	<10	<10	65	10	6616058
Volatiles							
1,2-dichloroethane	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	6615651
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	1.5	0.0050	6615651
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	6615651
Toluene	mg/kg	<0.020	<0.020	<0.020	0.034	0.020	6615651
1,2-dibromoethane	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	6615651
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	1.2	0.010	6615651
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	0.66	0.040	6615651
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	6615651
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	0,66	0.040	6615651

Maxxam ID		FS2850	FS2851	FS2852	FS2853	l	
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
		11:45	12:00	13:00	13:15		
COC Number		S003361	S003361	S003361	S003361		
	UNITS	BH-41-3.0-3.6	BH-41-3.6-4.2	BH-42-0.6-1.2	BH-42-1.8-2.4	RDL	QC Batch
			T		ľ	T	1
Volatile Hydrocarbons						<u> </u>	
(C6-C10)	mg/kg	62	<10	<10	<10	10	6616058
Volatiles							
1,2-dichloroethane	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	6615651
Benzene	mg/kg	1.5	0.014	<0.0050	<0.0050	0.0050	6615651
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	6615651
Toluene	mg/kg	0.033	<0.020	<0.020	<0.020	0.020	6615651
1,2-dibromoethane	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	6615651
Ethylbenzene	mg/kg	1.2	0.020	<0.010	<0.010	0.010	6615651
m & p-Xylene	mg/kg	0,65	<0.040	<0.040	<0.040	0.040	6615651
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	6615651
Xylenes (Total)	mg/kg	0.65	<0.040	<0.040	<0.040	0.040	6615651



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FS2854		
Sampling Date		2013/02/22		
		13:30		
COC Number		S003361		
	UNITS	BH-42-3.0-3.6	RDL	QC Batch

Volatile Hydrocarbons				
(C6-C10)	mg/kg	<10	10	6616058
Volatiles				
1,2-dichloroethane	mg/kg	<0.025	0.025	6615651
Benzene	mg/kg	<0.0050	0.0050	6615651
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	0.10	6615651
Toluene	mg/kg	<0.020	0.020	6615651
1,2-dibromoethane	mg/kg	<0.025	0.025	6615651
Ethylbenzene	mg/kg	<0.010	0.010	6615651
m & p-Xylene	mg/kg	<0.040	0.040	6615651
o-Xylene	mg/kg	<0.040	0.040	6615651
Xylenes (Total)	mg/kg	<0.040	0.040	6615651

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

Package 1	9.2°C

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

General Comments

Results relate only to the items tested.



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB314774

QA/QC			Date				
Batch			Analyzed	Value	Decement	UNITS	QC Limit
	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	%	QO LIIIII
	Method Blank	Moisture	2013/02/28	<0.30			2
	RPD	Moisture	2013/02/28	1.4	407	%	
	Matrix Spike	Total Lead (Pb)	2013/02/27		107	%	75 - 12
	QC Standard	Total Lead (Pb)	2013/02/27		102	%	70 - 13
	Spiked Blank	Total Lead (Pb)	2013/02/27		108	%	75 - 12
	Method Blank	Total Lead (Pb)	2013/02/27	<0.10		mg/kg	
602790 NS6	Spiked Blank	Soluble (2:1) pH	2013/02/27		102	%	96 - 10
	RPD	Soluble (2:1) pH	2013/02/27	0.1		%	2
604038 LO1	Method Blank	Moisture	2013/02/28	<0.30		%	
	RPD [FS2851-01]	Molsture	2013/02/28	2.8		%	2
	Matrix Spike	O-TERPHENYL (sur.)	2013/03/04		99	%	50 - 13
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		F2 (C10-C16 Hydrocarbons)	2013/03/04		102	%	50 - 13
		F3 (C16-C34 Hydrocarbons)	2013/03/04		90	%	50 - 13
		F4 (C34-C50 Hydrocarbons)	2013/03/04		81	%	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/04		103	%	50 - 13
	opiked Dialik	F2 (C10-C16 Hydrocarbons)	2013/03/04		102	%	80 - 12
		F3 (C16-C34 Hydrocarbons)	2013/03/04		90	%	80 - 12
		F4 (C34-C50 Hydrocarbons)	2013/03/04		81	%	80 - 12
	Adada and Diamie		2013/03/04		113	%	50 - 13
	Method Blank	O-TERPHENYL (sur.)	2013/03/04	<10	110	mg/kg	00 10
		F2 (C10-C16 Hydrocarbons)	2013/03/04	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)				mg/kg	
		F4 (C34-C50 Hydrocarbons)	2013/03/04	<10			
		Reached Baseline at C50	2013/03/04	YES		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2013/03/04	8.3		%	
		F3 (C16-C34 Hydrocarbons)	2013/03/04	NC		%	
		F4 (C34-C50 Hydrocarbons)	2013/03/04	NC		%	
		Reached Baseline at C50	2013/03/04	NC		%	
615651 MM5	Matrix Spike	1,2-dichloroethane	2013/03/04		82	%	60 - 14
		Benzene	2013/03/04		61	%	60 - 14
		Toluene	2013/03/04		84	%	60 - 14
		1,2-dibromoethane	2013/03/04		92	%	60 - 14
		Ethylbenzene	2013/03/04		NC	%	60 - 14
		m & p-Xylene	2013/03/04		NC	%	60 - 1
		o-Xylene	2013/03/04		NC	%	60 - 1
	Spiked Blank	1,2-dichloroethane	2013/03/04		85	%	60 - 14
	Opinoo Biann	Benzene	2013/03/04		81	%	60 - 1
		Toluene	2013/03/04		79	%	60 - 1
		1,2-dibromoethane	2013/03/04		85	%	60 - 1
		Ethylbenzene	2013/03/04		86	%	60 - 1
		m & p-Xylene	2013/03/04		95	%	60 - 1
			2013/03/04		89	%	60 - 1
		o-Xylene	2013/03/04	<0.025	00	mg/kg	
•	Method Blank	1,2-dichloroethane		<0.0050			
		Benzene	2013/03/04			mg/kg	
		Methyl-tert-butylether (MTBE)	2013/03/04	<0.10		mg/kg	
		Toluene	2013/03/04	<0.020		mg/kg	
		1,2-dibromoethane	2013/03/04	< 0.025		mg/kg	
		Ethylbenzene	2013/03/04	<0.010		mg/kg	
		m & p-Xylene	2013/03/04	<0.040		mg/kg	
		o-Xylene	2013/03/04	<0.040		mg/kg	
		Xylenes (Total)	2013/03/04	<0.040		mg/kg	
	RPD	1,2-dichloroethane	2013/03/04	NC		%	
		1,2-dibromoethane	2013/03/04	NC		%	
6616058 MM5	Spiked Blank	(C6-C10)	2013/03/04		79	%	60 - 1
	Method Blank	(C6-C10)	2013/03/04	<10		mg/kg	
	RPD	(C6-C10)	2013/03/04	29.0		%	



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB314774

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.



Validation Signature Page

Maxxam Job #: B314774	
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).	
Rob Reinert, Data Validation Coordinator	

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

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Maxxam Analytics International Corporation o/a Maxxam Analytics, Unit D - 675 Berry Street, Winnipeg, MB, R3H 1A7, Tel: (204) 772-7276, Fax: (204) 772-2386 www.maxxam.ca



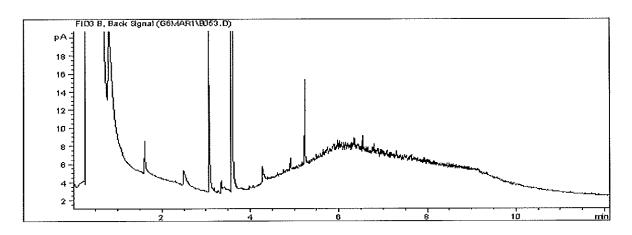
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

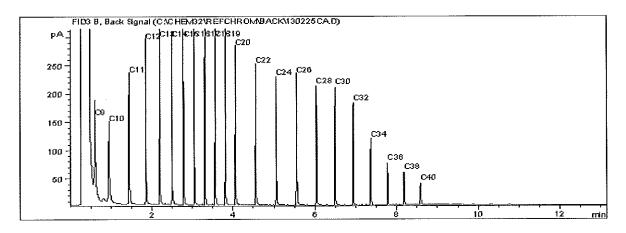
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-40-0.6-1.2

CCME Hydrocarbons (F2-F4 in soll) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8	-	C22
Varsol:	C8		C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7		C16	Crude Oils:	C3	_	C60+



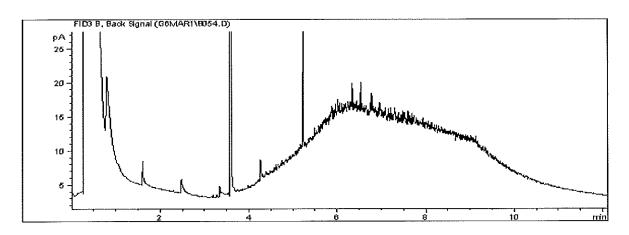
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

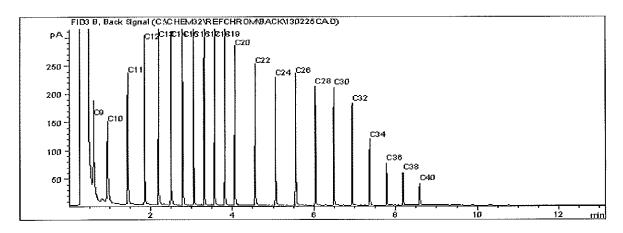
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-40-2.4-3.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	ClS	Diesel:	C8	_	C22
Varsol:	C8	_	Cl2	Lubricating Oils:	C20	_	C40
Kerosene:	C7	-	C16	Crude Oils:	C3	_	C60+



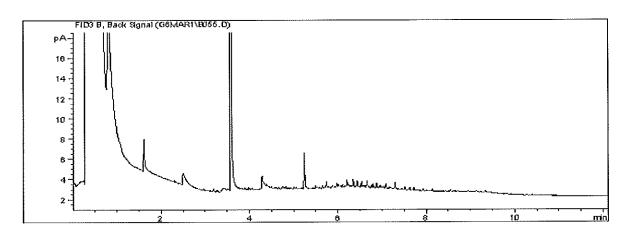
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

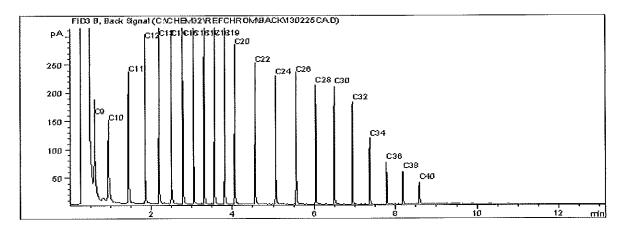
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-40-4.8-5.4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C8	-	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7	_	C16	Crude Oils:	C3	-	C604



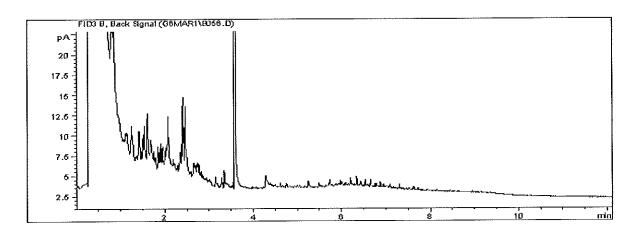
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

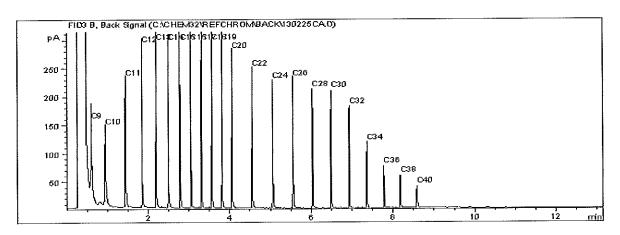
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-41-2.4-3.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	C12	Diesel:	C8	 C22
Varsol:	C8 -	C12	Lubricating Oils:	C20	 C40
Kerosene:	C7 -	C1.6	Crude Oils:	CЗ	 C60+



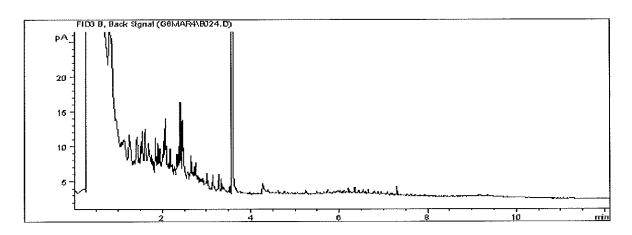
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

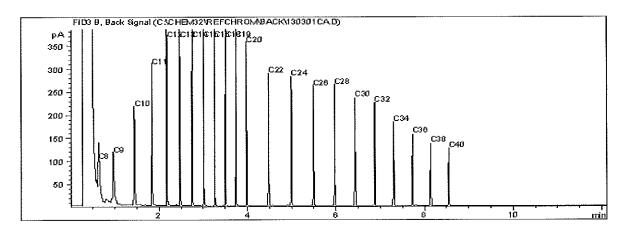
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-41-3.0-3.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	-	C22
Varsol:	C8	- C12	Lubricating Oils:	C20		C40
Kerosene:	C7	- C16	Crude Oils:	СЗ		C60+



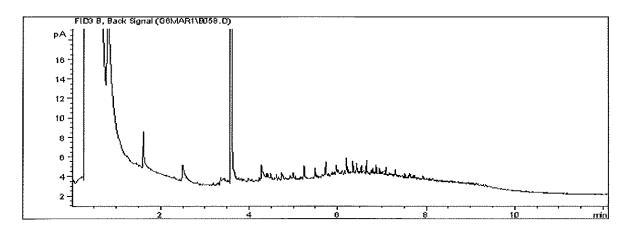
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

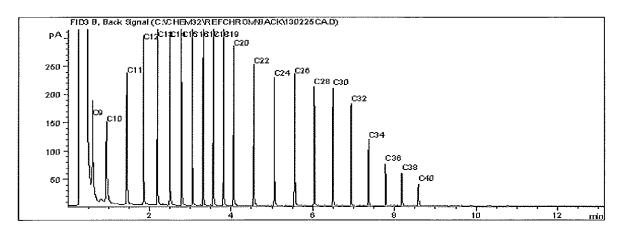
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-41-3.6-4.2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8	_	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7	_	C16	Crude Oils:	СЗ	_	C60+



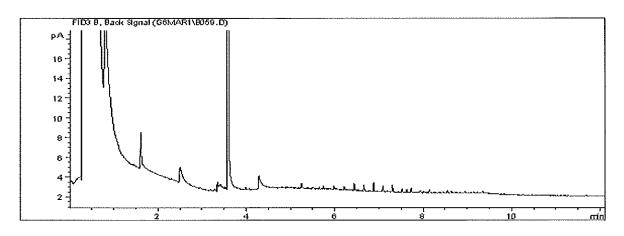
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

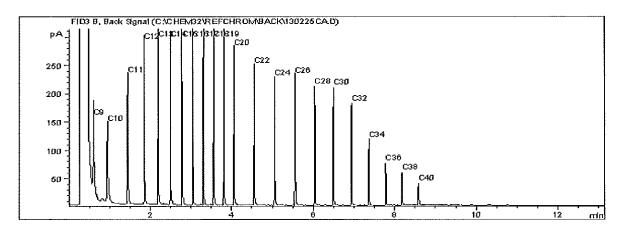
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-42-0.6-1.2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	- C12	Diesel:	C8	_	C22
Varsol:	C8 -	- C12	Lubricating Oils:	C20		C40
Kerosene:	C7 -	- C16	Crude Oils:	CЗ		C60+



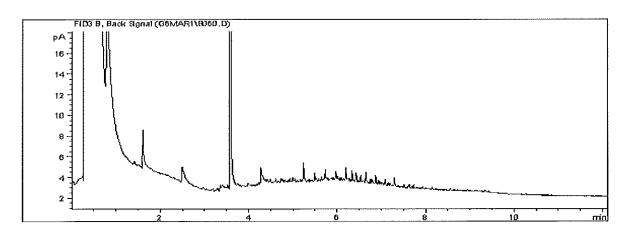
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

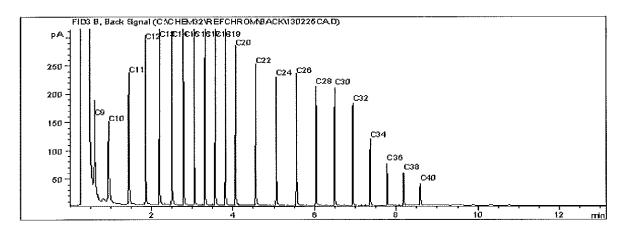
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-42-1.8-2.4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	- C12	Diesel:	C8	-	C22
Varsol:	C8 -	- 012	Lubricating Oils:	C20	_	C40
Kerosene:	C7 -	- 016	Crude Oils:	CЗ	_	C60+



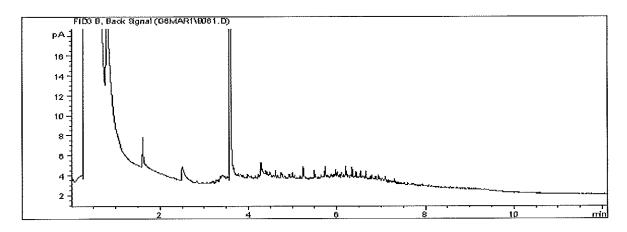
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

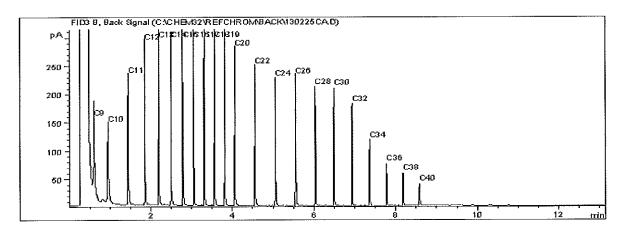
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-42-3.0-3.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 -	C22
Varsol:	C8 - C12	Lubricating Oils:	C20 -	C40
Kerosene:	C7 - C16	Crude Oils:	C3 ~	C60+

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons		-		Sampling Date: 2	2013/02/22
Location: 208 St. Anne's	Road, Winnip	eg, MB		Laboratory : 1	Maxxam Analytics, Winnipeg
Consultant Project Number: 10	-1177.100			Sample Subm	nission Number: <u>B314774</u>
Are All Laboratory QC Samples With	hin Acceptanc	e Criteria ((Yes, No,	Not Applicable)?	
	Yes	No	NA		Comments
Instrument Surrogate Recovery Extraction Surrogate Recovery Method Blank Concentration Matrix Duplicate RPD Matrix Spike Recovery Lab Control Sample Recovery	X X X X X		X	All lab QC met accepte	
Are All Field QC Samples Within Al	ert Limits (Ye	es, No, Not	Applicab	le)?	
	Yes	No	NA		Comments
Field Blank Concentration Trip Blank Concentration Field Duplicate RPD			X X X	No field QC were subn	nitted.
Has CoA been signed off (Yes/No)? Has lab warranted all tests were in st Has lab warranted all tests were anal Were all samples analyzed within ho All volatiles samples methanol extra Is Chain of Custody completed and s Were sample temperatures acceptable	atistical contro yzed following ld times (Yes/ cted, if require signed (Yes/No	g SOP's in 'No)?: ed, within 4 o)?:	CoA (Yes	s, No or N/A)?: Yes, No or N/A)?:	Yes Yes Yes Yes N/A Yes Yes
Was a Data Quality Waiver (DQW)	issued (Yes, N	lo or N/A)'			No
Date Issued:			•	Date of Response:	
Is data considered to be reliable (Yes		9		Yes	
Data Reviewed by (Print): <u>Al</u> Review Date: <u>20</u> Revision Date (if applicable):	013/03/08		• •	Data Reviewe Revise	ed by (Signature):



Your Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003359

Attention: Adam Wickman

O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2013/03/06

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B314801 Received: 2013/02/25, 12:25

Sample Matrix: Soil # Samples Received: 11

		Date	Date		
Analyses	Quantity	Extracted	Analyzed La	aboratory Method	Analytical Method
Volatile F1-BTEX (1)	10	N/A	2013/03/05 BI	BY WI-00033	BC MOE Lab Method
Volatile F1-BTEX (1)	1	N/A	2013/03/06 Bi	BY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	10	2013/03/01	2013/03/04 Bi	BY8SOP-00030	CCME Soll Tier 1
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2013/03/01	2013/03/05 BI	BY8SOP-00030	CCME Soil Tier 1
Elements by ICPMS (total) (1)	4	2013/02/28	2013/02/28 BI	BY7SOP-00001	EPA 6020A
Elements by ICPMS (total) (1)	7	2013/03/01	2013/03/01 BI	BY7SOP-00001	EPA 6020A
Moisture (1)	11	N/A	2013/02/28 BI	BY8SOP-00017	Ont MOE -E 3139
pH (2;1 DI Water Extract) (1)	4	2013/02/28	2013/02/28 BI	BY6SOP-00028	Carter, SSMA 16.2
pH (2:1 DI Water Extract) (t)	7	2013/03/01	2013/03/01 BI	BY6SOP-00028	Carter, SSMA 16.2
CCME F1 C6-C10 in Soil by GC/FID (1)	6	2013/02/27	2013/03/04 B	BY8SOP-00012	EPA SW8260C
CCME F1 C6-C10 in Soil by GC/FID (1)	4	2013/02/27	2013/03/05 B	BY8SOP-00012	EPA SW8260C
CCME F1 C6-C10 in Soil by GC/FID (1)	1	2013/02/27	2013/03/06 B	BY8SOP-00012	EPA SW8260C
VOCs in Soil by HS GC/MS (1)	6	2013/02/27	2013/03/04 B	BY8-SOP-0009	EPA 8260C
VOCs in Soil by HS GC/MS (1)	4	2013/02/27	2013/03/05 B	BY8-SOP-0009	EPA 8260C
VOCs in Soil by HS GC/MS (1)	1	2013/02/27	2013/03/06 B	BY8-SOP-0009	EPA 8260C

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Janelle Kochan
(Vanille Kochan 06 Mar 2013 18:00:13 -08:00

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

Janelle Kochan, B.Sc., Project Manager, Emall: JKochan@maxxam.ca Phone# (204) 772-7276 Ext:2209

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



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		FS2967	FS2968	FS2969	FS2970		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
		14:30	14:45	14:45	15:00		
COC Number		S003359	S003359	S003359	S003359		
	UNITS	BH-43-0.0-0.6	BH-43-1.8-2.4	DUP-43	BH-43-2.4-3.0	RDL	QC Batch
Calculated Parameters							
F1 (C6-C10) - BTEX	mg/kg	54	840	550	140	10	6608165
Physical Properties							
Soluble (2:1) pH	pH Units	8.51	8.39	8.59	8,33	0.010	6606556

Maxxam ID		FS2971	FS2972		FS2973		FS2974		
Sampling Date		2013/02/22	2013/02/22		2013/02/22		2013/02/22		
, -		15:15	16:15		16:30		16:45		
COC Number		S003359	S003359		S003359		S003359		
	UNITS	BH-43-3.0-3.6	BH-44-0.0-0.6	RDL	BH-44-1.2-1.8	RDL	BH-44-1.8-2.4	RDL	QC Batch
Calculated Parameters									
F1 (C6-C10) - BTEX	mg/kg	<10	160	10	1500	50	550	10	6608165
Physical Properties									
Soluble (2:1) pH	pH Units	7.92	8.06	0.010	8.43	0.010	8.76	0.010	6610533

Maxxam ID		FS2975	FS2976		FS2977	FS2977		
Sampling Date	<u> </u>	2013/02/22	2013/02/22		2013/02/22	2013/02/22		
		16:45	17:00		17:15	17:15		
COC Number		S003359	S003359		S003359	S003359		
	UNITS	DUP-44	BH-44-2.4-3.0	QC Batch	BH-44-3.0-3.6	BH-44-3.0-3.6 Lab-Dup	RDL	QC Batch
Calculated Parameters								
	mg/kg	460	250	6608165	<10	N/A	10	6608165
Physical Properties								
Soluble (2:1) pH	H Units	8.75	8.70	6610533	7.99	7.84	0.010	6610517



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PETROLEUM HYDROCARBONS (CCME)

	UNITS	BH-43-0.0-0.6	BH-43-1.8-2.4	DUP-43	BH-43-2.4-3.0	RDL	QC Batch
COC Number		S003359	S003359	\$003359	S003359		
		14:30	14:45	14:45	15:00		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
Maxxam ID		FS2967	FS2968	FS2969	FS2970		

Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	200	260	82	64	10	6611348
F3 (C16-C34 Hydrocarbons)	mg/kg	350	17	24	13	10	6611348
F4 (C34-C50 Hydrocarbons)	mg/kg	270	<10	<10	<10	10	6611348
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	6611348
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	93	97	93	89	N/A	6611348

N/A = Not Applicable

RDL = Reportable Detection Limit

Maxxam ID		FS2971		FS2972	FS2973	FS2974		
Sampling Date		2013/02/22		2013/02/22	2013/02/22	2013/02/22		
		15:15		16:15	16:30	16:45		
COC Number		S003359		S003359	S003359	S003359		
	UNITS	BH-43-3.0-3.6	QC Batch	BH-44-0.0-0.6	BH-44-1.2-1.8	BH-44-1.8-2.4	RDL	QC Batch

Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	6611348	110	520	130	10	6610325
F3 (C16-C34 Hydrocarbons)	mg/kg	33	6611348	170	<10	<10	10	6610325
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	6611348	64	<10	<10	10	6610325
Reached Baseline at C50	mg/kg	Yes	6611348	Yes	Yes	Yes	N/A	6610325
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	82	6611348	91	91	108	N/A	6610325

N/A = Not Applicable

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	· · · · · · · · · · · · · · · · · · ·	FS2975		F\$2976	FS2976	FS2977		
Sampling Date		2013/02/22		2013/02/22	2013/02/22	2013/02/22		
		16:45		17:00	17:00	17:15		
COC Number		S003359		S003359	S003359	S003359	_[
	UNITS	DUP-44	QC Batch	BH-44-2.4-3.0	BH-44-2.4-3.0 Lab-Dup	BH-44-3.0-3.6	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	170	6610325	84	77	<10	10	6611348
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	6610325	<10	<10	18	10	6611348
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	6610325	<10	<10	10	10	6611348
Reached Baseline at C50	mg/kg	Yes	6610325	Yes	Yes	Yes	N/A	6611348
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	99	6610325	99	100	91	N/A	6611348

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PHYSICAL TESTING (SOIL)

Maxxam ID		FS2967	FS2968	FS2969	FS2969	FS2970		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22	2013/02/22		
		14:30	14:45	14:45	14:45	15:00		
COC Number		S003359	S003359	S003359	S003359	S003359		
	UNITS	BH-43-0.0-0.6	BH-43-1.8-2.4	DUP-43	DUP-43 Lab-Dup	BH-43-2.4-3.0	RDL	QC Batch
Physical Properties								
Dhysical Properties								
Moisture	%	18	26	29	28	31	0.30	6602185

Maxxam ID		FS2971	FS2972	FS2973	FS2974	FS2975		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22	2013/02/22	1	
		15:15	16:15	16:30	16:45	16:45		
COC Number		S003359	\$003359	S003359	\$003359	\$003359		
	UNITS	BH-43-3.0-3.6	BH-44-0.0-0.6	BH-44-1.2-1.8	BH-44-1.8-2.4	DUP-44	RDL	QC Batch
	UNITS	DI1-40-0.0-0.0	DI1-44-0.0-0.0	D(1-44-198-10	DITTT NO AIX			AC BUILD
Physical Properties	1	BH-40-0.0-0.0	DI1-44-0:0-0:0	DI) 77 112 1.0	B)(14 .10 <u>2</u>).			

	UNITS	BH-44-2.4-3.0	BH-44-3.0-3.6	RDL	QC Batch
COC Number		\$003359	\$003359		
		17:00	17:15		
Sampling Date		2013/02/22	2013/02/22		
Maxxam ID		FS2976	FS2977		

LLIA SICAL LIONELLI	75				
Moisture	%	17	33	0.30	6602185
RDL = Reportable	Detection Limit				



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		F\$2967	FS2968	FS2969	FS2970		1
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
. •		14:30	14:45	14:45	15:00		
COC Number		\$003359	S003359	S003359	S003359		
	UNITS	BH-43-0.0-0.6	BH-43-1.8-2.4	DUP-43	BH-43-2.4-3.0	RDL	QC Batch
	10						
Total Metals by ICPMS							

Maxxam ID		FS2971	FS2972	F\$2973	FS2974		
Sampling Date		2013/02/22	2013/02/22	2013/02/22	2013/02/22		
		15:15	16:15	16:30	16:45		
COC Number		S003359	S003359	S003359	S003359		
	UNITS	BH-43-3.0-3.6	BH-44-0.0-0.6	BH-44-1.2-1.8	BH-44-1.8-2.4	RDL	QC Batch
			1				
T-4-1 Marketin lass (ODMIC	1 1		l	B .	t		l .
Total Metals by ICPMS							ļ

Maxxam ID		FS2975	FS2976		FS2977	FS2977		
Sampling Date		2013/02/22	2013/02/22		2013/02/22	2013/02/22		
		16:45	17:00		17:15	17:15		
COC Number		S003359	S003359·		S003359	S003359		
	UNITS	DUP-44	BH-44-2.4-3.0	QC Batch	BH-44-3.0-3.6	BH-44-3.0-3.6	RDL	QC Batch
			į.	1		Lab-Dup		1
						Eab-Dup		
						Lab-Dup		
Total Metals by ICPMS						Lab-bup		



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID	·	FS2967	FS2968	FS2969		FS2970		
Sampling Date		2013/02/22	2013/02/22	2013/02/22		2013/02/22		
•		14:30	14:45	14:45		15:00		
COC Number		S003359	S003359	S003359		\$003359		
	UNITS	BH-43-0.0-0.6	BH-43-1.8-2.4	DUP-43	RDL	BH-43-2.4-3.0	RDL	QC Batch
Volatile Hydrocarbons								
(C6-C10)	mg/kg	57	940	680	10	160	10	6616058
Volatiles								
1,2-dichloroethane	mg/kg	<0.025	<0.025	<0.025	0.025	<0.025	0.025	6615651
Benzene	mg/kg	0.29	0.97	2.5	0.0050	1.5	0.0050	6615651
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	0.10	<0.10	0.10	6615651
Toluene	mg/kg	0.076	2.2	4.9	0.020	<0.029 (1)	0.029	6615651
1,2-dibromoethane	mg/kg	<0.025	<0.025	<0.025	0.025	<0.025	0.025	6615651
Ethylbenzene	mg/kg	0.85	20	22	0.010	6.1	0.010	6615651
m & p-Xylene	mg/kg	1.4	61	78	0.040	7.4	0.040	6615651
o-Xylene	mg/kg	0.59	16	25	0.040	0.040	0.040	6615651
Xylenes (Total)	mg/kg	2.0	77	100	0.040	7.4	0.040	6615651

RDL = Reportable Detection Limit

⁽¹⁾ RDL raised due to sample matrix interference.

Maxxam ID		FS2971	FS2972	FS2972		FS2973		
Sampling Date		2013/02/22	2013/02/22	2013/02/22		2013/02/22		
. •		15:15	16:15	16:15		16:30		
COC Number		S003359	S003359	S003359		S003359		
	UNITS	BH-43-3.0-3.6	BH-44-0.0-0.6	BH-44-0.0-0.6	RDL	BH-44-1.2-1.8	RDL	QC Batch
				Lab-Dup				<u></u>
Volatile Hydrocarbons								
(C6-C10)	mg/kg	<10	220	300	10	1700 (1)	50	6616058
Volatiles								
1,2-dichloroethane	mg/kg	<0.025	<0.025	<0.025	0.025	<0.025	0.025	6615651
Benzene	mg/kg	<0.0050	1.6	N/A	0.0050	3.1 (1)	0.025	6615651
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	N/A	0.10	<0.50 (1)	0.50	6615651
Toluene	mg/kg	<0.020	0.59	N/A	0.020	19 (1)	0.10	6615651
1,2-dibromoethane	mg/kg	<0.025	<0.025	<0.025	0.025	<0.025	0.025	6615651
Ethylbenzene	mg/kg	0.032	5.9	N/A	0.010	17 (1)	0.050	6615651
m & p-Xylene	mg/kg	0.059	32	N/A	0.040	87 (1)	0.20	6615651
o-Xylene	mg/kg	<0.040	16	N/A	0.040	69 (1)	0.20	6615651

N/A = Not Applicable

RDL = Reportable Detection Limit

⁽¹⁾ RDL raised due to sample dilution.



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID	1	FS2971	FS2972	FS2972		FS2973		
Sampling Date		2013/02/22	2013/02/22	2013/02/22		2013/02/22		
		15:15	16:15	16:15		16:30		
COC Number		S003359	S003359	S003359		S003359		
	UNITS	BH-43-3.0-3.6	BH-44-0.0-0.6	BH-44-0.0-0.6 Lab-Dup	RDL	BH-44-1.2-1.8	RDL	QC Batch
Xylenes (Total)	mg/kg	0.059	49	l N/A	0.040	160	0.20	6615651

Maxxam ID		FS2974	FS2975	FS2976		FS2977		
Sampling Date		2013/02/22	2013/02/22	2013/02/22		2013/02/22		
, 5		16:45	16:45	17:00		17:15		<u> </u>
COC Number		S003359	S003359	S003359		S003359		
	UNITS	BH-44-1.8-2.4	DUP-44	BH-44-2.4-3.0	RDL	BH-44-3.0-3.6	RDL	QC Batch
Volatile Hydrocarbons				1				
(C6-C10)	mg/kg	710	590	280	10	<10	10	6617587
Volatiles								
1,2-dichloroethane	mg/kg	<0.025	<0.025	<0.025	0.025	<0.025	0.025	6615668
Benzene	mg/kg	6.5	5.3	1.1	0.0050	<0.017 (1)	0.017	6615668
M. O. I. L. L. L. L. L. L. L. L. L. L. L. L. L.		-0.40	<0.10	<0.10	0.40	<0.10	0.40	6615668

Volatiles								
1,2-dichloroethane	mg/kg	<0.025	<0.025	<0.025	0.025	<0.025	0.025	6615668
Benzene	mg/kg	6.5	5.3	1.1	0.0050	<0.017 (1)	0.017	6615668
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	0.10	<0.10	0.10	6615668
Toluene	mg/kg	28	20	1.1	0.020	0.043	0.020	6615668
1,2-dibromoethane	mg/kg	<0.025	<0.025	<0.025	0.025	<0.025	0.025	6615668
Ethylbenzene	mg/kg	19	15	8.4	0.010	0,041	0.010	6615668
m & p-Xylene	mg/kg	66	52	18	0.040	0.094	0.040	6615668
o-Xylene	mg/kg	40	30	5.0	0.040	0.054	0.040	6615668
Xylenes (Total)	mg/kg	110	81	23	0.040	0.15	0.040	6615668

RDL = Reportable Detection Limit

⁽¹⁾ RDL raised due to sample matrix interference.



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177.100 Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

Package 1 9.2°C

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

General Comments

Results relate only to the items tested.



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB314801

QA/QC			Date				
Batch	007	B	Analyzed	14-1	D-+	UNITO	0015-4
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6602185 LO1	Method Blank	Moisture	2013/02/28	<0.30		%	0.0
	RPD [FS2969-01]	Moisture	2013/02/28	1.4		%	20
6606514 DJ	Matrix Spike	Total Lead (Pb)	2013/02/28		99	%	75 - 128
	QC Standard	Total Lead (Pb)	2013/02/28		98	%	70 - 130
	Spiked Blank	Total Lead (Pb)	2013/02/28		103	%	75 - 128
	Method Blank	Total Lead (Pb)	2013/02/28	<0.10		mg/kg	
6606556 NS6	Spiked Blank	Soluble (2:1) pH	2013/02/28		102	%	96 - 104
	RPD	Soluble (2:1) pH	2013/02/28	0.1		%	20
6610325 TL2	Matrix Spike	O-TERPHENYL (sur.)	2013/03/01		97	%	50 - 130
	,	F2 (C10-C16 Hydrocarbons)	2013/03/01		96	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2013/03/01		79	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2013/03/01		79	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/01		82	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2013/03/01		102	%	80 - 120
		F3 (C16-C34 Hydrocarbons)	2013/03/01		83	%	80 - 120
		F4 (C34-C50 Hydrocarbons)	2013/03/01		84	%	80 - 12
	Method Blank	O-TERPHENYL (sur.)	2013/03/01		93	%	50 - 13
	Menion Dialik	F2 (C10-C16 Hydrocarbons)	2013/03/01	<10	55	mg/kg	00 10
				<10			
		F3 (C16-C34 Hydrocarbons)	2013/03/01 2013/03/01	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)				mg/kg	
		Reached Baseline at C50	2013/03/01	YES		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2013/03/01	NC		%	4
		F3 (C16-C34 Hydrocarbons)	2013/03/01	NC		%	4
		F4 (C34-C50 Hydrocarbons)	2013/03/01	NC		%	4
		Reached Baseline at C50	2013/03/01	NC		%	5
6610501 DJ	Matrix Spike						
	[FS2977-02]	Total Lead (Pb)	2013/03/01		103	%	75 - 12
	QC Standard	Total Lead (Pb)	2013/03/01		96	%	70 - 13
	Spiked Blank	Total Lead (Pb)	2013/03/01		105	%	75 - 12
	Method Blank	Total Lead (Pb)	2013/03/01	<0.10		mg/kg	
	RPD [FS2977-02]	Total Lead (Pb)	2013/03/01	1.9		%	3
6610517 NS6	Spiked Blank	Soluble (2:1) pH	2013/03/01		102	%	96 - 10
0010011 1100	RPD [FS2977-02]	Soluble (2:1) pH	2013/03/01	1.9		%	2
6610528 DJ	Matrix Spike	Total Lead (Pb)	2013/03/01		104	%	75 - 12
0010020 00	QC Standard	Total Lead (Pb)	2013/03/01		98	%	70 - 13
	Spiked Blank	Total Lead (Pb)	2013/03/01		101	%	75 - 12
	•		2013/03/01	0.10	{DL=0.10		10-12
	Method Blank	Total Lead (Pb)			(D2-0.10	mg/kg	3
00/0500 1100	RPD	Total Lead (Pb)	2013/03/01	0.7	404	%	96 - 10
6610533 NS6	Spiked Blank	Soluble (2:1) pH	2013/03/01	0.0	101	%	
	RPD	Soluble (2:1) pH	2013/03/01	0.9		%	2
6611348 PN2	Matrix Spike						70 40
	[FS2976-01]	O-TERPHENYL (sur.)	2013/03/04		99	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/04		102	%	50 - 13
		F3 (C16-C34 Hydrocarbons)	2013/03/04		90	%	50 - 13
		F4 (C34-C50 Hydrocarbons)	2013/03/04		81	%	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/04		103	%	50 - 13
	•	F2 (C10-C16 Hydrocarbons)	2013/03/04		102	%	80 - 12
		F3 (C16-C34 Hydrocarbons)	2013/03/04		90	%	80 - 12
		F4 (C34-C50 Hydrocarbons)	2013/03/04		81	%	80 - 12
	Method Blank	O-TERPHENYL (sur.)	2013/03/04		113	%	50 - 13
	monitor Diam	F2 (C10-C16 Hydrocarbons)	2013/03/04	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2013/03/04	<10		mg/kg	
			2013/03/04	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)					
	DDD (E00070 0 ()	Reached Baseline at C50	2013/03/04	YES		mg/kg	
	RPD [FS2976-01]	F2 (C10-C16 Hydrocarbons)	2013/03/04	8,3		%	4



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB314801

QA/QC			Date				
Batch	00.7	Barrantan	Analyzed	1.4-1	D	LINDED	0015-9
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6611348 PN2	RPD [FS2976-01]	F3 (C16-C34 Hydrocarbons)	2013/03/04	NC		%	40
		F4 (C34-C50 Hydrocarbons)	2013/03/04	NC		%	40
		Reached Baseline at C50	2013/03/04	NC		%	50
615651 MM5	Matrix Spike						
	[FS2972-01]	1,2-dichloroethane	2013/03/04		82	%	60 - 140
		Benzene	2013/03/04		61	%	60 - 140
		Toluene	2013/03/04		84	%	60 - 140
		1,2-dibromoethane	2013/03/04		92	%	60 - 14
		Ethylbenzene	2013/03/04		NC	%	60 - 14
		m & p-Xylene	2013/03/04		NC	%	60 - 14
		o-Xylene	2013/03/04		NC	%	60 - 14
	Spiked Blank	1,2-dichloroethane	2013/03/04		85	%	60 - 140
	•	Benzene	2013/03/04		81	%	60 - 14
		Toluene	2013/03/04		79	%	60 - 140
		1,2-dibromoethane	2013/03/04		85	%	60 - 140
		Ethylbenzene	2013/03/04		86	%	60 - 14
		m & p-Xylene	2013/03/04		95	%	60 - 14
		o-Xylene	2013/03/04		89	%	60 - 14
	Method Blank	1,2-dichloroethane	2013/03/04	<0.025	00	mg/kg	00 14
	Methor Dialik	Benzene	2013/03/04	<0.020		mg/kg	
			2013/03/04	<0.10			
		Methyl-tert-butylether (MTBE)		<0.020		mg/kg	
		Toluene	2013/03/04			mg/kg	
		1,2-dibromoethane	2013/03/04	< 0.025		mg/kg	
		Ethylbenzene	2013/03/04	<0.010		mg/kg	
		m & p-Xylene	2013/03/04	<0.040		mg/kg	
		o-Xylene	2013/03/04	<0.040		mg/kg	
		Xylenes (Total)	2013/03/04	<0.040		mg/kg	
	RPD [FS2972-01]	1,2-dichloroethane	2013/03/04	NC		%	4
		1,2-dibromoethane	2013/03/04	NC		%	4
615668 MM5	Matrix Spike	1,2-dichloroethane	2013/03/05		87	%	60 - 14
		Benzene	2013/03/05		87	%	60 - 14
		Toluene	2013/03/05		87	%	60 - 14
		1,2-dibromoethane	2013/03/05		97	%	60 - 14
		Ethylbenzene	2013/03/05		94	%	60 - 14
		m & p-Xylene	2013/03/05		102	%	60 - 14
		o-Xylene	2013/03/05		98	%	60 - 14
	Spiked Blank	1,2-dichloroethane	2013/03/05		84	%	60 - 14
	Opined Didnik	Benzene	2013/03/05		74	%	60 - 14
		Toluene	2013/03/05		85	%	60 - 14
			2013/03/05		101	%	60 - 14
		1,2-dibromoethane			98	%	60 - 14 60 - 14
		Ethylbenzene	2013/03/05				
		m & p-Xylene	2013/03/05		107	%	60 - 14
		o-Xylene	2013/03/05		102	%	60 - 14
	Method Blank	1,2-dichloroethane	2013/03/05	<0.025		mg/kg	
		Benzene	2013/03/05	<0.0050		mg/kg	
		Methyl-tert-butylether (MTBE)	2013/03/05	<0.10		mg/kg	
		Toluene	2013/03/05	<0.020		mg/kg	
		1,2-dibromoethane	2013/03/05	<0.025		mg/kg	
		Ethylbenzene	2013/03/05	<0.010		mg/kg	
		m & p-Xylene	2013/03/05	< 0.040		mg/kg	
		o-Xylene	2013/03/05	<0.040		mg/kg	
		Xylenes (Total)	2013/03/05	< 0.040		mg/kg	
	RPD	1,2-dichloroethane	2013/03/05	NC		%	4
		Benzene	2013/03/05	NC		%	4
		Methyl-tert-butylether (MTBE)	2013/03/05	NC		%	4
		MOUTH CITCHUCKICK (MIDE)	E0 10100100	INC		/0	



Attention: Adam Wickman Client Project #: 10-1177.100

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB314801

QA/QC			Date	***			
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6615668 MM5	RPD	Toluene	2013/03/05	NC		%	40
		Ethylbenzene	2013/03/05	NC		%	40
		m & p-Xylene	2013/03/05	NC		%	40
		o-Xylene	2013/03/05	NC		%	40
		Xylenes (Total)	2013/03/05	NC		%	40
6616058 MM5	Spiked Blank	(C6-C10)	2013/03/04		79	%	60 - 140
	Method Blank	(C6-C10)	2013/03/04	<10		mg/kg	
	RPD [FS2972-01]	(C6-C10)	2013/03/04	29.0		%	50
6617587 MM5	Spiked Blank	(C6-C10)	2013/03/05		79	%	60 - 140
	Method Blank	(C6-C10)	2013/03/05	<10		mg/kg	
	RPD	(C6-C10)	2013/03/05	NC		%	50

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.



Validation Signature Page

The analytical data and all (C contained in this report were	reviewed and validated by	the following individual(s).	
mely to				
Andy Lu, Ioata Validation (oordinator			

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

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Special instructions:

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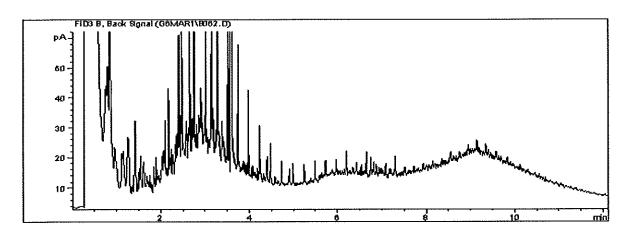
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

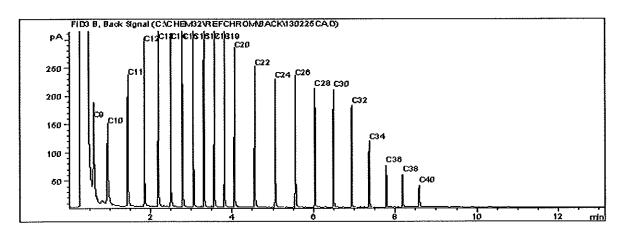
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-43-0.0-0.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8	_	C22
Varsol:	C8	-	C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7	-	C16	Crude Oils:	СЗ	_	C60+



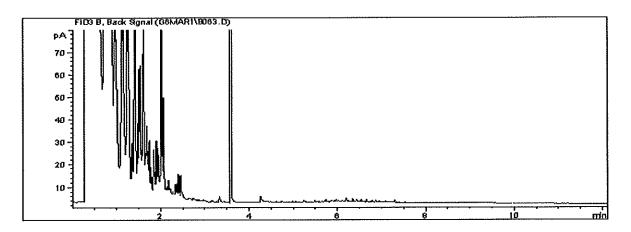
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

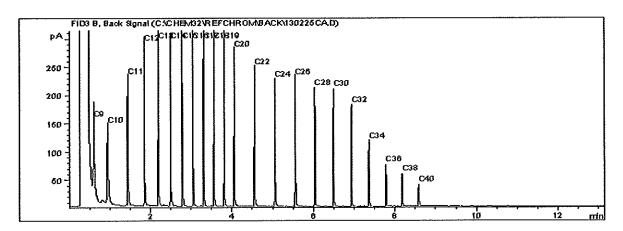
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-43-1.8-2.4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8	_	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7	-	C16	Crude Gils:	C3	_	C60+



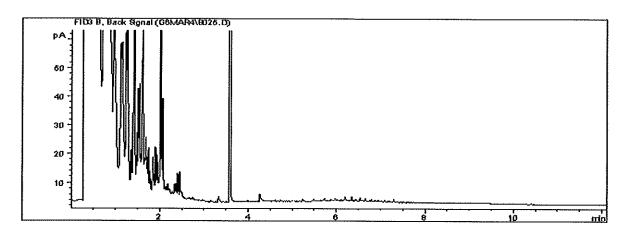
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

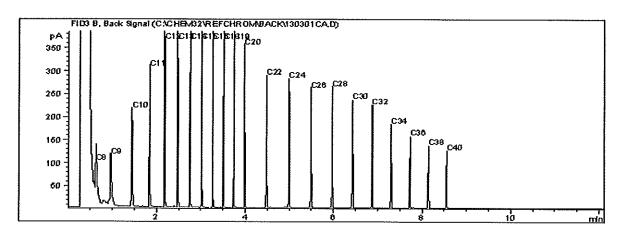
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: DUP-43

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	C6	_	C22
Versol:	C8	-	C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7	-	C16	Crude Oils:	СЗ	_	C60+



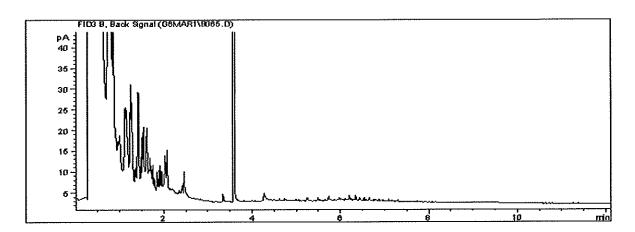
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

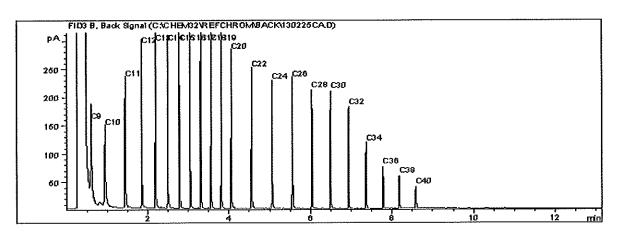
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-43-2.4-3.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	CB	-	C22
Versol:	¢8		C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7		C16	Crude Oils:	C3	-	C60+



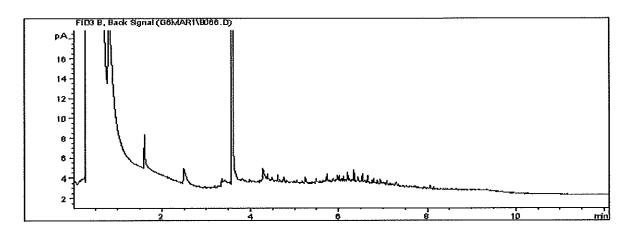
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

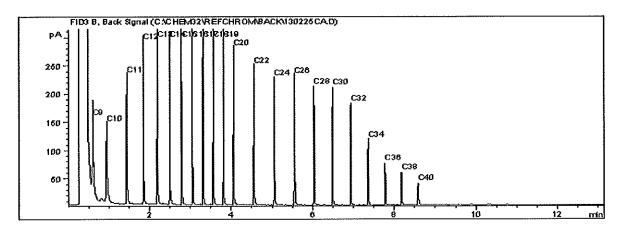
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-43-3.0-3.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

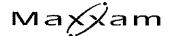


Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	CIS	Diesel:	CB	•••	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7	-	C16	Crude Oils:	СЭ	•••	C60+



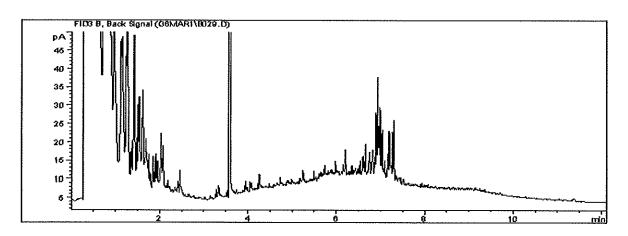
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

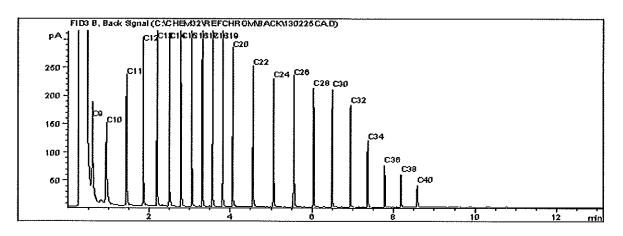
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-44-0.0-0.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	C12	Diesel:	C8	_	C22
Varsol:	C8 -	C12	Lubricating Oils:	020	-	C40
Kerosene:	C7 -	C16	Crude Oils:	CЗ	_	C69+



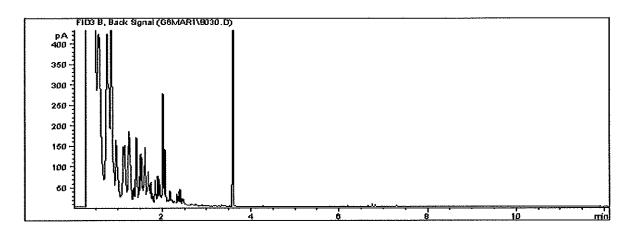
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

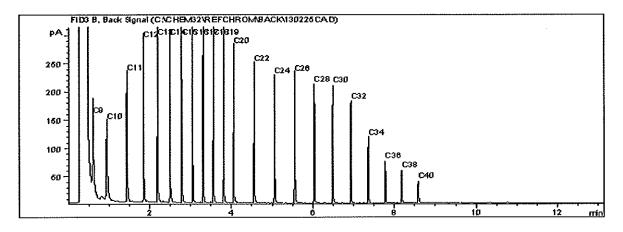
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-44-1.2-1.8

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		Cl2	Diesel:	C8	_	CSS
Varsol:	C8	_	C12	Lubricating Oils:	Ç20	_	C40
Kerosene:	C7	_	C16	Crude Oils:	C3	_	C60+



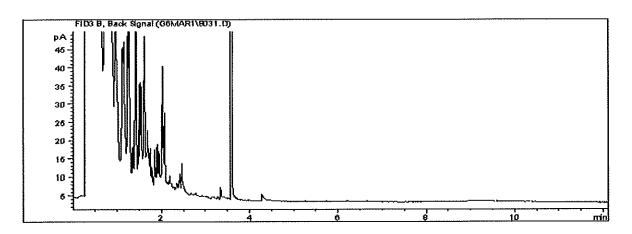
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

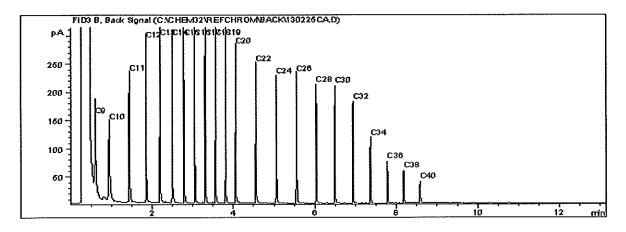
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-44-1.8-2.4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	•	C12	Diesel:	C8	-	CSS
Varsol:	C8	_	C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7	_	C16	Crude Oils:	C3	-	€60+



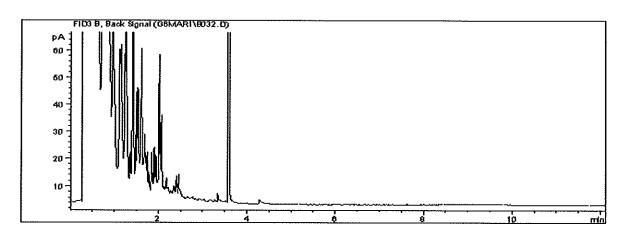
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

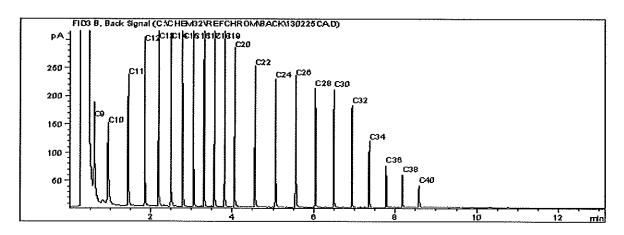
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: DUP-44

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 -	C22
Varsol:	C8 - C12	Lubricating Oils:	Ç20 -	C40
Kerosene:	C7 - C16	Crude Gils:	СЗ —	C60+



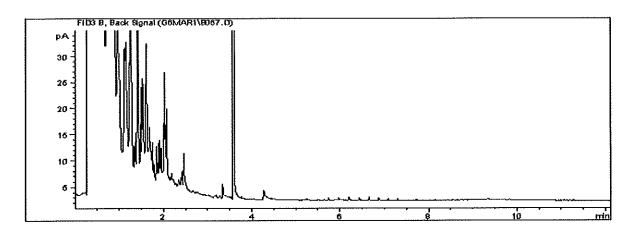
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

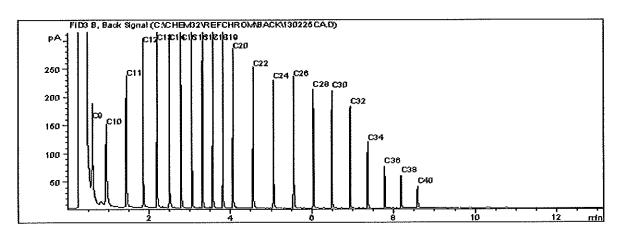
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-44-2.4-3.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	•	C12	Diesel:	C8		C22
Varsol:	C8	-	C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7		C16	Crude Oils:	СЭ	-	C60+



Report Date: 2013/03/06 Maxxam Job #: B314801

Maxxam Sample: FS2976 Lab-Dup

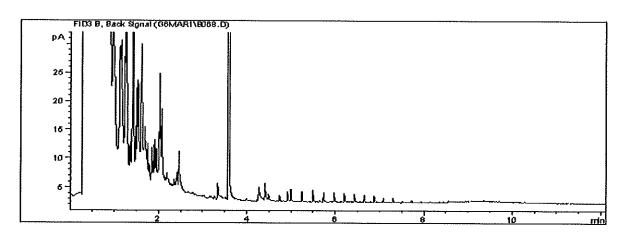
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

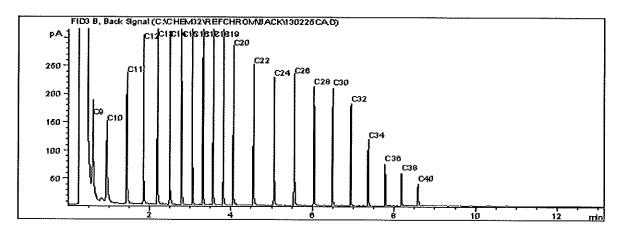
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-44-2.4-3.0

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	_	C22
Versol:	¢8	- C12	Lubricating Oils:	C20	_	C40
Kerosene:	C7 -	- C16	Crude Oils:	CЭ	_	C604



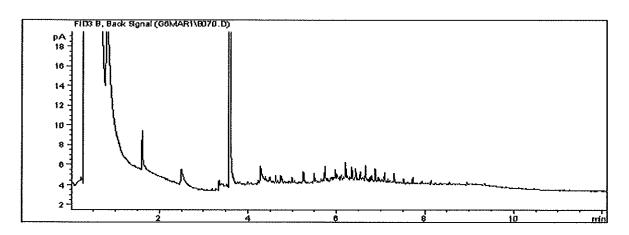
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177.100

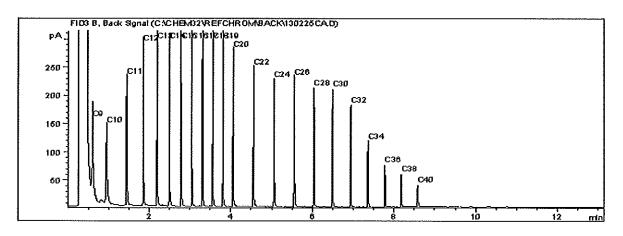
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-44-3.0-3.6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chrometogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	ce	 C22
Varsol:	C8	•••	C12	Lubricating Oils:	€20	 C40
Kerosene:	C7		C16	Crude Oils:	C3	 C60+

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons			Sampling Date: <u>2013/02/22</u>				
Location: 208 St. Anne's	s Road, Winnip	eg, MB	Laboratory: Maxxam Analytics, Winnipeg				
Consultant Project Number: 1	0-1177.100		Sample Submission Number: <u>B314801</u>				
Are All Laboratory QC Samples Wi	ithin Acceptanc	e Criteria ((Yes, No,	Not Applicable)?			
	Yes	No	NA		Comments		
Instrument Surrogate Recovery Extraction Surrogate Recovery Method Blank Concentration Matrix Duplicate RPD Matrix Spike Recovery	X X X X X		****	All lab QC met accept	The state of the s		
Lab Control Sample Recovery			X				
Are All Field QC Samples Within A Field Blank Concentration Trip Blank Concentration Field Duplicate RPD	Alert Limits (Ye	No Not	NA X X		Comments D for PHC F1 (104%) is beyond the acceptable		
Has CoA been signed off (Yes/No) Has lab warranted all tests were in second Has lab warranted all tests were and Were all samples analyzed within health volatiles samples methanol extra Chain of Custody completed and Were sample temperatures acceptable.	statistical contro alyzed following nold times (Yes/ racted, if require I signed (Yes/No	g SOP's in /No)?: ed, within 4 o)?:	CoA (Yes	yes, No or N/A)?:	Yes Yes Yes Yes Yes N/A Yes Yes		
Was a Data Quality Waiver (DQW)) issued (Yes, N	lo or N/A)?		٠ د	No		
Date Issued: _			.]	Date of Response:			
Is data considered to be reliable (Yolf answer is "No", describe and pro				Yes			
Data Reviewed by (Print): <u>A</u> Review Date: <u>2</u> Revision Date (if applicable): _	2013/03/08		- -		ed by (Signature): All All ded by (Signature):		



Your Project #: 10-1177

Site#: 63955

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003367

Attention: ADAM WICKMAN
PARSONS
7 TERRACON PLACE
WINNIPEG, MB
CANADA R2J 4B3

Report Date: 2013/03/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B320732 Received: 2013/03/15, 14:30

Sample Matrix: Water # Samples Received: 5

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/F1 In Water by HS GC/MS	3	N/A	2013/03/18	WINSOP-00054	EPA8260C/CCME PHCCW
				WINSOP-00055	
BTEX/F1 in Water by HS GC/MS	2	N/A	2013/03/21	WINSOP-00054	EPA8260C/CCME PHCCW
BIENT I'M Water by No Contro	_			WINSOP-00055	
CCME Hydrocarbons (F2-F4 in water)	5	2013/03/18	2013/03/18	WINSOP-00056	CCME PHC-CWS
	5	N/A	2013/03/21	BBY7SOP-00002	EPA 6020A
	5	N/A	2013/03/18	BBY6WI-00001	EPA 200.2
Title did tittes treserte ter metale (i)	4		2013/03/19	BBY8-SOP-0009	EPA 8260C
VOCs in Water by HS GC/MS (t)	1	20 10/00/ 10		BBY8-SOP-0009	EPA 8260C

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Diljeet Brar

22 Mar 2013 18:42:55 -07:00

Please direct all questions and description of Analysis to your Project Manager.

Janelle Kochan, B.Sd. Project Manager,

Email: JKochan@maxxam.ca Phone# (204) 772-7276 Ext:2209

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



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

RESULTS OF CHEMICAL ANALYSES OF WATER

Sampling Date		10:30	10:45	11:00	11:15	11:30	
COC Number	UNITS	S003367 BH-25	S003367 BH-20	S003367 BH-28	S003367 BH-24	S003367 BH-19	QC Batch

A	FIELD	FIELD	FIELD	FIELD	FIELD	ONSITE
	A	A FIELD	A FIELD FIELD	A FIELD FIELD FIELD	A FIELD FIELD FIELD	A FIELD FIELD FIELD FIELD



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PETROLEUM HYDROCARBONS (CCME)

000,141,1101	UNITS	BH-25	BH-20	BH-28	BH-24	RDL	QC Batch
COC Number		S003367	S003367	S003367	S003367		
· · · · · · · · · · · · · · · · · · ·	1 1	10:30	10:45	11:00	11:15		
Sampling Date		2013/03/14	2013/03/14	2013/03/14	2013/03/14]
Maxxam ID		FW9268	FW9305	FW9306	FW9307		

Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/L	0.80	1.2	<0.15	1.3	0.15	6656864
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	103	99	101	98	N/A	6656864

N/A = Not Applicable

RDL = Reportable Detection Limit

Maxxam ID		FW9308		
Sampling Date		2013/03/14 11:30		
COC Number		S003367		
	UNITS	BH-19	RDL	QC Batch

Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/L	<0.15	0.15	6656864
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	97	N/A	6656864

N/A = Not Applicable

RDL = Reportable Detection Limit



RDL = Reportable Detection Limit

Maxxam Job #: B320732 Report Date: 2013/03/22 **PARSONS**

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		FW9268	FW9305		FW9306		FW9307		
Sampling Date		2013/03/14	2013/03/14		2013/03/14		2013/03/14		
		10:30	10:45		11:00		11:15		
COC Number	1	S003367	S003367		S003367		S003367		
	UNITS	BH-25	BH-20	RDL	BH-28	RDL.	BH-24	RDL.	QC Batcl
				1 1		l i			
Dissolved Metals by ICPMS									

Maxxam ID		FW9308		
Sampling Date		2013/03/14		
		11:30		
COC Number		S003367		
	UNITS	BH-19	RDL	QC Batch
Dissolved Metals by ICPMS	UNITS	BH-19	RDL	QC Batch



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FW9268	FW9268			FW9305		
Sampling Date		2013/03/14	2013/03/14			2013/03/14		
		10:30	10:30	ļ <u> </u>		10:45		
COC Number		S003367	S003367	<u> </u>		S003367	- DDI	OC Botoh
	UNITS	BH-25	BH-25 Lab-Dup	RDL	QC Batch	BH-20	RDL	QC Batch
Volatiles								
Benzene	mg/L	0.53	0.55	0.0004	6656929	1,2	0.0004	6656929
Toluene	mg/L	0.0065	0.0068	0.0004	6656929	0.0020	0.0004	6656929
Ethylbenzene	mg/L	0.23	0.24	0.0004	6656929	0.45	0.0004	6656929
o-Xylene	mg/L	0.0037	0.0038	0.0004	6656929	0,0092	0.0004	6656929
m & p-Xylene	mg/L	0.43	0.45	0.0008	6656929	0.90	0.0008	6656929
Xylenes (Total)	mg/L	0.43	0.45	0.0008	6656929	0.91	8000.0	6656929
Methyl-tert-butylether (MTBE)	mg/L	<0.004	<0.004	0.004	6656929	<0.004	0.004	6656929
F1 (C6-C10) - BTEX	mg/L	0.6	0.7	0.3	6656929	2,8	0.3	6656929
(C6-C10)	mg/L	1,8	1.9	0.3	6656929	5.3	0.3	6656929
1,2-dichloroethane	ug/L	<0.50	<0.50	0.50	6664031	<180 (1)	180	6660578
1,2-dibromoethane	ug/L	<0,20	<0.20	0.20	6664031	<0.20	0.20	6660578
Surrogate Recovery (%)								
4-BROMOFLUOROBENZENE (sur.)	%	91	95	N/A	6656929	95	N/A	6656929
D4-1,2-DICHLOROETHANE (sur.)	%	94	100	N/A	6656929	82	N/A	6656929
D8-TOLUENE (sur.)	%	99	98	N/A	6656929	101	N/A	6656929

N/A = Not Applicable

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate
(1) RDL raised due to sample matrix interference.



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FW9306		FW9307		FW9308		
Sampling Date		2013/03/14		2013/03/14		2013/03/14		
		11:00		11:15		11:30		
COC Number		S003367		\$003367		8003367		00 B-4-1
	UNITS	BH-28	RDL	BH-24	RDL	BH-19	RDL	QC Batch
Volatiles								
Benzene	mg/L	<0.0004	0.0004	14 (1)	0.004	0.0031	0.0004	6656929
Toluene	mg/L	<0.0004	0.0004	11 (1)	0.004	<0.0004	0.0004	6656929
Ethylbenzene	mg/L	<0.0004	0.0004	2.2 (1)	0.004	<0.0004	0.0004	6656929
o-Xylene	mg/L	<0.0004	0.0004	2.9 (1)	0.004	<0.0004	0.0004	6656929
m & p-Xylene	mg/L	<0.0008	0.0008	6.6 (1)	0.008	<0.0008	0.0008	6656929
Xylenes (Total)	mg/L	<0.0008	0.0008	9.5	0.008	<0.0008	0.0008	6656929
Methyl-tert-butylether (MTBE)	mg/L	<0.004	0.004	<0.004	0.004	<0.004	0.004	6656929
F1 (C6-C10) - BTEX	mg/L	<0,3	0.3	4	3	<0.3	0.3	6656929
(C6-C10)	mg/L	<0.3	0.3	41 (1)	3	<0.3	0.3	6656929
1,2-dichloroethane	ug/L	<0.50	0.50	<0.50	0.50	<0.50	0.50	6660578
1,2-dibromoethane	ug/L	<0.20	0.20	<0.20	0.20	<0.20	0.20	6660578
Surrogate Recovery (%)								
4-BROMOFLUOROBENZENE (sur.)	%	98	N/A	96	N/A	102	N/A	6656929
D4-1,2-DICHLOROETHANE (sur.)	%	105	N/A	88	N/A	100	N/A	6656929
D8-TOLUENE (sur.)	%	97	N/A	103	N/A	102	N/A	6656929

N/A = Not Applicable

RDL = Reportable Detection Limit

⁽¹⁾ RDL raised due to sample dilution.



PARSONS Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

Package 1 9.2°C

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

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER) Comments

Sample FW9306-04 Elements by CRC ICPMS (dissolved): Detection limits raised due to matrix interference.

Results relate only to the items tested.



PARSONS

Attention: ADAM WICKMAN Client Project #: 10-1177

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB320732

QA/QC			Date				
Batch			Analyzed		P-0	11111	0011.11
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limit
656864 CD3		O-TERPHENYL (sur.)	2013/03/18		116	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/18		102	%	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/18		109	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/18		98	%	70 - 13
	Method Blank	O-TERPHENYL (sur.)	2013/03/18		107	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/18	<0.15		mg/L	
656929 CD3	Matrix Spike						
	[FW9305-01]	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		100	%	60 - 14
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/18		88	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/18		103	%	60 - 14
		Benzene	2013/03/18		NC	%	70 - 13
		Toluene	2013/03/18		93	%	70 - 13
		Ethylbenzene	2013/03/18		102	%	70 - 13
		o-Xylene	2013/03/18		105	%	70 - 13
		m & p-Xylene	2013/03/18		107	%	70 - 13
		Methyl-tert-butylether (MTBE)	2013/03/18		100	%	70 - 13
		(C6-C10)	2013/03/18		NC	%	70 - 13
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		106	%	60 - 14
	Opinios Biarini	D4-1,2-DICHLOROETHANE (sur.)	2013/03/18		99	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/18		101	%	60 - 14
		Benzene	2013/03/18		94	%	70 - 13
		Toluene	2013/03/18		96	%	70 - 13
		Ethylbenzene	2013/03/18		103	%	70 - 13
		o-Xylene	2013/03/18		109	%	70 - 13
		m & p-Xylene	2013/03/18		109	%	70 - 13
			2013/03/18		101	%	70 - 13
		Methyl-tert-butylether (MTBE)	2013/03/18		116	%	70 - 13
	A # (4 1 PS)(-	(C6-C10)	2013/03/18		102	%	60 - 14
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		101	%	60 - 14
		D4-1,2-DICHLOROETHANE (sur.)			101	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/18	<0.0004	101		00 - 14
		Benzene	2013/03/18			mg/L	
		Toluene	2013/03/18	< 0.0004		mg/L	
		Ethylbenzene	2013/03/18	<0.0004		mg/L	
		o-Xylene	2013/03/18	<0.0004		mg/L	
		m & p-Xylene	2013/03/18	<0.0008		mg/L	
		Xylenes (Total)	2013/03/18	<0.0008		mg/L	
		Methyl-tert-butylether (MTBE)	2013/03/18	<0.004		mg/L	
		F1 (C6-C10) - BTEX	2013/03/18	<0.3		mg/L	
		(C6-C10)	2013/03/18	<0.3		mg/L	
	RPD [FW9268-01]	Benzene	2013/03/18	5.0		%	4
		Toluene	2013/03/18	4.1		%	4
		Ethylbenzene	2013/03/18	3.5		%	4
		o-Xylene	2013/03/18	3.7		%	4
		m & p-Xylene	2013/03/18	4.8		%	4
		Xylenes (Total)	2013/03/18	4.8		%	4
		Methyl-tert-butylether (MTBE)	2013/03/18	NC		%	4
		F1 (C6-C10) - BTEX	2013/03/18	NC		%	4
		(C6-C10)	2013/03/18	5.6		%	4
6660578 MM5	Matrix Spike	1,2-dichloroethane	2013/03/19		97	%	70 - 13
COUNTY INITIO	шани орно	1,2-dibromoethane	2013/03/19		96	%	70 - 13
	Spiked Blank	1,2-dichloroethane	2013/03/19		97	%	70 - 13
	Opinou Diann	1,2-dibromoethane	2013/03/19		94	%	70 - 13
	Method Blank	1,2-dichloroethane	2013/03/19	<0.50	5 1	ug/L	
	Menion Blank	1,2-dibromoethane	2013/03/19	<0.20		ug/L	
	DDD		2013/03/19	NC		%	
	RPD	1,2-dichloroethane	20 13/03/18	NO		70	•



PARSONS

Attention: ADAM WICKMAN Client Project #: 10-1177

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB320732

QA/QC			Date				
Batch			Analyzed		_	1.0.000	00 ! !!!-
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6660578 MM5	RPD	1,2-dibromoethane	2013/03/19	NC		%	30
6664031 MM5	Matrix Spike	1,2-dichloroethane	2013/03/20		96	%	70 - 130
		1,2-dibromoethane	2013/03/20		93	%	70 - 130
	Spiked Blank	1,2-dichloroethane	2013/03/20		93	%	70 - 130
	op	1.2-dibromoethane	2013/03/20		89	%	70 - 130
	Method Blank	1,2-dichloroethane	2013/03/20	<0.50		ug/L	
Meth		1.2-dibromoethane	2013/03/20	<0.20		ug/L	
	RPD [FW9268-03]	1.2-dichloroethane	2013/03/20	NC		%	30
	(o [o=oo o+]	1.2-dibromoethane	2013/03/20	NC		%	30
6672222 GS2	Matrix Spike	Dissolved Lead (Pb)	2013/03/21		113	%	80 - 120
00,2222	Spiked Blank	Dissolved Lead (Pb)	2013/03/21		101	%	80 - 120
	Method Blank	Dissolved Lead (Pb)	2013/03/21	<0.20		ug/L	
	RPD	Dissolved Lead (Pb)	2013/03/21	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.



Validation Signature Page

Maxxam Job #: B320732	
R	ved and validated by the following individual(s).
Janelle Kochan, B.Sc., Project Manager	
Rob Reinert, Data Validation Coordinator	
	when the and have the required "signatories" as per section 5 10.2 of

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

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10-1177 Adam Parszan		KA REGULAR (5 Days)	enten en en en en en en en en en en en en e	0 200							Johns Mark	in a Managara			4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		Prease indicate Filtered. Preserved or Both (F. P. F.P.)	
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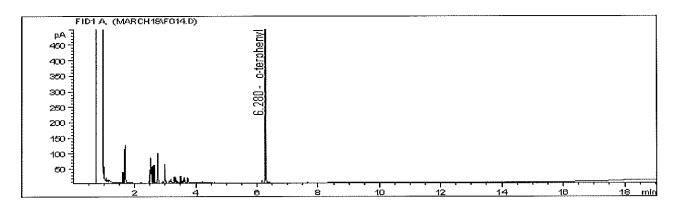
PARSONS

Client Project #: 10-1177

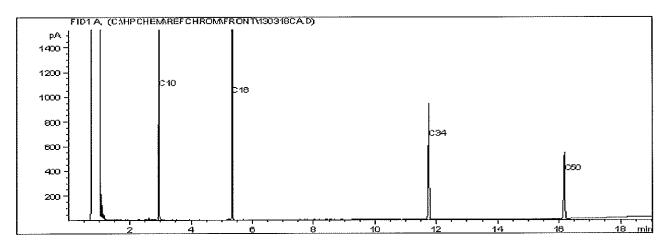
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-25

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	cs	-	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7	_	C16	Crude Oils:	CЗ	-	C604

Page 1 of 1



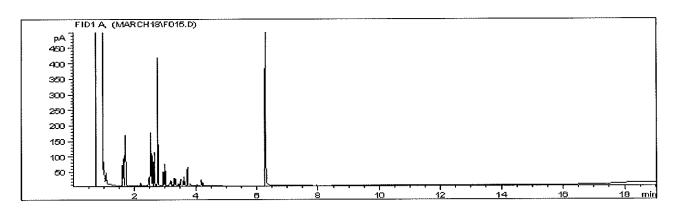
PARSONS

Client Project #: 10-1177

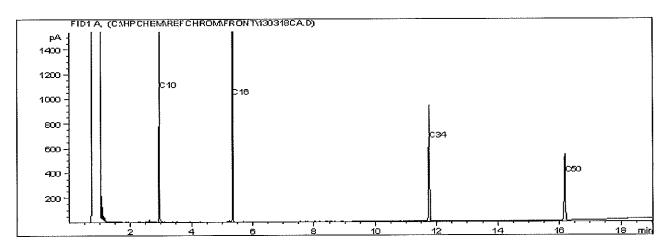
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-20

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel: C8		_	CZZ
Varsol:	C8	_	C12	Lubricating Oils: C20)	-	C40
Rerosene:	C7		C16	Crude Oils: C3		-	C60+

Page 1 of 1



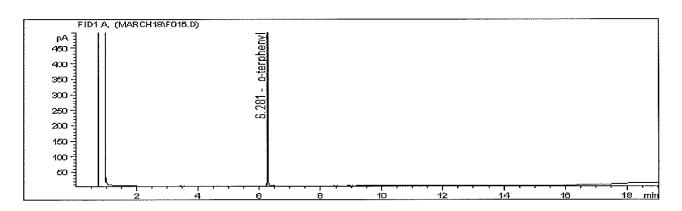
PARSONS

Client Project #: 10-1177

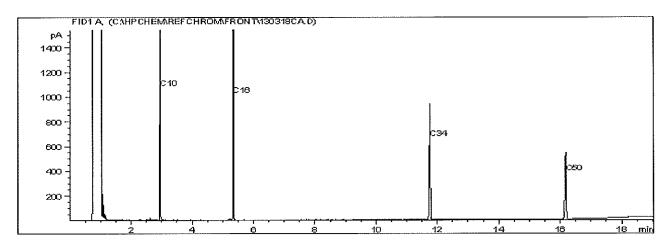
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-28

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel: C	8	-	C22
Varsol:	C8	-	C12	Lubricating Oils: C	20		C40
Kerosene:	67	-	C16	Crude Oils: C	3	-	C60+

Page 1 of 1



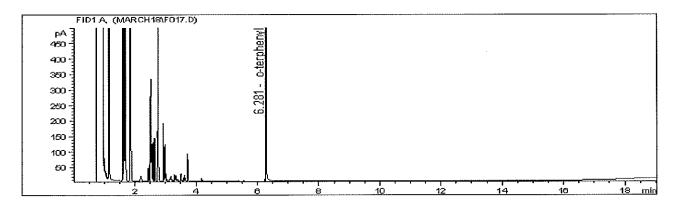
PARSONS

Client Project #: 10-1177

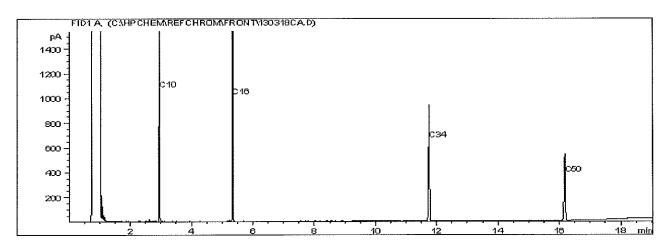
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-24

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8	_	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	_	C40
Rerosene:	C7	-	C16	Crude Oils:	C3	-	C60+

Page 1 of 1



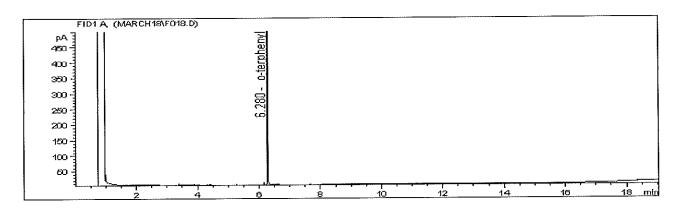
PARSONS

Client Project #: 10-1177

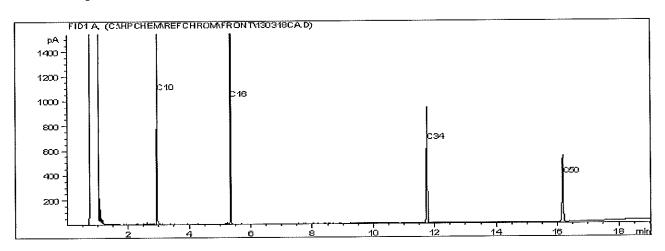
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-19

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	64	_	C12	Diesel:	C8		C22
Varsol:	C8	_	C12	Lubricating Oils:	C20		C40
Rerosene:	07	_	C16	Crude Oils:	CЗ	-	C60+

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons	Sampling Date: <u>2013/03/14</u>
Location: 208 St. Anne's Road, Winnipeg, MB	Laboratory: Maxxam Analytics, Winnipeg
Consultant Project Number: 10-1177.100	Sample Submission Number: <u>B320732</u>
Are All Laboratory QC Samples Within Acceptance Criteria ((Yes, No, Not Applicable)?
Instrument Surrogate Recovery Extraction Surrogate Recovery Method Blank Concentration Matrix Duplicate RPD Matrix Spike Recovery Lab Control Sample Recovery	NA Comments All lab QC met acceptance criteria. X
Are All Field QC Samples Within Alert Limits (Yes, No, Not	Applicable)?
Field Blank Concentration Trip Blank Concentration Field Duplicate RPD	NA Comments X No field QC were submitted. X X
Has CoA been signed off (Yes/No)?: Has lab warranted all tests were in statistical control in CoA (Has lab warranted all tests were analyzed following SOP's in Were all samples analyzed within hold times (Yes/No)?: All volatiles samples methanol extracted, if required, within a Is Chain of Custody completed and signed (Yes/No)?: Were sample temperatures acceptable when they reached lab	CoA (Yes, No or N/A)?:
Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?	
Date Issued:	Date of Response:
Is data considered to be reliable (Yes/No)?: If answer is "No", describe and provide rationale:	Yes
Data Reviewed by (Print): <u>Alexia Reske-Naurocki</u> Review Date: <u>2013/03/25</u> Revision Date (if applicable):	Data Reviewed by (Signature): Mr All



Your Project #: 10-1177

Site#: 63955

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003366

Attention: ADAM WICKMAN

O'CONNOR ASSOCIATES ENVIRONMENTAL 7 TERRACON PLACE WINNIPEG, MB R2J 4B3 CANADA

Report Date: 2013/03/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B320748 Received: 2013/03/15, 14:30

Sample Matrix: Water # Samples Received: 4

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/F1 in Water by HS GC/MS	2	N/A	2013/03/19	WINSOP-00054	EPA8260C/CCME PHCCW
				WINSOP-00055	
BTEX/E1 in Water by HS GC/MS	2	N/A	2013/03/21	WINSOP-00054	EPA8260C/CCME PHCCW
DIEM I III Maior by the comme				WINSOP-00055	
CCME Hydrocarbons (E2-F4 in water)	4	2013/03/18	2013/03/18	WINSOP-00056	CCME PHC-CWS
	4	N/A	2013/03/21	BBY7SOP-00002	EPA 6020A
	4	N/A	2013/03/18	BBY6WI-00001	EPA 200.2
VOCs in Water by HS GC/MS (1)	4	2013/03/18	2013/03/19	BBY8-SOP-0009	EPA 8260C
BTEX/F1 in Water by HS GC/MS CCME Hydrocarbons (F2-F4 in water) Elements by CRC ICPMS (dissolved) (1) Filter and HNO3 Preserve for Metals (1) VOCs in Water by HS GC/MS (1)	4	2013/03/18 N/A N/A	2013/03/18 2013/03/21 2013/03/18	WINSOP-00054 WINSOP-00055 WINSOP-00056 BBY7SOP-00002 BBY6WI-00001	CCME PHC-CWS EPA 6020A EPA 200.2

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Qarlle Kochan 22 Mar 2013 15:16:00 -05:00

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

Janelle Kochan, B.Sc., Project Manager, Email: JKochan@maxxam.ca

Phone# (204) 772-7276 Ext:2209

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



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		FW9339	FW9341	FW9343	FW9345	
Sampling Date		2013/03/15	2013/03/15	2013/03/15	2013/03/15	
1		10:00	11:00	11:00	11:30	
COC Number		S003366	S003366	\$003366	S003366	
	UNITS	BH1	BH-5	DUP-1	BH6	QC Batch

1			
FIELD	FIELD	FIELD	ONSITE
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O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PETROLEUM HYDROCARBONS (CCME)

	UNITS	BH1	BH-5	DUP-1	BH6	RDL	QC Batch
COC Number		S003366	S003366	S003366	S003366		
		10:00	11:00	11:00	11:30		
Sampling Date		2013/03/15	2013/03/15	2013/03/15	2013/03/15		
Maxxam ID		FW9339	FW9341	FW9343	FW9345		

Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/L	<0.15	2.9	2.9	1.1	0.15	6656864
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	97	101	96	102	N/A	6656864

N/A = Not Applicable

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		FW9339	FW9341	FW9343	FW9345	-	
Sampling Date		2013/03/15	2013/03/15	2013/03/15	2013/03/15		
		10:00	11:00	11:00	11:30		
COC Number		\$003366	S003366	S003366	S003366		
	UNITS	BH1	BH-5	DUP-1	BH6	RDL	QC Batch

Dissolved Metals by ICPMS							
Dissolved Lead (Pb)	ug/L	0.21	0.61	0.61	0.25	0.20	6672222

RDL = Reportable Detection Limit



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FW9339		FW9341		FW9343		
Sampling Date		2013/03/15		2013/03/15		2013/03/15		
		10:00		11:00		11:00		
COC Number		S003366		S003366		S003366		
	UNITS	BH1	RDL	BH-5	RDL	DUP-1	RDL	QC Batch
Volatiles								
Benzene	mg/L	<0.0004	0.0004	0.76	0.0004	0.71	0.0004	6656929
Toluene	mg/L	<0.0004	0.0004	0.12	0.0004	0.12	0.0004	6656929
Ethylbenzene	mg/L	<0.0004	0.0004	2.1 (1)	0.004	2.1 (1)	0.004	6656929
o-Xylene	mg/L	<0.0004	0.0004	2.3 (1)	0.004	2.9 (1)	0.004	6656929
m & p-Xylene	mg/L	<0.0008	0.0008	8.8 (1)	0.008	9,3 (1)	0.008	6656929
Xylenes (Total)	mg/L	<0.0008	0.0008	11	0.008	12	0.008	6656929
Methyl-tert-butylether (MT8E)	mg/L	<0.004	0.004	<0.004	0.004	<0.004	0.004	6656929
F1 (C6-C10) - BTEX	mg/L	<0.3	0.3	5.3	0.3	2.5	0.3	6656929
(C6-C10)	mg/L	<0.3	0.3	19	0.3	18	0.3	6656929
1,2-dichloroethane	ug/L	3.9	0.50	<31 (2)	31	<27	27	6660578
1,2-dibromoethane	ug/L	<0.20	0.20	<0,20	0.20	<0.20	0.20	6660578
Surrogate Recovery (%)								
4-BROMOFLUOROBENZENE (sur.)	%	99	N/A	104	N/A	101	N/A	6656929
D4-1,2-DICHLOROETHANE (sur.)	%	100	N/A	94	N/A	96	N/A	6656929
D8-TOLUENE (sur.)	%	98	N/A	101	N/A	109	N/A	6656929

N/A = Not Applicable

⁽¹⁾ RDL raised due to sample dilution.

⁽²⁾ RDL raised due to sample matrix interference.



O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FW9345		
Sampling Date		2013/03/15		
		11:30		
COC Number	*********	S003366	DDI	OC Botoh
	UNITS	BH6	RDL	QC Batch
Volatiles				
Benzene	mg/L	0.40	0.0004	6656929
Toluene	mg/L	0.022	0.0004	6656929
Ethylbenzene	mg/L	0.76	0.0004	6656929
o-Xylene	mg/L	0.35	0.0004	6656929
m & p-Xylene	mg/L	2.0	0.0008	6656929
Xylenes (Total)	mg/L	2.4	0.0008	6656929
Methyl-tert-butylether (MTBE)	mg/L	<0.004	0.004	6656929
F1 (C6-C10) - BTEX	mg/L	1.1	0.3	6656929
(C6-C10)	mg/L	4.7	0.3	6656929
1,2-dichloroethane	ug/L	<23 (1)	23	6660578
1,2-dibromoethane	ug/L	<0.20	0.20	6660578
Surrogate Recovery (%)				
4-BROMOFLUOROBENZENE (sur.)	%	104	N/A	6656929
D4-1,2-DICHLOROETHANE (sur.)	%	96	N/A	6656929
D8-TOLUENE (sur.)	%	98	N/A	6656929

N/A = Not Applicable RDL = Reportable Detection Limit

⁽¹⁾ RDL raised due to sample matrix interference.



O'CONNOR ASSOCIATES ENVIRONMENTAL Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

Package 1 9.1°C

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

General Comments

Results relate only to the items tested.



O'CONNOR ASSOCIATES ENVIRONMENTAL

Attention: ADAM WICKMAN Client Project #: 10-1177

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB320748

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limit
656864 CD3	Matrix Spike	O-TERPHENYL (sur.)	2013/03/18		116	%	50 - 13
	•	F2 (C10-C16 Hydrocarbons)	2013/03/18		102	%	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/18		109	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/18		98	%	70 - 13
	Method Blank	O-TERPHENYL (sur.)	2013/03/18		107	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/18	<0.15		mg/L	
656929 CD3	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		100	%	60 - 14
.000020 020	mann opino	D4-1,2-DICHLOROETHANE (sur.)	2013/03/18		88	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/18		103	%	60 - 14
		Benzene	2013/03/18		NC	%	70 - 13
		Toluene	2013/03/18		93	%	70 - 13
		Ethylbenzene	2013/03/18		102	%	70 - 13
		o-Xylene	2013/03/18		105	%	70 - 13
		•	2013/03/18		107	%	70 - 13
		m & p-Xylene			100	%	70 - 13
		Methyl-tert-butylether (MTBE)	2013/03/18		NC	%	70 - 13
		(C6-C10)	2013/03/18			%	60 - 14
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		106		
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/18		99	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/18		101	%	60 - 14
		Benzene	2013/03/18		94	%	70 - 13
		Toluene	2013/03/18		96	%	70 - 13
		Ethylbenzene	2013/03/18		103	%	70 - 13
		o-Xylene	2013/03/18		109	%	70 - 13
		m & p-Xylene	2013/03/18		109	%	70 - 1
		Methyl-tert-butylether (MTBE)	2013/03/18		101	%	70 - 1
		(C6-C10)	2013/03/18		116	%	70 - 1
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		102	%	60 - 1
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/18		101	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/18		101	%	60 - 14
		Benzene	2013/03/18	< 0.0004		mg/L	
		Toluene	2013/03/18	< 0.0004		mg/L	
		Ethylbenzene	2013/03/18	< 0.0004		mg/L	
		o-Xylene	2013/03/18	< 0.0004		mg/L	
		<u> </u>	2013/03/18	<0.0008		mg/L	
		m & p-Xylene	2013/03/18	<0.0008		mg/L	
		Xylenes (Total)	2013/03/18	<0.004		mg/L	
		Methyl-tert-butylether (MTBE)		<0.3		mg/L	
		F1 (C6-C10) - BTEX	2013/03/18				
		(C6-C10)	2013/03/18	<0.3		mg/L	
	RPD	Benzene	2013/03/18	5,0		%	•
		Toluene	2013/03/18	4.1		%	
		Ethylbenzene	2013/03/18	3.5		%	•
		o-Xylene	2013/03/18	3.7		%	
		m & p-Xylene	2013/03/18	4.8		%	:
		Xylenes (Total)	2013/03/18	4.8		%	
		Methyl-tert-butylether (MTBE)	2013/03/18	NC		%	
		F1 (C6-C10) - BTEX	2013/03/18	NC		%	
		(C6-C10)	2013/03/18	5.6		%	
6660578 MM5	Matrix Spike	1.2-dichloroethane	2013/03/19		97	%	70 - 1
22300.0 1111110		1,2-dibromoethane	2013/03/19		96	%	70 - 1
	Spiked Blank	1,2-dichloroethane	2013/03/19		97	%	70 - 1
	opinou piant	1,2-dibromoethane	2013/03/19		94	%	70 - 1
	Method Blank	1.2-dichloroethane	2013/03/19	<0.50	- •	ug/L	
	MIGHIOR DIGHT	1,2-dibromoethane	2013/03/19	<0.20		ug/L	
	000		2013/03/19	NC		ug/∟ %	
	RPD	1,2-dichloroethane	2013/03/19	NC		%	
		1,2-dibromoethane	2013/03/18	NO		70	



O'CONNOR ASSOCIATES ENVIRONMENTAL

Attention: ADAM WICKMAN Client Project #: 10-1177

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB320748

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6672222 GS2	Matrix Splke	Dissolved Lead (Pb)	2013/03/21		113	%	80 - 120
	Spiked Blank	Dissolved Lead (Pb)	2013/03/21		101	%	80 - 120
	Method Blank	Dissolved Lead (Pb)	2013/03/21	<0.20		ug/L	
	RPD	Dissolved Lead (Pb)	2013/03/21	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample, Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.



Validation Signature Page

Maxxam Job #: B320748	
The analytical data and all QC contained in this report were rev	riewed and validated by the following individual(s).
Andy Lu, Data Validation Coordinator	_
Janelle Kochan, B.Sc., Project Manager	

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.



14.

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	EQS.	FT.7 F1-F4 Sleva (75 mleten) Megiciklest Metaly (CCME 2 ATT) Settinite 4	ministra i	olon annum annum annum annum annum				v distantial	entalinement) à				2,Maintenances	A	(MCD)	*
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		RUSH (Contact lab to receive) 1 2 DAY 1 1 DAY 1 SAME DAY Date Required: REGULAR (5 Days)		Auronoonee		3	MATERIAL AND AND AND AND AND AND AND AND AND AND						- Martin Constitution	Served or Both (F. P.		かららずい
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Special insurance of the property of the prope	<u>\$</u>	*Page 11 of 15	Constitution of the Consti					*
Maxxam Analytics International Corporation o/a Maxxam Analytics, L	o/a Maxxam Analytics, Unit D - 6	Jnit D - 675 Berry Street, Winnipeg, MB, R3H 1A7, Tel: (204) 772-7276, Fax: (204) 772-2386 www.maxam.ca	innipeg, MB, R3H	IA7, Tel: (204) 7	72-7276, Fax:	(204) 772-	2386 www.maxx	E.



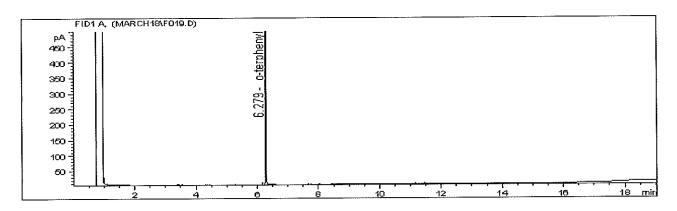
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

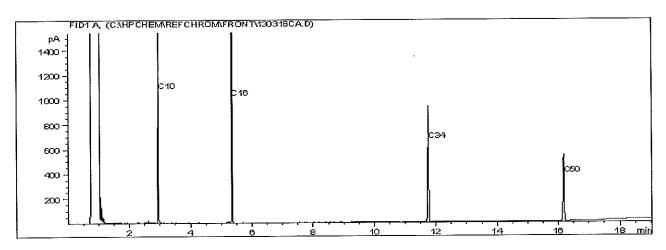
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH1

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8	-	CZZ
Varsol:	C8		C12	Lubricating Oils:			C40
Kerosene:	C7	_	C16	Crude Oils:	C3	-	0604

Page 1 of 1



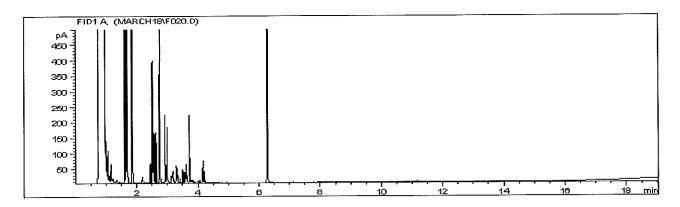
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

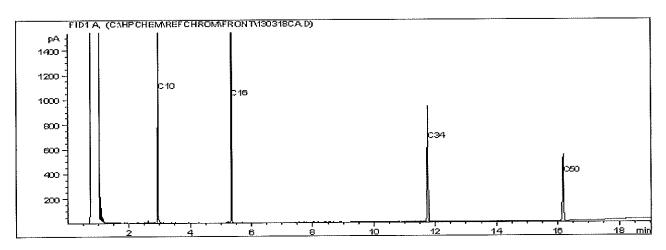
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-5

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	cs		C22
Varsol:	C8	_	C12	Lubricating Oils:			C40
Kerosene:	C7		C16	Crude Oils:	СЗ	-	C60+

Page 1 of 1



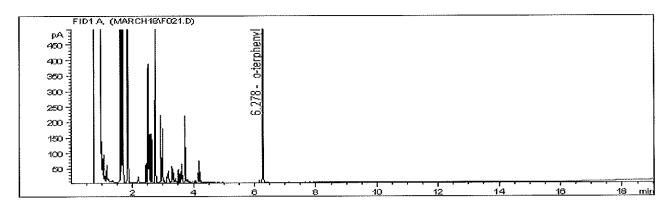
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

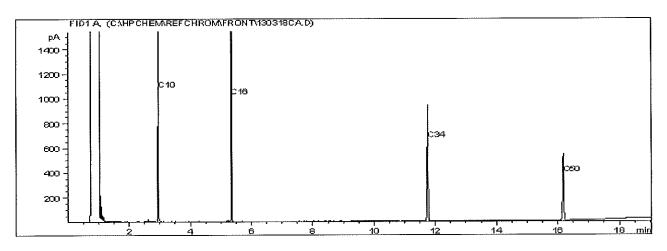
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: DUP-1

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C.	1	C12	Diesel:	C8	₩	C22
Varsol:	C	3	C12	Lubricating Oils:	C20		C40
Kerosene:	C'	7 –	C16	Crude Gils:	63	_	C60+

Page 1 of 1



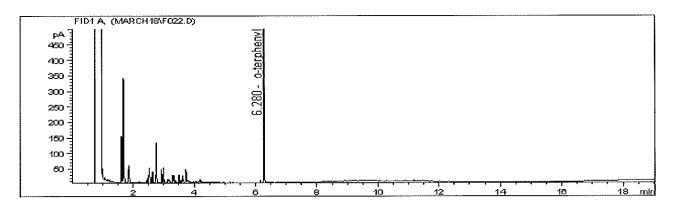
O'CONNOR ASSOCIATES ENVIRONMENTAL

Client Project #: 10-1177

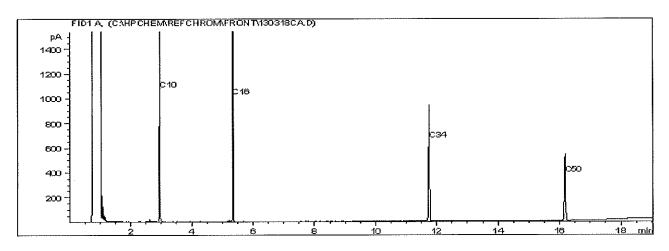
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH6

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	 Ci2	Diesel: 0	28	-	C22
Varsol:	C8	 C12	Lubricating Oils: (220	-	C40
Rerosene:	C7	 C16	Crude Oils: (СЗ		C60+

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons				Sampling Date:	2013/03/15		
Location: 208 St. Anne	's Road, Winnip	oeg, MB		Laboratory:	Maxxam Analytics, Winnipeg		
Consultant Project Number: 1	10-1177.100		Sample Submission Number: <u>B320748</u>				
Are All Laboratory QC Samples W	ithin Acceptane	ce Criteria	(Yes, No,	Not Applicable)?			
	Yes	No	NA		Comments		
Instrument Surrogate Recovery Extraction Surrogate Recovery Method Blank Concentration Matrix Duplicate RPD Matrix Spike Recovery Lab Control Sample Recovery	X X X X X		X	All lab QC met accept			
Lao Control Sample Recovery			Λ				
Are All Field QC Samples Within	270 2272			le)?			
Elald Dlaule Consentention	Yes	No	NA V	All field QC met alert	Comments		
Field Blank Concentration Trip Blank Concentration Field Duplicate RPD	X		X X	All fleta QC met alert	umus.		
Has CoA been signed off (Yes/No) Has lab warranted all tests were in Has lab warranted all tests were an Were all samples analyzed within I All volatiles samples methanol ext Is Chain of Custody completed and Were sample temperatures accepta	statistical contralyzed followin told times (Yes racted, if requir I signed (Yes/N	ng SOP's in /No)?: ed, within a lo)?:	CoA (Yes	s, No or N/A)?: Yes, No or N/A)?:	Yes Yes Yes Yes Yes NA Yes Yes		
Was a Data Quality Waiver (DQW) issued (Yes, N	No or N/A)	?:		No		
Date Issued: _				Date of Response:			
Is data considered to be reliable (Y If answer is "No", describe and pro				Yes	,		
Data Reviewed by (Print): 2 Review Date: 2 Revision Date (if applicable): 2	2013/03/25				ed by (Signature): ALPAL.		



Your Project #: 10-1177

Site#: 63955

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003370

Attention: ADAM WICKMAN **PARSONS** 7 TERRACON PLACE WINNIPEG, MB CANADA R2J 4B3

Report Date: 2013/03/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B320765 Received: 2013/03/15, 15:30

Sample Matrix: Water # Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed Laboratory Method	Analytical Method
BTEX/F1 In Water by HS GC/MS	6	N/A	2013/03/19 WINSOP-00054	EPA8260C/CCME PHCCW
— — — — — — — — — — — — — — — — — — — 			WINSOP-00055	
CCME Hydrocarbons (F2-F4 in water)	6	2013/03/18	2013/03/18 WINSOP-00056	CCME PHC-CWS
Elements by CRC ICPMS (dissolved) (1)	4	N/A	2013/03/20 BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (dissolved) (1)	1	N/A	2013/03/21 BBY7SOP-00002	EPA 6020A
Filter and HNO3 Preserve for Metals (i)	5	N/A	2013/03/18 BBY6WI-00001	EPA 200.2
VQCs in Water by HS GC/MS (1)	4	2013/03/18	2013/03/19 BBY8-SOP-0009	EPA 8260C
VOCs in Water by HS GC/MS (1)	2	2013/03/19	2013/03/20 BBY8-SOP-0009	EPA 8260C

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Quality Kodran 25 Mar 2013 16:26:14-05:00

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

Janelle Kochan, B.Sc., Project Manager, Email: JKochan@maxxam.ca Phone# (204) 772-7276 Ext:2209

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



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		FW9465	FW9466	FW9467	FW9474	FW9475	
Sampling Date		2013/03/14	2013/03/14	2013/03/14	2013/03/14	2013/03/14	
Cumpling Bate	i i	09:00	09:15	09:30	10:00	10:15	
COC Number		S003370	S003370	\$003370	S003370	S003370	
OOO Hallibol	UNITS	BH3A	BH-26	BH-21	BH-35	BH-29	QC Batch

Calculated Parameters	1						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	FIELD	ONSITE



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		FW9465	FW9466	FW9467	FW9468		
Sampling Date		2013/03/14	2013/03/14	2013/03/14	2013/03/14		
,		09:00	09:15	09:30	09:45		
COC Number		S003370	S003370	S003370	S003370		
	UNITS	BH3A	BH-26	BH-21	BH-27	RDL	QC Batch
Ext. Pet. Hydrocarbon							
Ext. Pet. Hydrocarbon F2 (C10-C16 Hydrocarbons)	mg/L	<0.15	<0.15	0.31	3.8	0.15	6656864
	mg/L	<0.15	<0.15	0.31	3.8	0.15	6656864

N/A = Not Applicable

RDL = Reportable Detection Limit

	0		1		
F2 (C10-C16 Hydrocarbons)	mg/L	<0.15	<0.15	0.15	6656864
Ext. Pet. Hydrocarbon					
	UNITS	BH-35	BH-29	RDL	QC Batch
COC Number		S003370	S003370		
,		10:00	10:15		
Sampling Date		2013/03/14	2013/03/14		
Maxxam ID	1 1	FW9474	FW9475		

98

%

N/A

98

6656864

N/A = Not Applicable

O-TERPHENYL (sur.)



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		FW9465	FW9466		FW9467	FW9467		
Sampling Date		2013/03/14	2013/03/14		2013/03/14	2013/03/14		
		09:00	09:15		09:30	09:30		
COC Number		S003370	S003370		S003370	S003370		
	UNITS	BH3A	BH-26	RDL.	BH-21	BH-21 Lab-Dup	RDL	QC Batch

Dissoived Metals by ICPMS							
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	0.20	<0.40	 0.40	6671904

RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate

Maxxam ID		FW9474	FW9475		
Sampling Date		2013/03/14	2013/03/14		
		10:00	10:15		
COC Number		S003370	\$003370		
	UNITS	BH-35	BH-29	RDL	QC Batch

Dissolved Metals by ICPMS					
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	0.20	6671904



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FW9465		FW9466		FW9467		
Sampling Date		2013/03/14		2013/03/14		2013/03/14		
		09:00		09:15		09:30		
COC Number		S003370		S003370		S003370		<u> </u>
	UNITS	ВН3А	RDL	BH-26	RDL	BH-21	RDL	QC Batch
Volatiles								
Benzene	mg/L	<0.0004	0.0004	<0.0004	0.0004	0.0028	0.0004	6656929
Toluene	mg/L	<0.0004	0.0004	<0.0004	0.0004	<0.0004	0.0004	6656929
Ethylbenzene	mg/L	<0.0004	0.0004	<0.0004	0.0004	0.0007	0.0004	6656929
o-Xylene	mg/L	<0.0004	0.0004	<0.0004	0.0004	<0.0004	0.0004	6656929
m & p-Xylene	mg/L	<0.0008	0.0008	<0.0008	0.0008	<0.0008	0.0008	6656929
Xylenes (Total)	mg/L	<0.0008	0.0008	<0.0008	0.0008	<0.0008	0.0008	6656929
Methyl-tert-butylether (MTBE)	mg/L	<0.004	0.004	<0.004	0.004	<0.004	0.004	6656929
F1 (C6-C10) - BTEX	mg/L	<0.3	0.3	<0.3	0.3	<0.3	0,3	6656929
(C6-C10)	mg/L	<0.3	0.3	<0.3	0.3	<0.3	0.3	6656929
1,2-dichloroethane	ug/L	<2.8 (1)	2.8	<0.50	0.50	<9.7 (1)	9.7	6660578
1,2-dibromoethane	ug/L	<0.20	0.20	<0.20	0.20	<0.20	0.20	6660578
Surrogate Recovery (%)								
4-BROMOFLUOROBENZENE (sur.)	%	101	N/A	101	N/A	102	N/A	6656929
D4-1,2-DICHLOROETHANE (sur.)	%	97	N/A	97	N/A	109	N/A	6656929
D8-TOLUENE (sur.)	%	102	N/A	102	N/A	97	N/A	6656929

N/A = Not Applicable

⁽¹⁾ RDL raised due to sample matrix interference.



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FW9468			FW9474	FW9475		
Sampling Date		2013/03/14			2013/03/14	2013/03/14		
		09:45			10:00	10:15		
COC Number		S003370			S003370	S003370		
	UNITS	BH-27	RDL	QC Batch	BH-35	BH-29	RDL	QC Batch
Volatlies								
Benzene	mg/L	0.0030	0.0004	6656929	<0.0004	<0.0004	0.0004	6656929
Toluene	mg/L	0.0006	0.0004	6656929	<0.0004	<0.0004	0.0004	6656929
Ethylbenzene	mg/L	0.35	0.0004	6656929	<0.0004	<0.0004	0.0004	6656929
o-Xylene	mg/L	0.0026	0.0004	6656929	<0.0004	<0.0004	0.0004	6656929
m & p-Xylene	mg/L	0.61	0.0008	6656929	<0.0008	<0.0008	0.0008	6656929
Xylenes (Total)	mg/L	0.61	0.0008	6656929	<0.0008	<0.0008	8000.0	6656929
Methyl-tert-butylether (MTBE)	mg/L	<0.004	0.004	6656929	<0.004	<0.004	0.004	6656929
F1 (C6-C10) - BTEX	mg/L	7.1	0.3	6656929	<0.3	<0.3	0.3	6656929
(C6-C10)	mg/L	8.1	0,3	6656929	<0.3	<0.3	0.3	6656929
1,2-dichloroethane	ug/L	<2.3 (1)	2.3	6660578	<0.50	<0.50	0.50	6664031
1,2-dibromoethane	ug/L	<0.20	0.20	6660578	<0.20	<0.20	0,20	6664031
Surrogate Recovery (%)								
4-BROMOFLUOROBENZENE (sur.)	%	99	N/A	6656929	102	102	N/A	6656929
D4-1,2-DICHLOROETHANE (sur.)	%	97	N/A	6656929	106	106	N/A	6656929
D8-TOLUENE (sur.)	%	101	N/A	6656929	98	99	N/A	6656929

N/A = Not Applicable

⁽¹⁾ RDL raised due to sample matrix interference.



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

Package 1 11.5°C

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

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER) Comments

Sample FW9467-04 Elements by CRC ICPMS (dissolved): RDL raised due to sample matrix interference.

Results relate only to the items tested.



PARSONS

Attention: ADAM WICKMAN Client Project #: 10-1177

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB320765

QA/QC			Date				
Batch	00 T	Decement	Analyzed	17-1	D	LINUTO	00 12-24
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limit
6656864 CD3	Matrix Spike	O-TERPHENYL (sur.)	2013/03/18		116	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/18		102	%	50 - 13
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/18		109	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/18		98	%	70 - 13
	Method Blank	O-TERPHENYL (sur.)	2013/03/18		107	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/18	<0.15		mg/L	
6656929 CD3	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		100	%	60 - 14
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/18		88	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/18		103	%	60 - 14
		Benzene	2013/03/18		NC	%	70 - 13
		Toluene	2013/03/18		93	%	70 - 13
		Ethylbenzene	2013/03/18		102	%	70 - 13
		o-Xylene	2013/03/18		105	%	70 - 13
		m & p-Xylene	2013/03/18		107	%	70 - 13
		Methyl-tert-butylether (MTBE)	2013/03/18		100	%	70 - 13
		(C6-C10)	2013/03/18		NC	%	70 - 13
	Called Blank	· · · · · · · · · · · · · · · · · · ·			106	%	60 - 14
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		99		60 - 14
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/18			%	
		D8-TOLUENE (sur.)	2013/03/18		101	%	60 - 14
		Benzene	2013/03/18		94	%	70 - 13
		Toluene	2013/03/18		96	%	70 - 13
		Ethylbenzene	2013/03/18		103	%	70 - 13
		o-Xylene	2013/03/18		109	%	70 - 13
		m & p-Xylene	2013/03/18		109	%	70 - 13
		Methyl-tert-butylether (MTBE)	2013/03/18		101	%	70 - 13
		(C6-C10)	2013/03/18		116	%	70 - 13
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		102	%	60 - 14
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/18		101	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/18		101	%	60 - 14
		Benzene	2013/03/18	< 0.0004		mg/L	
		Toluene	2013/03/18	< 0.0004		mg/L	
		Ethylbenzene	2013/03/18	<0.0004		mg/L	
		o-Xylene	2013/03/18	<0.0004		mg/L	
		*	2013/03/18	<0.0004			
		m & p-Xylene		<0.0008		mg/L	
		Xylenes (Total)	2013/03/18			mg/L	
		Methyl-tert-butylether (MTBE)	2013/03/18	<0.004		mg/L	
		F1 (C6-C10) - BTEX	2013/03/18	<0.3		mg/L	
		(C6-C10)	2013/03/18	<0.3		mg/L	
	RPD	Benzene	2013/03/18	5.0		%	4
		Toluene	2013/03/18	4.1		%	4
		Ethylbenzene	2013/03/18	3.5		%	4
		o-Xylene	2013/03/18	3.7		%	4
		m & p-Xylene	2013/03/18	4.8		%	4
		Xylenes (Total)	2013/03/18	4.8		%	4
		Methyl-tert-butylether (MTBE)	2013/03/18	NC		%	4
		F1 (C6-C10) - BTEX	2013/03/18	NC		%	4
		(C6-C10)	2013/03/18	5.6		%	4
6660578 MM5	Matrix Spike	1,2-dichloroethane	2013/03/19	5.5	97	%	70 - 13
POOPLO IAIIAIO	mann opino	1,2-dibromoethane	2013/03/19		96	%	70 - 13
	Spiked Blank	1,2-dichloroethane	2013/03/19		97	% %	70 - 13
	opikeo biank	,	2013/03/19		9 <i>1</i> 94	% %	
	Made at Dieset	1,2-dibromoethane		20 FO	84		70 - 13
	Method Blank	1,2-dichloroethane	2013/03/19	<0.50		ug/L	
		1,2-dibromoethane	2013/03/19	<0.20		ug/L	_
	RPD	1,2-dichloroethane	2013/03/19	NC		%	3
		1,2-dibromoethane	2013/03/19	NC		%	3



PARSONS

Attention: ADAM WICKMAN Client Project #: 10-1177

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB320765

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6664031 MM5	Matrix Spike						
	[FW9474-01]	1,2-dichloroethane	2013/03/20		96	%	70 - 130
	•	1,2-dibromoethane	2013/03/20		93	%	70 - 130
	Spiked Blank	1,2-dichloroethane	2013/03/20		93	%	70 - 130
	•	1,2-dibromoethane	2013/03/20		89	%	70 - 130
	Method Blank	1,2-dichloroethane	2013/03/20	<0.50		ug/L	
		1,2-dibromoethane	2013/03/20	<0.20		ug/L	
	RPD	1.2-dichloroethane	2013/03/20	NC		%	30
		1,2-dibromoethane	2013/03/20	NC		%	30
6671904 AD5	Matrix Spike	•					
	[FW9467-04]	Dissolved Lead (Pb)	2013/03/21		95	%	80 - 120
	Spiked Blank	Dissolved Lead (Pb)	2013/03/21		104	%	80 - 120
	Method Blank	Dissolved Lead (Pb)	2013/03/21	<0.20		ug/L	
	RPD [FW9467-04]	Dissolved Lead (Pb)	2013/03/21	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.



Validation Signature Page

Maxxam Job #: B320765
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).
Buelfter
Andy Lu, Ibata Validation Coordinator
Janelle Kochan, B.Sc., Project Manager

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

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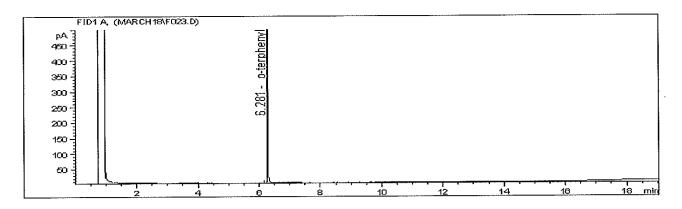
PARSONS

Client Project #: 10-1177

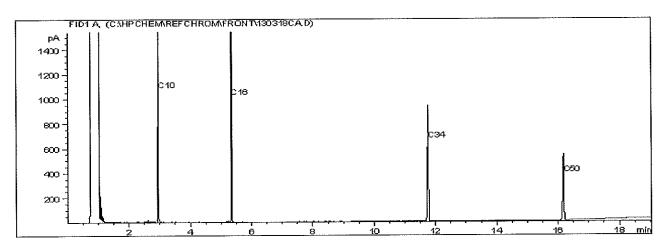
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH3A

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8	₩.	C22
Varsol:	С8		Ci2	Lubricating Oils:	C20		C40
Kerosene:	C7	-	C16	Crude Oils:	С3	-	C60+

Page 1 of 1



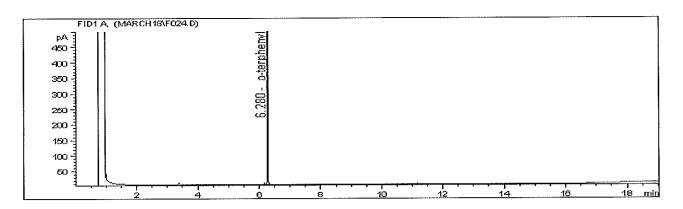
PARSONS

Client Project #: 10-1177

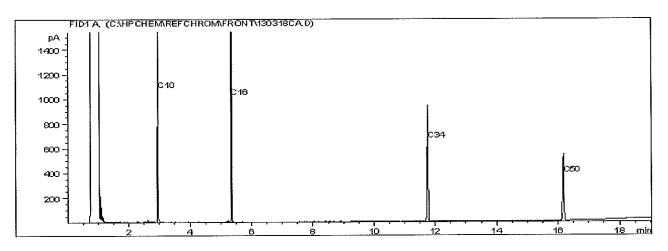
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-26

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8	-	C22
Varsol:	C8		C12	Lubricating Oils:			C40
Kerosene:	C7	_	C16	Crude Oils:	С3		C60+

Page 1 of 1



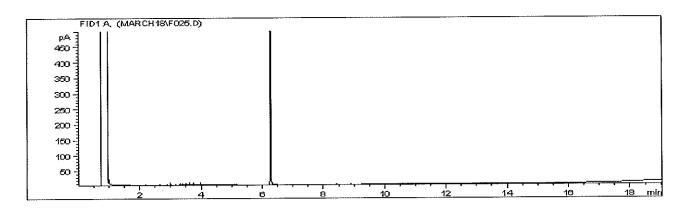
PARSONS

Client Project #: 10-1177

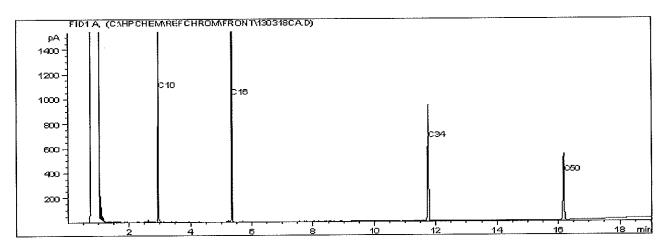
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-21

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12
Varsol:	C8	-	C12
Rerosene:	C7		C.1.6

Diesel: Lubricating Oils: Crude Oils:

C8 - C22 C20 - C40 C3 - C60+

Page 1 of 1



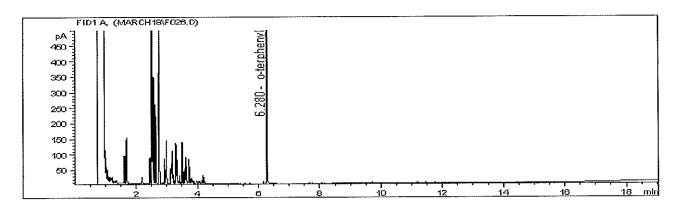
PARSONS

Client Project #: 10-1177

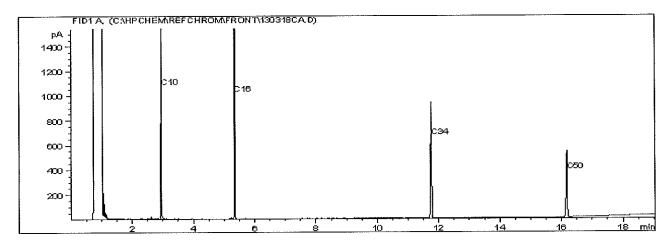
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-27

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	C12	Diesel:	C8	 C22
Varsol:	C8 -	C12	Lubricating Oils:	C20	 C40
Verneene.	C7 ~	016	Crude Bils:	С3	 C604

Page 1 of 1



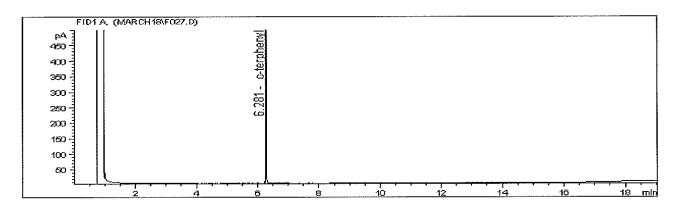
PARSONS

Client Project #: 10-1177

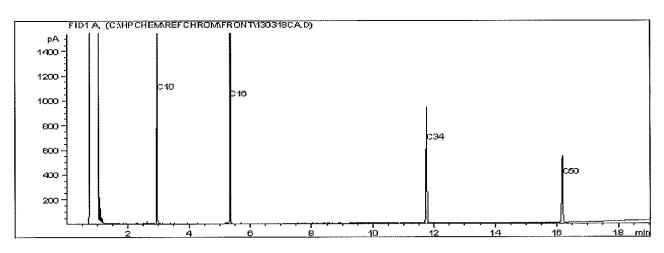
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-35

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	- 612	Diesel:	C8	_	C22
Varsol:	C8 -	- C12	Lubricating Oils:	€20	-	C40
Kerosene:	C7 -	- C16	Crude Oils:	CЗ	-	C60+

Page 1 of 1



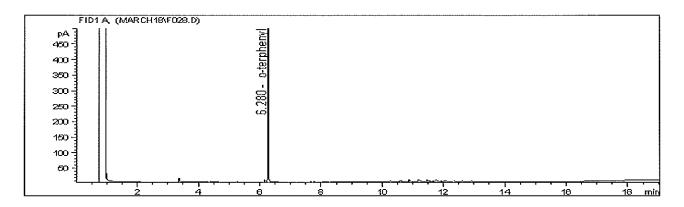
PARSONS

Client Project #: 10-1177

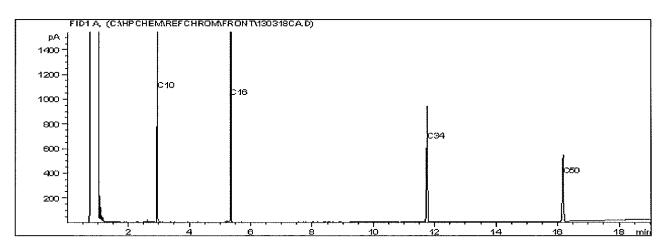
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH-29

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	C8		C22
Varsol:	C8	-	C12	Lubricating Oils:	C20		C40
Kerosene:	C7	-	C16	Crude Oils:	C3	_	C60+

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons				Sampling Date: 2	2013/03/14		
Location: 208 St. Anne's	Road, Winnip	eg, MB		Laboratory: 1	Maxxam Analytics, Winnipeg		
Consultant Project Number: 10	0-1177.100		Sample Submission Number: <u>B320765</u>				
Are All Laboratory QC Samples Wi	thin Acceptanc	ce Criteria ((Yes, No,	Not Applicable)?			
	Yes	No	NA		Comments		
Instrument Surrogate Recovery	X	T		All lab QC met accepto	ance criteria.		
Extraction Surrogate Recovery	X						
Method Blank Concentration	X						
Matrix Duplicate RPD	X						
Matrix Spike Recovery	X						
Lab Control Sample Recovery			X				
Are All Field QC Samples Within A	Alert Limits (Ye	es, No, Not No	NA	2	Comments		
Field Blank Concentration			X	All field QC have met	the acceptable RPD limits.		
Trip Blank Concentration			X				
Field Duplicate RPD			X				
Has CoA been signed off (Yes/No)? Has lab warranted all tests were in s Has lab warranted all tests were and Were all samples analyzed within h All volatiles samples methanol extra Is Chain of Custody completed and Were sample temperatures acceptab	statistical controllyzed following old times (Yes/acted, if require signed (Yes/Notes)	g SOP's in 'No)?: ed, within 4 o)?:	CoA (Yes	s, No or N/A)?: Yes, No or N/A)?:	Yes Yes Yes Yes Yes NA Yes No		
Was a Data Quality Waiver (DQW)	issued (Yes, N	lo or N/A)	?:		No		
Date Issued: _			.: :	Date of Response:			
Is data considered to be reliable (Ye If answer is "No", describe and pro				Yes			
Data Reviewed by (Print): <u>A</u> Review Date: <u>2</u> Revision Date (if applicable): _	013/03/28				ed by (Signature): A. R. M. M. del by (Signature):		



Your Project #: 10-1177

Site#: 63955

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Your C.O.C. #: S003371

Attention: ADAM WICKMAN
PARSONS
7 TERRACON PLACE
WINNIPEG, MB
CANADA R2J 4B3

Report Date: 2013/03/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B320783 Received: 2013/03/15, 14:30

Sample Matrix: Water # Samples Received: 6

		Date	Date	
Analyses	Quantity	Extracted	Analyzed Laboratory Method	Analytical Method
BTEX/F1 in Water by HS GC/MS	2	N/A	2013/03/19 WINSOP-00054 WINSOP-00055	EPA8260C/CCME PHCCW
BTEX/F1 in Water by HS GC/MS	2	N/A	2013/03/21 WINSOP-00054 WINSOP-00055	EPA8260C/CCME PHCCW
BTEX/F1 in Water by HS GC/MS	2	N/A	2013/03/22 WINSOP-00054 WINSOP-00055	EPA8260C/CCME PHCCW
CCME Hydrocarbons (F2-F4 in water)	3	2013/03/18	2013/03/18 WINSOP-00056	CCME PHC-CWS
CCME Hydrocarbons (F2-F4 In water)	1	2013/03/18	2013/03/20 WINSOP-00056	CCME PHC-CWS
Elements by CRC ICPMS (dissolved) (1)	4	N/A	2013/03/21 BBY7SOP-00002	EPA 6020A
Filter and HNO3 Preserve for Metals (1)	4	N/A	2013/03/15 BBY6WI-00001	EPA 200.2
VOCs in Water by HS GC/MS (1)	2	2013/03/19	2013/03/20 BBY8-SOP-0009	EPA 8260C
VOCs in Water by HS GC/MS (f)	1	2013/03/19	2013/03/21 BBY8-SOP-0009	EPA 8260C
VOCs in Water by HS GC/MS (1)	1	2013/03/20	2013/03/20 BBY8-SOP-0009	EPA 8260C

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

(1) This test was performed by Maxxam Vancouver

Encryption Key

Difieet Bran

22 Mar 2013 18:43:17 -07:00

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

Janelle Kochan, B.Sd. Project Manager,

Email: JKochan@maxxam.ca Phone# (204) 772-7276 Ext:2209

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Total cover pages: 1



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		FW9549	FW9550	FW9551	FW9552	
Sampling Date		2013/03/15	2013/03/15	2013/03/15	2013/03/15	
Carripung Date		12:00	12:00	12:30	13:00	
COC Number		S003371	S003371	S003371	S003371	
OCO Manipor	UNITS	BH7	DUP-2	BH9	BH17	QC Batch

Calculated Parameters						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	ONSITE



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

PETROLEUM HYDROCARBONS (CCME)

	UNITS	BH7	DUP-2	BH9	QC Batch	BH17	KDL	QC Batch
COC Number		S003371	S003371	S003371		S003371	DDI	OC Batab
		12:00	12:00	12:30		13:00		
Sampling Date		2013/03/15	2013/03/15	2013/03/15		2013/03/15		
Maxxam ID		FW9549	FW9550	FW9551		FW9552		

Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/L	2.7	2.9	<0.15	6656864	0.82	0.15	6666899
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	100	96	95	6656864	100	N/A	6666899

N/A = Not Applicable

RDL = Reportable Detection Limit

Maxxam ID		FW9552		
Sampling Date		2013/03/15		
, ,		13:00		
COC Number		S003371		
	UNITS	BH17 Lab-Dup	RDL	QC Batch

Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/L	1.2	0.15	6666899
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	102	N/A	6666899

N/A = Not Applicable

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		FW9549	FW9550	FW9551	FW9552		
Sampling Date		2013/03/15	2013/03/15	2013/03/15	2013/03/15		
		12:00	12:00	12:30	13:00		
COC Number		S003371	S003371	S003371	S003371		
	UNITS	BH7	DUP-2	BH9	BH17	RDL	QC Batch

Dissolved Metals by ICPMS							
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	6670447



PARSONS

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

6668265

N/A

148 (3)

N/A

6664031

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FW9549			FW9550		
Sampling Date		2013/03/15			2013/03/15		
		12:00 S003371			12:00 S003371		
COC Number	UNITS	BH7	RDL	QC Batch	DUP-2	RDL	QC Batch
	011110	Р	,	,			
Volatiles							
Benzene	mg/L	3.6 (1)	0.004	6656929	3.4 (1)	0.004	6656929
Toluene	mg/L	0.069	0.0004	6656929	0.072	0.0004	6656929
Ethylbenzene	mg/L	0.56	0.0004	6656929	0.58	0.0004	6656929
o-Xylene	mg/L	0.28	0.0004	6656929	0.29	0.0004	6656929
m & p-Xylene	mg/L	1,7	0.0008	6656929	1.8	0.0008	6656929
Xylenes (Total)	mg/L	2.0	0.0008	6656929	2.1	0.0008	6656929
Methyl-tert-butylether (MTBE)	mg/L	<0.004	0.004	6656929	<0.004	0.004	6656929
F1 (C6-C10) - BTEX	mg/L	3.6	0.3	6656929	3.8	0.3	6656929
(C6-C10)	mg/L	9,8	0.3	6656929	10	0.3	6656929
1,2-dichloroethane	ug/L	<86 (2)	86	6668265	<0.50	0.50	6664031
1,2-dibromoethane	ug/L	<0.20	0.20	6668265	<0.20	0.20	6664031
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	101	N/A	6656929	103	N/A	6656929
D4-1,2-DICHLOROETHANE (sur.)	%	100	N/A	6656929	96	N/A	6656929
D8-TOLUENE (sur.)	%	99	N/A	6656929	105	N/A	6656929
1,4-Difluorobenzene (sur.)	%	97	N/A	6668265	96	N/A	6664031
4-BROMOFLUOROBENZENE (sur.)	%	102	N/A	6668265	90	N/A	6664031

144 (3)

N/A = Not Applicable

RDL = Reportable Detection Limit

D4-1,2-DICHLOROETHANE (sur.)

- (1) RDL raised due to sample dilution.
- (2) RDL raised due to sample matrix interference.
 (3) Surrogate recovery above control limit Matrix interference

%

0.20

N/A

N/A

N/A

N/A

N/A

N/A

N/A

102

99

101

N/A

N/A

N/A

N/A

6672040

6672040

6672040

N/A

N/A

N/A



Maxxam Job #: B320783 Report Date: 2013/03/22 **PARSONS**

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FW9551	FW9552		FW9553		
Sampling Date		2013/03/15	2013/03/15		2013/03/15		
, ,		12:30	13:00		13:30		
COC Number		S003371	S003371		S003371		
	UNITS	BH9	BH17	QC Batch	FIELD BLANK	RDL	QC Batch
			1			1	T
Volatiles							
Benzene	mg/L	<0.0004	0.027	6656929	<0.0004	0.0004	6672040
Toluene	mg/L	<0.0004	0.0008	6656929	<0.0004	0.0004	6672040
Ethylbenzene	mg/L	<0.0004	0.065	6656929	<0.0004	0.0004	6672040
o-Xylene	mg/L	<0.0004	<0.0004	6656929	<0.0004	0.0004	6672040
m & p-Xylene	mg/L	<0.0008	<0.0008	6656929	<0.0008	8000.0	6672040
Xylenes (Total)	mg/L	<0.0008	<0.0008	6656929	<0,0008	8000.0	6672040
Methyl-tert-butylether (MTBE)	mg/L	<0.004	<0.004	6656929	<0.004	0.004	6672040
F1 (C6-C10) - BTEX	mg/L	<0.3	0.4	6656929	<0.3	0.3	6672040
(C6-C10)	mg/L	<0.3	0.5	6656929	<0.3	0.3	6672040
1,2-dichloroethane	ug/L	<0.50	<0.50	6664031	N/A	0.50	N/A

< 0.20

106

127

98

98

93

97

6664031

6656929

6656929

6656929

6664031

6664031

6664031

< 0.20

106

128

96

99

90

94

ug/L

%

%

%

%

%

%

N/A = Not Applicable

1,2-dibromoethane

D8-TOLUENE (sur.)

Surrogate Recovery (%)

1,4-Difluorobenzene (sur.)

4-BROMOFLUOROBENZENE (sur.)

4-BROMOFLUOROBENZENE (sur.)

D4-1,2-DICHLOROETHANE (sur.)

D4-1,2-DICHLOROETHANE (sur.)



Maxxam Job #: B320783 Report Date: 2013/03/22 **PARSONS**

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

VOLATILE ORGANICS BY GC-MS (WATER)

	FW9553	FW9554		
	2013/03/15	2013/03/15		
	13:30	14:00		
				00 5-4-1
UNITS	1	TRIP BLANK	KDL	QC Batch
	BLANK Lab-Dup			
mg/L	<0.0004	<0.0004	0.0004	6672040
mg/L	<0.0004	<0.0004	0.0004	6672040
mg/L	<0.0004	<0.0004	0.0004	6672040
mg/L	<0.0004	<0.0004	0.0004	6672040
mg/L	<0.0008	<0.0008	0.0008	6672040
mg/L	<0.0008	<0.0008	0.0008	6672040
mg/L	<0.004	<0.004	0.004	6672040
mg/L	<0.3	<0.3	0.3	6672040
mg/L	<0.3	<0.3	0.3	6672040
%	100	102	N/A	6672040
%	101	104	N/A	6672040
%	103	101	N/A	6672040
	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	2013/03/15 13:30 S003371 UNITS FIELD BLANK Lab-Dup mg/L <0.0004 mg/L <0.0004 mg/L <0.0004 mg/L <0.0008 mg/L <0.0008 mg/L <0.004 mg/L <0.004 mg/L <0.004 mg/L <0.004 mg/L <0.3 mg/L <0.3	2013/03/15 2013/03/15 14:00 S003371 S003371 TRIP BLANK	2013/03/15 2013/03/15 14:00 S003371 S003371 TRIP BLANK RDL



Maxxam Job #: B320783 Report Date: 2013/03/22 **PARSONS**

Client Project #: 10-1177

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Sampler Initials: AB

Package 1 11.5°C

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

General Comments

Results relate only to the items tested.



PARSONS

Attention: ADAM WICKMAN Client Project #: 10-1177

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report Maxxam Job Number: NB320783

QA/QC		-	Date				
Batch			Analyzed		_		00 12-2
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
656864 CD3	Matrix Spike	O-TERPHENYL (sur.)	2013/03/18		116	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2013/03/18		102	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/18		109	%	50 - 13
	•	F2 (C10-C16 Hydrocarbons)	2013/03/18		.98	%	70 - 13
	Method Blank	O-TERPHENYL (sur.)	2013/03/18		107	%	50 - 13
		F2 (C10-C16 Hydrocarbons)	2013/03/18	<0.15		mg/L	
656929 CD3	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		100	%	60 - 14
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/18		88	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/18		103	%	60 - 14
		Benzene	2013/03/18		NC	%	70 - 13
		Toluene	2013/03/18		93	%	70 - 13
		Ethylbenzene	2013/03/18		102	%	70 - 13
		o-Xylene	2013/03/18		105	%	70 - 13
		m & p-Xylene	2013/03/18		107	%	70 - 13
		Methyl-tert-butylether (MTBE)	2013/03/18		100	%	70 - 13
		(C6-C10)	2013/03/18		NC	%	70 - 13
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		106	%	60 - 14
	Shiked platik	D4-1,2-DICHLOROETHANE (sur.)	2013/03/18		99	%	60 - 14
			2013/03/18		101	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/18		94	%	70 - 13
		Benzene	2013/03/18		96	%	70 - 13
		Toluene	2013/03/18		103	%	70 - 13
		Ethylbenzene	2013/03/18		109	%	70 - 13
		o-Xylene			109	%	70 - 13
		m & p-Xylene	2013/03/18		103	%	70 - 1
		Methyl-tert-butylether (MTBE)	2013/03/18		116	%	70 - 1
		(C6-C10)	2013/03/18		102	%	60 - 14
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2013/03/18		102	%	60 - 14
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/18				60 - 14
		D8-TOLUENE (sur.)	2013/03/18	.0.0004	101	% ********	00 - 12
		Benzene	2013/03/18	< 0.0004		mg/L	
		Toluene	2013/03/18	<0.0004		mg/L	
		Ethylbenzene	2013/03/18	<0.0004		mg/L	
		o-Xylene	2013/03/18	<0.0004		mg/L	
		m & p-Xylene	2013/03/18	<0.0008		mg/L	
		Xylenes (Total)	2013/03/18	<0.0008		mg/L	
		Methyl-tert-butylether (MTBE)	2013/03/18	<0.004		mg/L	
		F1 (C6-C10) - BTEX	2013/03/18	<0.3		mg/L	
		(C6-C10)	2013/03/18	< 0.3		mg/L	
	RPD	Benzene	2013/03/18	5.0		%	
	.,, _	Toluene	2013/03/18	4.1		%	•
		Ethylbenzene	2013/03/18	3.5		%	
		o-Xylene	2013/03/18	3.7		%	
		m & p-Xylene	2013/03/18	4.8		%	
		Xylenes (Total)	2013/03/18	4.8		%	
		Methyl-tert-butylether (MTBE)	2013/03/18	NC		%	
		F1 (C6-C10) - BTEX	2013/03/18	NC		%	
			2013/03/18	5.6		%	
0001001 1415	Maduly Onlin	(C6-C10)	2013/03/10	0.0	99	%	70 - 1
6664031 MM5	Matrix Spike	1,4-Difluorobenzene (sur.)	2013/03/20		107	%	70 - 1
		4-BROMOFLUOROBENZENE (sur.)			88	%	70 - 1
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/20		96	%	70 - 1
		1,2-dichloroethane	2013/03/20		93	% %	70 - 1
		1,2-dibromoethane	2013/03/20		93		70 - 1
	Spiked Blank	1,4-Difluorobenzene (sur.)	2013/03/20			%	
		4-BROMOFLUOROBENZENE (sur.)	2013/03/20		104	%	70 - 1
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/20		81	%	70 - 1



PARSONS

Attention: ADAM WICKMAN Client Project #: 10-1177

P.O. #:

Site Location:

208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB320783

QA/QC			Date				
Batch			Analyzed		_		
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6664031 MM5	Spiked Blank	1,2-dichloroethane	2013/03/20		93	%	70 - 130
		1,2-dibromoethane	2013/03/20		89	%	70 - 130
	Method Blank	1,4-Difluorobenzene (sur.)	2013/03/20		103	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2013/03/20		91	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/20		85	%	70 - 130
		1,2-dichloroethane	2013/03/20	< 0.50		ug/L	
		1,2-dibromoethane	2013/03/20	<0.20		ug/L	
	RPD	1,2-dichloroethane	2013/03/20	NC		%	30
		1,2-dibromoethane	2013/03/20	NC		%	30
6666899 CD3	Matrix Spike	O-TERPHENYL (sur.)	2013/03/20		101	%	50 - 130
	·	F2 (C10-C16 Hydrocarbons)	2013/03/20		88	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2013/03/20		101	%	50 - 130
	.,	F2 (C10-C16 Hydrocarbons)	2013/03/20		98	%	70 - 130
	Method Blank	O-TERPHENYL (sur.)	2013/03/20		103	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2013/03/20	<0.15		mg/L	
	RPD [FW9552-04]	F2 (C10-C16 Hydrocarbons)	2013/03/20	36.0		%	40
6668265 MM5		(2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (
0000200 111110	[FW9549-01]	1,4-Difluorobenzene (sur.)	2013/03/20		99	%	70 - 130
	[1 1100-10 01]	4-BROMOFLUOROBENZENE (sur.)	2013/03/20		94	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/20		128	%	70 - 130
		1,2-dichloroethane	2013/03/20		NC	%	70 - 130
		1,2-dibromoethane	2013/03/20		85	%	70 - 130
	Spiked Blank	1,4-Difluorobenzene (sur.)	2013/03/20		121	%	70 - 130
	Shiked Digitk	4-BROMOFLUOROBENZENE (sur.)	2013/03/20		113	%	70 - 13
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/20		84	%	70 - 13
		1.2-dichloroethane	2013/03/20		87	%	70 - 130
			2013/03/20		95	%	70 - 130
	Marks and Diamie	1,2-dibromoethane	2013/03/20		103	%	70 - 130
	Method Blank	1,4-Difluorobenzene (sur.)	2013/03/20		83	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2013/03/20		76	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/20	<0.50	70	ug/L	70 - 100
		1,2-dichloroethane		<0.30			
		1,2-dibromoethane	2013/03/20			ug/L %	3
	RPD	1,2-dichloroethane	2013/03/20	NC	101		80 - 12
6670447 GS2	Matrix Spike	Dissolved Lead (Pb)	2013/03/21		104	%	80 - 12
	Spiked Blank	Dissolved Lead (Pb)	2013/03/21	.0.00	103	%	00 - 12
	Method Blank	Dissolved Lead (Pb)	2013/03/21	<0.20		ug/L	•
	RPD	Dissolved Lead (Pb)	2013/03/21	NC		%	2
6672040 CD3	Matrix Spike					24	00 44
	[FW9554-01]	4-BROMOFLUOROBENZENE (sur.)	2013/03/22		104	%	60 - 14
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/22		105	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/22		98	%	60 - 14
		Benzene	2013/03/22		86	%	70 - 13
		Toluene	2013/03/22		84	%	70 - 13
		Ethylbenzene	2013/03/22		90	%	70 - 13
		o-Xylene	2013/03/22		92	%	70 - 13
		m & p-Xylene	2013/03/22		89	%	70 - 13
		Methyl-tert-butylether (MTBE)	2013/03/22		95	%	70 - 13
		(C6-C10)	2013/03/22		94	%	70 - 13
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2013/03/22		103	%	60 - 14
	•	D4-1,2-DICHLOROETHANE (sur.)	2013/03/22		102	%	60 - 14
		D8-TOLUENE (sur.)	2013/03/22		100	%	60 - 14
		Benzene	2013/03/22		86	%	70 - 13
		Toluene	2013/03/22		87	%	70 - 13
		Ethylbenzene	2013/03/22		92	%	70 - 13
		o-Xylene	2013/03/22		94	%	70 - 13
		o Agrono	20.0700724		٠,	. •	



PARSONS

Attention: ADAM WICKMAN Client Project #: 10-1177

P.O. #:

Site Location: 208 ST. ANNE'S ROAD, WINNIPEG, MB

Quality Assurance Report (Continued)

Maxxam Job Number: NB320783

QA/QC			Date				
Batch			Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6672040 CD3	Spiked Blank	m & p-Xylene	2013/03/22		92	%	70 - 130
		Methyl-tert-butylether (MTBE)	2013/03/22		94	%	70 - 130
		(C6-C10)	2013/03/22		98	%	70 - 130
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2013/03/22		103	%	60 - 140
		D4-1,2-DICHLOROETHANE (sur.)	2013/03/22		102	%	60 - 140
		D8-TOLUENE (sur.)	2013/03/22		102	%	60 - 140
		Benzene	2013/03/22	<0.0004		mg/L	
		Toluene	2013/03/22	<0.0004		mg/L	
		Ethylbenzene	2013/03/22	<0.0004		mg/L	
		o-Xylene	2013/03/22	<0.0004		mg/L	
		m & p-Xylene	2013/03/22	<0.0008		mg/L	
		Xylenes (Total)	2013/03/22	<0.0008		mg/L	
		Methyl-tert-butylether (MTBE)	2013/03/22	< 0.004		mg/L	
		F1 (C6-C10) - BTEX	2013/03/22	<0.3		mg/L	
		(C6-C10)	2013/03/22	<0.3		mg/L	
	RPD [FW9553-01]	Benzene	2013/03/22	NC		%	40
	•	Toluene	2013/03/22	NC		%	40
		Ethylbenzene	2013/03/22	NC		%	40
		o-Xylene	2013/03/22	NC		%	40
		m & p-Xylene	2013/03/22	NC		%	40
		Xylenes (Total)	2013/03/22	NC		%	40
		Methyl-tert-butylether (MTBE)	2013/03/22	NC		%	40
		F1 (C6-C10) - BTEX	2013/03/22	NC		%	40
		(C6-C10)	2013/03/22	NC_		%	40

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference,

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.



Validation Signature Page

Maxxam Job #: B320/83			

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

Andy Lu, Data Validation Coordinator

Inely tu

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

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Maxxam Analytics International Corporation o/a Maxxam Analytics, Unit D - 675 Berry Street, Winnipeg, MB, R3H 1A7, Tel: (204) 772-7276, Fax: (204) 772-2386 www.maxxam.ca

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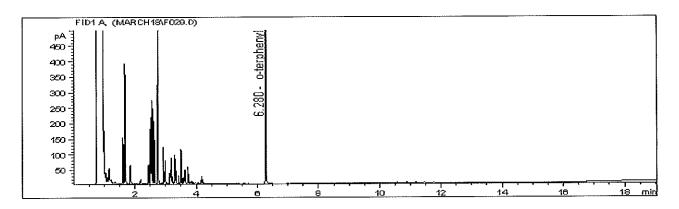
PARSONS

Client Project #: 10-1177

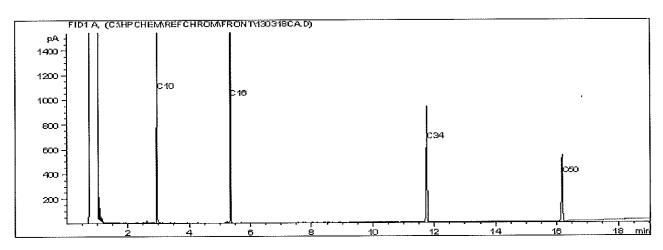
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH7

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8		C22
Varsol:	C8	_	C12	Lubricating Oils:	C20		C40
Rerosene:	C7		C16	Crude Oils:	C3	-	C60+

Page 1 of 1



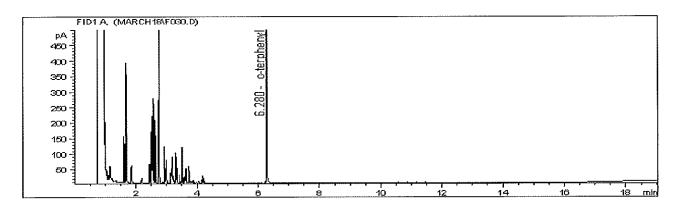
PARSONS

Client Project #: 10-1177

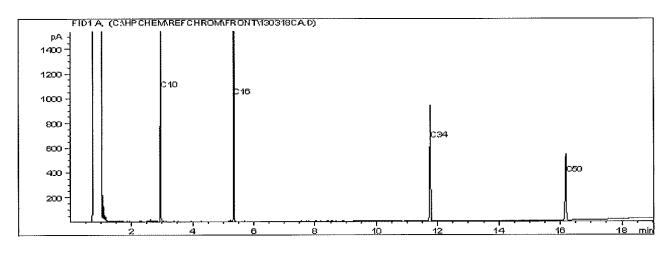
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: DUP-2

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	U4		ULZ
Varsol:	C8	_	C12
Kerosene:	C7	_	C16

Diesel: C8 -Lubricating Oils: C2O -Crude Oils: C3 -

Page 1 of 1

C40



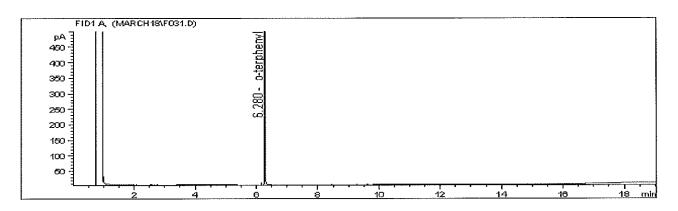
PARSONS

Client Project #: 10-1177

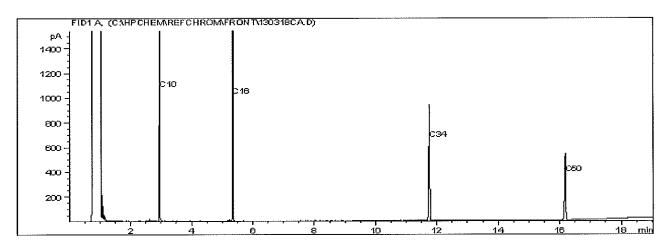
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH9

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	68	_	C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7	•••	C16	Crude Oils:	СЗ		C60+

Page 1 of 1



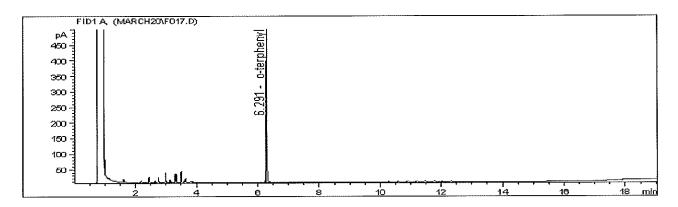
PARSONS

Client Project #: 10-1177

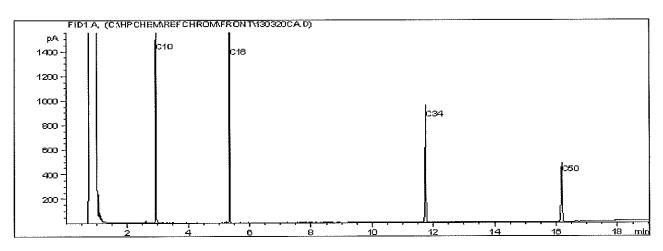
Site Reference: 208 ST. ANNE'S ROAD, WINNIPEG,

Client ID: BH17

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



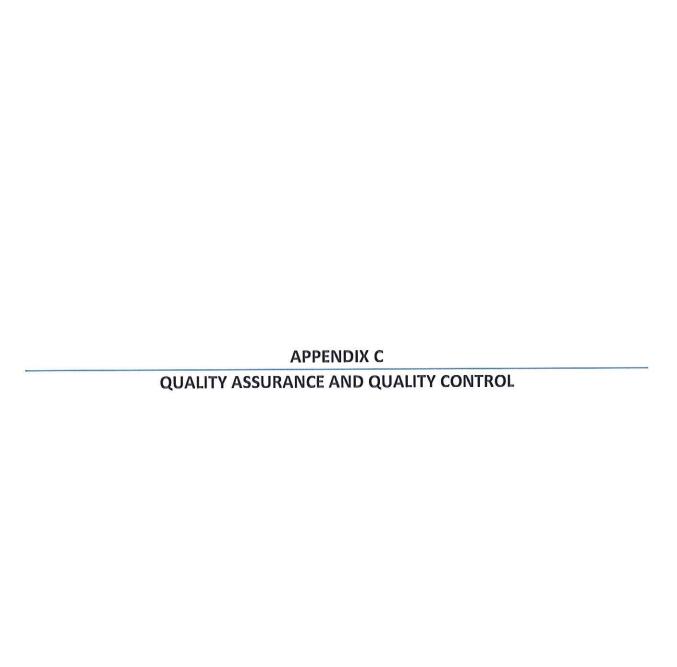
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	_	C12	Diesel:	C8		C22
Varsol:	C8	_	C12	Lubricating Oils:	C20	-	C40
Kerosene:	C7		C16	Crude Oils:	С3		C60+

Page 1 of 1

DATA QUALITY REVIEW CHECKLIST

Consultant: Parsons				Sampling Date: 2	2013/03/15
Location: 208 St. Anne's	s Road, Winnij	peg, MB		Laboratory : _	Maxxam Analytics, Winnipeg
Consultant Project Number: 1	0-1177.100			Sample Subr	nission Number: <u>B320783</u>
Are All Laboratory QC Samples Wi	thin Acceptan	ce Criteria ((Yes, No,	Not Applicable)?	
	Yes	No	NA		Comments
Instrument Surrogate Recovery	103	X	1111	The instrument surrog	ate recoveries for D4-1,2-dichloroethane (144%
Extraction Surrogate Recovery	X			and 148%) are above	the acceptance criteria.
Method Blank Concentration	X			All other lab QC met a	acceptance criteria.
Matrix Duplicate RPD	X			1	
Matrix Spike Recovery	X				
Lab Control Sample Recovery			X		
Are All Field QC Samples Within A Field Blank Concentration Trip Blank Concentration	Yes X X	es, No, Not	Applical NA	ole)? All field QC met alert	Comments limits.
Field Duplicate RPD	X				
Has CoA been signed off (Yes/No)! Has lab warranted all tests were in s Has lab warranted all tests were and Were all samples analyzed within h All volatiles samples methanol extr Is Chain of Custody completed and Were sample temperatures acceptab	statistical controlled to the state of the s	ng SOP's in s/No)?: red, within 4 No)?:	CoA (Ye	(Yes, No or N/A)?:	Yes Yes Yes Yes NA Yes No
Was a Data Quality Waiver (DQW)	issued (Yes, 1	No or N/A)'	?:		No
Date Issued: _				Date of Response:	
Is data considered to be reliable (Yo If answer is "No", describe and pro	es/No)?: vide rationale:	1		Yes	
Data Reviewed by (Print): <u>A</u> Review Date: <u>2</u> Revision Date (if applicable): _	013/03/25		- - -		ed by (Signature): Alpha Maled by (Signature):



QUALITY ASSURANCE AND QUALITY CONTROL DISCUSSION

Lab or field QA/QC issues identified in this report are discussed in Table C-1.

The soil field QA/QC program consisted of nine field duplicate soil samples for BTEX, PHC fractions F1 to F4, 1,2-DBA, 1,2-DCA and lead.

The groundwater field QA/QC program consisted of five field duplicate samples for the analysis of BTEX, PHC fractions F1 and F2, 1,2-DBA, 1,2-DCA and lead; one field duplicate sample for the analysis of selected PAHs; one field duplicate sample for the analysis of selected metals and glycols; two field blank samples for the analysis of BTEX and PHC fraction F1; and, two trip blank samples for the analysis of BTEX and PHC fraction F1.

For the field duplicate samples, evaluations of the QA/QC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits.

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

The designated soil field duplicate RPD alert limits are presented in Table C-2. Consistent with laboratory practices and to permit reliable calculations, an RPD is only calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit. As indicated, all of the RPDs were within alert limits, other than those presented in Table C-1.

The designated groundwater field duplicate RPD alert limits are presented in Tables C-3 to C-5. As indicated, all of the RPDs were within alert limits.

The water field blank and trip blank were compared to the alert limits and are presented in Table C-6. As indicated, all of the results were within the alert limits.

The laboratory QA/QC program consisted of one or more of the following analysis (a) instrument and extraction surrogate recoveries for soil samples that were analyzed, and (b) the analysis of method blank, laboratory duplicate, matrix spike and/or laboratory control samples for the sample analytical batches that were analyzed. The laboratory QA/QC results are presented in the certificates of analysis. As indicated, no laboratory QA/QC issues were identified, other than those presented in Table C-1.

No field or laboratory QA/QC issues were identified that would affect the overall conclusions presented in this report. Overall, the results reported are considered to be reliable.

FIELD AND LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL ISSUES

Maxxam Job#	Lab Sample ID	DQW Number	Sample Name	Matrix	Test Affected	Deviation	Interpretation
BZ34555	DH0748 DH0752	N/A	BH-29-1.1-1.4 BH-29-2.3-2.6	Soil	PAHs	The matrix spike recovery for D10-Benzo(a)pyrene (46%) was below the acceptance criterion.	There is a potential low bias for this parameter, however, the sample analytical results were significantly below the applicable criteria. Therefore it should not materially affect the findings of the assessment.
	DH0622	N/A	DUP-23	Soil	BTEXPHC F1 to F4	The matrix spike recovery for ethylbenzene, m&p-xylene and o-xylene were below the acceptance criteria.	The matrix spike recovery for there is a potential low bias for these parameters; ethylbenzene, m&p-xylene and o-xylene however, the sample analytical results were significantly were below the acceptance criteria. Therefore it should not materially affect the findings of the assessment.
	DH0621 DH0622 DH0623 DH0722 DH0724 DH0724 DH0726 DH0726	N/A	BH-23-2.3-2.6 DUP-23 BH-23-2.9-3.2 BH-23-4.7-5.0 BH-27-1.7-2.0 BH-27-2.3-2.6 BH-28-2.3-2.6 BH-29-1.1-1.4 BH-29-2.3-2.6	Soil	BTEX/PHC F1 to F4	The method blank recovery for D4-1,2-Dichloroethane (147%) was above the acceptance criteria.	There is a potential high bias for this parameter, however, the sample analytical results were significantly below the applicable criteria. Therefore, it should not materially affect the findings of the assessment.
	DH0621	N/A	BH-23-2.3-2.6	Soil	BTEX/PHC F1 to F4	The matrix duplicate RPD for ethylbenzene (57.5%), xylenes (total) (57.8%), m&p-xylene (57.6%), o-xylene (58.3%) and F1 (C6-C10)-BTEX (81.4%) were above the acceptance criteria.	The matrix duplicate RPD for This indicates increased variability in the lab data. The ethylbenzene (57.5%), xylenes (total) sample analytical resluts for both the original sample (57.8%), m&p-xylene (57.6%), o-xylene and lab duplicate were significantly below the current (58.3%) and F1 (C6-C10)-BTEX (81.4%) applicable criteria. Therefore, it should not materially were above the acceptance criteria.

N/A - Not Applicable

Ref. No.: 10-1177.100

FIELD AND LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL ISSUES

N/A - Not Applicable

FIELD AND LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL ISSUES

Interpretation	hours from The 7 day extraction holdtime was not exceeded. In the 7 day Therefore it should not materially affect the findings of the assessment.	or PHC F2 This indicates increased variability in the field data likely due to sample heterogeneity. The sample analytical results for both the original and field duplicate were significantly below the applicable criteria, with the exception of PHC F1, which significantly exceeded criteria in the original. In addition, the lab quality controls meet all acceptance criteria. Therefore, it should not materially affect the findings of the assessment.	acceptable There is a potential that the increase in temperature ached the affected the results of the submitted samples. However, all parameters were below the applicable criteria in all submissions from this sampling date, with the exception of BH-27, which exceeded PHC F2 criterion. Furthermore, BH-27 exceeded PHC F2 criterion. Previous sampling event and all results appear to reflect previous sampling events.	The instrument surrogate recovery for the is a potential high bias in the reported results. d4-1,2-dichloroethane (144% and 148%) However, the VOC results were well below the are above the acceptance criteria. applicable criteria in the sample analyzed; infact, all VOC results were non-detectable. Therefore, this deviation should not affect the interpretation of the results of these samples.	acceptable There is a potential that the increase in temperature ached the affected the results of the submitted samples. However, all parameters were below the applicable criteria in all submissions from this sampling date. Furthermore, results appear to reflect previous sampling events.
Deviation	Sample extracted past 48 hours from receipt of sample but within the 7 day extraction holdtime.	The field duplicate RPD for PHC F2 (104%) was above the alert limit.	Samples were above the acceptable temperature when they reached the laboratory.	The instrument surrogate recovery for d4-1,2-dichloroethane (144% and 148? are above the acceptance criteria.	Samples were above the acceptable temperature when they reached the laboratory.
Test Affected	Volatiles	BTEX/ PHC F1 to F4	NOCs/ Lead	VOCs	BTEX/ PHC F1 to F2/ VOCs/ Lead
Matrix	Soil	Soil	Water	Water	Water
Sample Name	BH-35-0.6-1.2 BH-35-2.4-3.0 BH-35-4.2-4.8 BH-37-0.0-0.6 BH-37-1.8-2.4 BH-37-3.0-3.6 BH-37-4.2-4.8	BH43-1.8-2.4 DUP-43	All Samples Analyzed on CofA	BH7 0UP-2	Ali Samples Analyzed on CofA
DQW Number	N/A	N/A	N/A	NIA	N/A
Lab Sample ID	FS0841 FS0843 FS0845 FS0847 to to FS0850	FS2968 FS2969	FW9465 to FW9468 FW9474 FW9475	FW9549 FW9550	FW9549 to FW9554
Maxxam Job#	B314377		B320765	B320783	

N/A - Not Applicable

Ref. No.: 10-1177.100

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES PETROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-22	RDL	DUP-22 FIELD DUPLICATE BH-22	RDL	Caa	BH-23	RDL	DUP-23 FIELD DUPLICATE BH-23	RDL	Coc	RPD ALERT
Maxxam Sample ID	DH0735		DH0736) 2	DH0621		DH0622		2	LIMITS (%)
Depth (mbgs)	2.3-2.6		2.3-2.6			2.3-2.6		2.3-2.6			
Date Sampled (yyy/min/du) PARAMETERS	2012104120		2012104120			201704170		201704720			
(Ç		0	7077	3	1	Š	1		,
Renzene	3.b	C00.0	0.4 0	0.002	%1.	0.31	0.003	0.23	c00.0	800	<u></u>
Toluene	<0.020	0.02	<0.020	0.02	Š	0.16	0.02	0.084	0.02	Š	100
Ethylbenzene	7.0	0.01	8.2	0.01	16%	7.1	0.01	2.3	0.01	102%	100
Total Xylenes	8.5	0.04	10	0.04	16%	41	0.04	5	0.04	104%	100
Dottol our Budenschool Ed (CE CAM)	130	ţ	6	ţ	79%	030	, ,	73	ç	Ç	7
(OLO LOS) LI STOSIBOSIDADES LI TROPICADES L	3	<u>.</u>	<u>P</u>	*	2	3	-	3	ī)	3
Petroleum Hydrocarbons F2 (>C10 - C16) ^c	8	9	98	5	Š	100	9	90	9	20%	100
Petroleum Hydrocarbons F3 (>C16 - C34) ^d	×10	6	11	9	Š	<10	9	1	9	S	100
Petroleum Hydrocarbons F4 (>C34-C50)	v 410	6	×10	9	Š	13	10	18	5	S	100
1,2-Dibromoethane	<0.030	0.03	<0.030	0.03	Š	<0.040	0.04	<0.020	0.02	NC	100
1,2-Dichforoethane	0.0977	0.002	0.129	0.002	28%	<0.0020	0.002	<0.0020	0.002	Š	100
Lead	7	τ-	#	τ-	%	4.1	+-	5.3	-	S	100

a - Alert limits used for field duplicate samples

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

NC - Not calculated

RDL - Reportable Detection Limit

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilograms (mg/kg) on a dry weight basis

BOLD - Exceeds RPD alert limit

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES PETROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

	2	절	DUP-25	RDL		
			FIELD DUPLICATE			***
			BH-25		RPD	RPD ALERT
Maxxam Sample ID	DH0742		DH0743		ł !	LIMITS (%)
Depth (mbgs)	1,7-2,0		1.7-2.0			
Date Sampled (yyyy/mm/dd)	2012/04/26		2012/04/26			
PARAMETERS						
Benzene	0.62	0.005	€.	0.005	%86	100
Toluene	0.056	0.02	0.091	0.02	NC	100
Ethylbenzene	2.9	0.01	4.2	0.01	37%	100
Total Xylenes	9.6 6	0.04	5.5	0.04	34%	100
down of the description of the d	,	ç	ļ			
Petroleum riyarocarbons F1 (Co - C10)	140	77	170	72	19%	100
Petroleum Hydrocarbons F2 (>C10 - C16) ^c	170	9	88	9	63%	100
Petroleum Hydrocarbons F3 (>C16 - C34) ^d	16	5	13	10	Š	100
Petroleum Hydrocarbons F4 (>C34-C50)	×10	5	۸40	40	Š	100
1,2-Dibromoethane	<0.030	0.03	<0.030	0.03	Ş	100
1,2-Dichloroethane	<0.0020	0.002	<0.0020	0.002	S	190
Lead	8.8	-	9.8	-	11%	100

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction d - PAHs have not been subtracted from the fraction

NC - Not calculated

RDL - Reportable Detection Limit RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilograms (mg/kg) on a dry weight basis BOLD - Exceeds RPD alert limit

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES PETROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

	BH-37 KDL	DUP-31 FIELD DUPLICATE BH-31	d d	RPD	ВН-33	RDL	DUP-33 FIELD DUPLICATE BH-23	RDL	RPD	RPD ALERT
Maxxam Sample IDET5015Depth (mbgs)4.3-4.9Date Sampled (yyyy/mm/dd)2012/10/16	15 .9 0/16	ET5016 4.3-4.9 2012/10/16			ET5071 1.2-1.8 2012/10/16		ET5072 1.2-1.8 2012/10/16			LIMITS (%)"
PARAMETERS	A. CATALOGRAPHICA									
Benzene <0.0050		<0.0050	0.005	Š	0.17	0.005	0.29	0.005	52%	100
	20 0.02	<0.020	0.02	Š	<0.020	0.02	<0.020	0.02	S	100
Ethylbenzene <0.010		<0.010	0.01	ပ္ခ	0.18	0.01	0.26	0.01	36%	100
Total Xylenes <0.040		<0.040	0.04	Š	0:30	0.04	0.49	0.04	48%	100
Petroleum Hydrocarbons F1 (C6 - C10) ^b <10		25	5	Š	#	5	~ 10	5	Š	100
Petroleum Hydrocarbons F2 (>C10 - C16) ^c 72	20	160	20	Š	~ 50	70	\ 20	8	ပ္	100
Petroleum Hydrocarbons F3 (>C16 - C34) ^d <20		37	8	Š	2	8	% 70 70	8	Š	100
Petroleum Hydrocarbons F4 (>C34-C50)		<20	20	Š	₹	8	<20	20	Š	100
1,2-Dibromoethane <0.025	25 0.025	<0.025	0.025	Š	<0.025	0.025	<0.025	0.025	S	100
1,2-Dichloroethane <0.025		<0.025	0.025	S	<0.025	0.025	<0.025	0.025	Š	100
12.7	0.1	1.5	0.1	10%	7.01	0.1	6.40	0.1	%6	100

a - Alert limits used for field duplicate samples

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

NC - Not calculated

RDL - Reportable Detection Limit

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilograms (mg/kg) on a dry weight basis

BOLD - Exceeds RPD alert limit

Ref. No.: 10-1177.100

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES PETROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-36	RDL	DUP-36 FIELD DUPLICATE BH-36	RDL	Caa	BH-38	RDL	DUP-38 FIELD DUPLICATE BH-38	RDL	G	RPD ALERT
Maxxam Sample ID	FS0579		FS0583		1	FS0584		FS0587		ם ב	LIMITS (%)
Depth (mbgs) Date Sampled (vyvy/mm/dd)	0.6-1.2		5.4-6.0			0.6-1.2		3.0-3.8			
PARAMETERS			T THINK THE TANK THE								
Benzene	<0.0050	0.005	<0.0050	0.005	NC	0.0093	0.005	<0.0050	0.005	Š	100
Toluene	<0.020	0.02	<0.020	0.02	S	<0.020	0.02	<0.020	0.02	S	100
Ethylbenzene	<0.010	0.01	<0.010	0.01	S	0.030	0.01	<0.010	0.01	S	100
Total Xylenes	<0.040	0.04	<0.040	0.04	Š	<0.040	0.04	<0.040	0.04	N	100
Petroleum Hydrocarbons F1 (C6 - C10) ^b	70	10	×10	9	Š	15	10	×10	9	S	100
Petroleum Hydrocarbons F2 (>C10 - C16) ^c	۸10	10	<10	10	S	۸10	9	70	10	S	100
Petroleum Hydrocarbons F3 (>C16 - C34) ^d	۷10	10	<10 <	10	SC	<10	9	23	5	Š	100
Petroleum Hydrocarbons F4 (>C34-C50)	V10	10	<10	9	S	<10	9	۲٠ ۲0	9	2	100
1,2-Dibromoethane	<0.025	0.025	<0.025	0.025	Š	<0.025	0.025	<0.025	0.025	Š	100
1,2-Dichloroethane	<0.025	0.025	<0.025	0.025	S	<0.025	0.025	<0.025	0.025	ပ္	100
read	15.1	0.1	13.8	0.1	%6	14.4	0.1	14.5	0.1	%	100

a - Alert limits used for field duplicate samples

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

NC - Not calculated

RDL - Reportable Detection Limit

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)

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Results for all parameters are reported in milligrams per kilograms (mg/kg) on a dry weight basis

BOLD - Exceeds RPD alert limit

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES PETROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVENGERS

SAMPLE LOCATIONS	BH-43	RDL	DUP-43 FIELD	ZOF.		BH-44	RDL	DUP-44 FIFI D	RDL		
			DUPLICATE BH-43		RPD			DUPLICATE BH-44		GAS	RPD ALERT
Maxxam Sample ID	FS2968	•	FS2969			FS2974		FS2975			LIMITS (%)
Depth (mbgs)	1.8-2.4		1.8-2.4			1.8-2.4		1.8-2.4			
Date Sampled (yyyy/mm/dd)	2013/02/22		2013/02/22			2013/02/22		2013/02/22			
PARAMETERS											
Benzene	0.97	0.005	2.5	0.005	%88	6.5	0.005	5.3	0.005	20%	100
Toluene	2.2	0.02	4.9	0.02	76%	28	0.02	20	0.02	33%	100
Ethylbenzene	20	0.01	23	0.01	10%	19	0.01	15	0.01	24%	100
Total Xylenes	11	0.04	100	0.04	76%	110	0.04	81	0.04	30%	100
Petroleum Hydrocarbons F1 (C6 - C10) ^b	840	5	550	10	42%	550	10	460	10	18%	100
Petroleum Hydrocarbons F2 (>C10 - C16)°	260	9	82	10	104%	130	10	170	9	27%	100
Petroleum Hydrocarbons F3 (>C16 - C34) ^d	17	2	24	10	Š	×10	\$	<10	9	Š	100
Petroleum Hydrocarbons F4 (>C34-C50)	۷۲۰	9	×10	9	SC	×10	10	V10	10	Š	100
1,2-Dibromoethane	<0.025	0.025	<0.025	0.025	SC	<0.025	0.025	<0.025	0.025	SC	100
1,2-Dichloroethane	<0.025	0.025	<0.025	0.025	Š	<0.025	0.025	<0.025	0.025	NC	100
Lead	15.5	0.1	13.7	0.1	12%	6.87	0.1	6.75	0.1	2%	100

a - Alert limits used for field duplicate samples

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

NC - Not calculated

RDL - Reportable Detection Limit

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)

mbgs - metres below ground surface

Results for all parameters are reported in milligrams per kilograms (mg/kg) on a dry weight basis

BOLD - Exceeds RPD alert limit

208 St. Anne's Road, Winnipeg, Manitoba

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES PETROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVANGERS

SAMPLE LOCATIONS	BHS	RDL.	DUP-2 FIELD	RDL		BHS	RDL	DUP-1	RDL		
			DUPLICATE BH5		RPD			DUPLICATE BH5		RPD	RPD ALERT
Maxxam Sample ID	DR8266		DR8267			FW9341		FW9343			(87) STIME
Date Sampled (yyyy/mm/dd)	2012/06/13		2012/06/13			2013/03/15		2013/03/15			
PARAMETERS											
Benzene	0.440	0.0004	0.360	0.0004	20%	0.76	0.0004	0.71	0.0004	7%	80
Toluene	0.100	0.0004	0.081	0.0004	21%	0.12	0.0004	0.12	0.0004	%0	80
Ethylbenzene	2.000	0.004	1.800	0.004	11%	2.1	0.004	2.1	0.004	%0	80
Total Xylenes	11.000	0.008	9.800	0.008	12%	7	0.008	12	0.008	%6	80
Petroleum Hydrocarbons F1 (C6 - C10) ^b	8.800	~	13.000	•	39%	5.3	0.3	2.5	0.3	72%	8
Petroleum Hydrocarbons F2 (>C10 - C16) ^c	2.1	0.1	2.1	0.1	%0	2.9	0.15	2.9	0.15	%0	80
1,2-Dibromoethane	<0.00050	0.0005	<0.00050	0.0005	S	<0.00020	0.0002	<0.00020	0.0002	Š	08
1,2-Dichloroethane	0.0019	0.0005	0.0015	0.0005	NC NC	<0.031	0.031	<0.027	0.027	Š	80
Dissolved Lead (Pb)	0.00059	0.0002	0.00049	0.0002	NC	0.00061	0.0002	0.00061	0.0002	NC	20

a - Alert limits used for field duplicate samples b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

NC - Not calculated

RDL - Reportable Detection Limit

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)

Results for all parameters are reported in milligrams per litre (mg/L)

BOLD - Exceeds RPD alert limit

208 St. Anne's Road, Winnipeg, Manitoba

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVANGERS

SAMPLE LOCATIONS Maxxam Sample ID	BH7 DR8264	RDL	DUP-1 FIELD DUPLICATE BH7 DR8265	RDL	RPD	BH7 FW9549	RDL	DUP-2 FIELD DUPLICATE BH7 FW9550	RDL	RPD	RPD ALERT LIMITS (%) ³
Date Sampled (yyyy/mm/dd) PARAMETERS	2012/06/13		2012/06/13			2013/03/15		2013/03/15			
Benzene	4.800	0.004	4.900	0.004	2%	9.6	0.004	3.4	0.004	%9	80
Toluene	0.200	0.0004	0.230	0.0004	14%	0.069	0.0004	0.072	0.0004	4%	80
Ethylbenzene	0.290	0.0004	0.290	0.0004	%0	0.56	0.0004	0.58	0.0004	4%	80
Total Xylenes	2.300	0.0008	2.400	0.0008	4%	2.0	0.0008	2.1	0.0008	2%	80
Petroleum Hydrocarbons F1 (C6 - C10) ^b	4.000	_	6.100	-	Š	3.6	0.3	3.8	0.3	2%	8
Petroleum Hydrocarbons F2 (>C10 - C16)°	4.3	0.1	23.	0.1	32%	2.7	0.15	2.9	0.15	%/	80
1,2-Dibromoethane	<0.00050	0.0005	<0.00050	0.0005	SC	<0.00020	0.0002	<0.00020	0.0002	ñ	80
1,2-Dichloroethane	0.024	0.0005	0.027	0.0005	12%	<0.086	0.086	<0.00050	0.0005	Š	80
Dissolved Lead (Pb)	<0.00020	0.0002	<0.00020	0.0002	SC	<0.00020	0.0002	<0.00020	0.0002	Ö	20

a - Alert limits used for field duplicate samples

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

NC - Not calculated

RDL - Reportable Detection Limit

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)

Results for all parameters are reported in milligrams per litre (mg/L)

BOLD - Exceeds RPD alert limit

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, LEAD AND LEAD SCAVANGERS

SAMPLE LOCATIONS	BH-21	RDL	DUP-1	RDL.		
			FIELD DUPLICATE BH-21		RPD	RPD ALERT
Maxxam Sample ID	DZ4280		DZ4281			(%) S III
Date Sampled (yyyy/mm/dd)	2012/07/19		2012/07/19			
PARAMETERS						
Benzene	0.0008	0.0004	0.0015	0.0004	Š	80
Toluene	<0.0004	0.0004	0.0006	0.0004	Š	80
Ethylbenzene	0.0013	0.0004	0.0044	0.0004	Š	80
Total Xylenes	<0.0008	0.0008	<0.0008	0.0008	Š	80
Petroleum Hydronarbons E1 (C6 - C10) ^b	, ,	6	,	,	٢	
(ala aa) i caramanafii imanana i	?	3	?	?	<u>}</u>	3
Petroleum Hydrocarbons F2 (>C10 - C16)°	0.25	0.15	<0.15	0.15	S	8
1,2-Dibromoethane	<0.00020	0.0002	<0.00020	0.0002	S	80
1,2-Dichloroethane	<0.0018	0.0018	<0.0028	0.0028	S	80
Dissolved Lead (Pb)	<0.00020	0.0002	<0.00020	0.0002	Š	50

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

NC - Not calculated

RDL - Reportable Detection Limit

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)

Results for all parameters are reported in milligrams per litre (mg/L)

BOLD - Exceeds RPD alert limit

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES SELECTED POLYCYCLIC AROMATIC HYDROCARBONS

SAMPLE LOCATIONS	BH-21	RDL	DUP-1	RDL		
			FIELD			
			DUPLICATE		!	RPD ALERT
			BH-21		RPD	I IMITS (%)
Maxxam Sample ID	DZ4280		DZ4281			(ev) 2
Date Sampled (yyyy/mm/dd)	2012/07/19		2012/07/19			
PARAMETERS			The state of the s			
:						
Acenaphthene	<0.000080	0.00008	<0.00016	0.00016	2	8
Anthracene	<0.000010	0.00001	<0.000010	0.00001	S	80
Benzo(a)anthracene	<0.000010	0.00001	<0.000010	0.00001	Š	80
Benzo(a)Pyrene	<0.0000090	0.000000	<0.0000090	0.00000	Š	88
Fluoranthene	<0.000020	0.00002	<0.000020	0.00002	Š	8
Fluorene	<0.000050	0.00005	<0.000078	0.000078	S	88
Naphthalene	<0.00030	0.0003	<0.00046	0.00046	S	8
Phenanthrene	<0.000050	0.00005	<0.000050	0.00005	S	88
Pyrene	<0.000020	0.00002	<0.000020	0.00002	SC	80

NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)

Results for all parameters are reported in milligrams per litre (mg/L) BOLD - Exceeds RPD alert limit

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES SELECTED METALS AND SELECTED GLYCOLS

SAMPLE LOCATIONS	BH-21	RDI.	DUP-1	RDL		
			FIELD			
			DUPLICATE		ć	RPD ALERT
			BH-21		7 7	LIMITS (%)
Maxxam Sample ID	DZ4280		DZ4281			
Date Sampled (yyyy/mm/dd)	2012/07/19		2012/07/19			
PARAMETERS						
Dissolved Arsenic (As)	0.00204	0,0001	0.00250	0.0001	20%	20
Dissolved Barium (Ba)	0.155	0.001	0.214	0.001	32%	50
Dissolved Chromium (Cr)	<0.0010	0.001	<0.0010	0.001	SC	50
Dissolved Copper (Cu)	0.00353	0.0002	0.00267	0.0002	28%	50
Dissolved Zinc (Zn)	0.0079	0.005	0,0062	0.005	S	50
		•				
Ethylene Glycol	×10	5	~10	5	SC	80
Propylene Glycol	<10	10	<10	10	S	80

NC - Not calculated

RDL - Reportable Detection Limit

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)

Results for all parameters are reported in milligrams per litre (mg/L.)

BOLD - Exceeds RPD alert limit

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	RDL	FIELD BLANK-1		FIELD BLANK-1	
Maxxam Sample ID Date Sampled (vvvv/mm/dd)		DR8268 2012/06/13	EXCEEDS ALERT LIMIT (yes/no)	FW9553	EXCEEDS ALERT LIMIT (yes/no)
PARAMETERS					
Benzene	0.0004	<0.00040	8	<0.0004	N _O
Toluene	0.0004	<0.00040	8	<0.0004	8
Ethylbenzene	0.0004	<0.00040	SN S	<0.0004	2
Total Xylenes	0.0008	<0.00080	No	<0.0008	o Z
Petroleum Hydrocarbons F1 (C6 - C10) ^a	0.1	<0.100	Š	<0.3	8

a - BTEX have been subtracted from the fraction RDL - Reportable detection limit

Results for all parameters are reported in milligrams per litre (mg/L) $\underline{801.D}$. Exceeds alert limit

Note - Alert limits for field blanks and trip blanks are 5x RDL for BTEX; 2x RDL for petroleum hydrocarbons fractions F1

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	RDL	TRIP BLANK-1		TRIP BLANK-1	
			EXCEEDS ALERT LIMIT		EXCEEDS ALERT LIMIT
Maxxam Sample ID		DR8269	(yes/no)	FW9554	(hes/no)
Date Sampled (yyyy/mm/dd)		2012/06/13		2013/03/15	
PARAMETERS					
Benzene	0.0004	<0.00040	S S	<0.0004	N _O
Toluene	0.0004	<0.00040	Š	<0.0004	N _O
Ethylbenzene	0.0004	<0.00040	2	<0.0004	No
Total Xylenes	0.0008	<0.00080	£	<0.0008	o _N
Petroleum Hydrocarbons F1 (C6 - C10) ^a	0.1	<0.100	Š	<0.3	N N

a - BTEX have been subtracted from the fraction RDL - Reportable detection limit

Results for all parameters are reported in milligrams per litre (mg/L) \underline{BOLD} . Exceeds alert limit

Note - Alert limits for field blanks and trip blanks are 5x RDL for BTEX; 2x RDL for petroleum hydrocarbons fractions F1