



PARRISH & HEIMBECKER TRANSCONA SITE

70 Roderick Street, RM of Springfield, Manitoba

Remediation Plan

June 15, 2021



Manitoba Conservation and Climate
Environmental Approvals
1007 Century Street
Winnipeg, Manitoba
R3H 0W4

Attention: Warren Rospad
Contaminated Sites Program Specialist

*Remediation Plan – 70 Roderick Street, Rural Municipality (RM) of Springfield,
Manitoba*

Dillon Consulting Limited (Dillon) is pleased to submit the following Remediation Plan (RP) for the excavation of polycyclic aromatic hydrocarbons (PAHs) and metal impacted soil from 70 Roderick Street in the R.M. of Springfield, Manitoba. This RP provides a summary of previous assessment work, proposed procedures and methods, target remediation criteria, the destination of material for treatment and proposed project schedule.

Sincerely,

DILLON CONSULTING LIMITED

A handwritten signature in black ink, appearing to read "Shane Chapman", is written over a light blue horizontal line.

Shane Chapman, C.E.T.
Project Manager

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Background

Dillon Consulting Limited (Dillon) has been retained by Tervita Corporation (Tervita) on behalf of Parrish & Heimbecker (P&H) to assist with the environmental closure of the property located at 70 Roderick Street property located in the R.M. of Springfield, Manitoba (the “site”), also referred to as the Transcona Site. The property stores, transfers and treats agricultural grains and seeds. P&H owns the site with the approximate site boundaries shown on Figure 1 (appended).

Dillon conducted a Phase II Environmental Site Assessment (ESA) in 2020. The Phase II ESA was conducted based on the results of Dillon’s Phase I ESA which identified the following areas of potential environmental concern (APECs) which are highlighted in the Figures on Dillon’s Phase II ESA appended to this report:

- A laydown area was identified in the southeast portion of the site that contained several surface stains, timber storage and an above ground diesel storage tank;
- The site is in close proximity to General Scrap’s Auto Wreckage Facility which is adjacent to the west of the site; and
- The site is in close proximity to Canadian Pacific Railway’s North Transcona Yard which is directly south of the site and listed as an impacted site by Manitoba Conservation and Climate (MCC).

Contaminants of potential concern were selected based on a review of Material Safety Data Sheets (MSDS) available for chemicals used on-site and indicators of potential products that may have been used historically on the site. In general, soil and water samples were analyzed for benzene, toluene, ethylbenzenes and xylenes (BTEX), petroleum hydrocarbons (PHCs) F1 to F4, polycyclic aromatic hydrocarbons (PAHs), routine parameters, pesticides and metals.

Dillon’s Phase II ESA included advancing fifteen (15) boreholes at the site to address the identified APECs. The boreholes were advanced to depths of up to 6.1 metres below grade surface (mbgs). Tier 1 assessment guidelines for an industrial land use were used as comparison as the site contains two (2) groundwater wells which are used to supply water for the maintenance and washroom facilities. Dillon notes there are no potable drinking water wells on-site and the assessment did not indicate the potential presence of potable drinking water wells within 250 metres (m) from the site. However, the RM of Springfield is known to use groundwater for potable drinking water.

As part of the Phase II ESA drilling it was noted that various fill materials, concrete and wood debris was observed below ground within the laydown area. The results of the Phase II ESA indicated that shallow soil samples collected in or surrounding the laydown area were noted to have soil exceedances of PHCs, PAHs and metals in soil. It was noted that although these analyte concentrations were not observed within any of the groundwater samples, monitoring wells were not installed directly within the vicinity due to shallow auger refusal within the laydown area.

Manganese and uranium concentrations above applicable guidelines were observed within all groundwater samples analyzed. These concentrations are not anticipated to be due to contaminants of potential concern found on site and are assumed to be naturally occurring.

Further detail on the results are included in Dillon's Phase II ESA appended to this report in Appendix A.

2.0

Development of Soil Remediation Criteria

The assessment criteria selected for comparison of analytical data results for the site are referenced and described in more detail below:

- Soil:
 - Canadian Council of Ministers of the Environment (CCME). 1999, updated 2016 Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health; and
 - CCME. 2001, updated 2008. Canada Wide Standards (CWS) for PHCs in Soil.

The CCME task groups were established to develop the Canadian Environmental Quality Guidelines (CEQGs) and CWS for PHCs, which are nationally endorsed, science-based goals for the quality of atmospheric, aquatic and terrestrial ecosystems.

The CWS for PHCs in soil have been established pursuant to the 1998 Canada wide Accord on Environmental Harmonization of the CCME. The CWS for PHCs are remedial standards for contaminated soil and subsoil based on the same four land uses as the CEQGs, as well as soil texture (coarse or fine-grained). The PHC properties differ in relation to the size of the PHC molecule. Therefore, the various PHCs have been grouped into four (4) size fractions to effectively manage the risk they pose to environmental and human health. The fractions refer to the equivalent normal straight-chain hydrocarbon boiling point ranges and are subdivided as follows: Fraction 1 (C6 to C10), Fraction 2 (>C10 to C16), Fraction 3 (>C16 to C34) and Fraction 4 (C35+).

The CCME CEQGs provide for the protection of environmental and human health. Detailed fact sheets published by the CCME for various compounds provide brief summaries of the parameter's chemical and physical properties, production and use in Canada, fate and behaviour in the environment, toxic effects and a description of how the guidelines have been developed.

The next sections highlight the applicable exposure pathways based on land use, predominant soil texture and soil and groundwater receptors. Pathway elimination was conducted in accordance with CCME and did not include the adjustment of parameters or corresponding calculations of the guidelines.

2.1

Contaminants of Potential Concern

The contaminants of potential concern selected were based on a review of MSDS available for the chemicals used on-site and indicators of potential products that may have been used historically on the site. In general, soil and water samples were analyzed for BTEX, PHC F1 to F4, PAHs, pesticides, routine parameters and metals. These indicator parameters were selected as they are present in the chemicals used on-site and have applicable soil and/or groundwater criteria available to evaluate the potential environmental concern.

2.2 Land Use and Soil Texture

The selected CCME CEQGs were based on the land use at the subject site. Land use is assigned according to the following categories: Industrial, Commercial, Residential/Parkland and Agricultural. According to available R.M. of Springfield zoning maps the area is zoned as “MG – Industrial General” under the Industrial zones, indicating that the site is most suitable for the industrial land use and is anticipated to remain for the foreseeable future.

The CCME guidelines for hydrocarbons are dependent on soil texture. CCME defines a coarse-grained soil as having a median grain size of greater than 75 µm and fine-grained soil as having a media grain size of less than 75 µm. Based on visual observations of the soil during Dillon’s investigation and confirmation through laboratory grain size analysis, the soil encountered at the site is considered to be fine-grained. As such, criteria specific to fine-grained texture have been selected.

2.3 Exposure Pathways

A brief overview of the potential receptors that may be applicable to the site and the rationale for selection or pathway elimination in soil are discussed in Table 2-1 below.

Table 2-1: Exposure Pathway Summary Table

Exposure Pathway	Applicability	Rationale
Human Health Exposure Pathways		
Direct Contact	Yes	Areas of the site are accessible to the workers and the public and therefore exposure to the public is a potential.
Vapour Inhalation	Yes	The project area currently has several buildings on-site or adjacent to the site and it is expected that in the foreseeable future buildings will remain on-site.
Potable Groundwater	Risk Management Approach	The site contains two (2) groundwater wells which are used to supply water for the maintenance and washroom facilities. There are no potable drinking water wells on-site. The Phase I ESA (Dillon, 2020) did not indicate the presence of potable drinking wells within 250 m from the site. However, the RM of Springfield is known to use groundwater for potable drinking water. A risk management approach is suggested as a remedial option for the potable groundwater pathway as discussed in Section Error! Reference source not found..
Ecological Health Exposure Pathways		
Ecological Soil Contact	Yes	Portions of the surface material at the site had grass, topsoil, gravel surface and therefore plants and terrestrial invertebrates present in the soil are applicable.

Exposure Pathway	Applicability	Rationale
Groundwater Check – Livestock and Irrigation	No	The Phase I ESA (Dillon, 2020) indicated no potential presence of livestock and irrigation water wells within 250 m from the site.
Groundwater Check – Aquatic Life	No	The nearest surface water body is the Harborview Recreational Complex Retention Pond located 0.5 kilometres (km) to the north of the subject site. The protection of aquatic life exposure pathway addresses contaminants moving laterally in groundwater and being discharged into a downgradient surface water body. As the distance to the nearest downgradient surface water body increases, the likelihood of adverse impacts on the aquatic life there decreases. For purposes of developing generic guidelines, it is assumed that the surface water body is located 10 m away from the contaminated groundwater. As concentrations for the selected parameters were observed to be below the applicable Tier 1 criteria that is protective of this pathway in groundwater monitoring wells downgradient from the impacted soil, this exposure pathway is not present at this site.
Off-Site Migration Check	No	The exposure scenario used for deriving the industrial land use soil quality guidelines accommodates the potential movement of remediated soil from an industrial property to a more sensitive adjacent land use, such as commercial, residential/parkland or agricultural. As the adjacent land uses are industrial, this check is not required.
Management Limits	Yes	While this criteria is generally more protective of more sensitive land uses, it also requires measurable ambient background concentrations that are indicative of elevated concentrations above the management limit criteria.

The most stringent of the applicable guidelines presented above was used as the selected guidelines for the site and are presented in the appended soil and groundwater analytical data tables.

3.0 Remediation Plan

3.1 Risk Management Approach

As per the Phase II ESA investigation the site contains two (2) groundwater wells which are used to supply water for the maintenance and washroom facilities. There are no potable drinking water wells on-site. The Phase I ESA (Dillon, 2020) did not indicate the presence of potable drinking wells within 250 m from the site. However, the RM of Springfield is known to use groundwater for potable drinking water.

A review of nearby wells in the Transcona and RM of Springfield area (greater than 250 m) from the site indicate well screen depths of greater than 20 m and the presence of a confining layer. Although the RM of Springfield is known to use groundwater for potable drinking water, the perched groundwater at the site is not anticipated to be the same aquifer as the one potentially used for drinking water at distances greater than 250 m from the site.

Depth to groundwater on site ranged from 0.69 metres below ground level (mbgl) to 5.5 mbgl. Groundwater analytical concentrations remained below potable drinking water guidelines for PHCs and PAHs. Metal parameters manganese and uranium concentrations above applicable guidelines were observed within all groundwater samples analyzed. These concentrations are not anticipated to be due to contaminants of potential concerns found on site and are assumed to be naturally occurring.

For the purpose of the remediation, the target remediation criteria is proposed to exclude the potable drinking water criteria due to: the anticipated confining layer and distances to potable groundwater sources off-site and the on-site evidence demonstrating that the concentrations in soil are not impacted nearby and downgradient groundwater. The soil exceedances remaining on-site with the exclusion of the potable groundwater pathway (as well as the potential receptor) that are anticipated to be included in the remediation program include:

- PAH parameter B[a]P Total Potency equivalents (human health direct contact guideline of 5.3 mg/kg) at the following location:
 - BH20-03 at a depth of 0.9 m (with a concentration of 18 mg/kg).
- PAH parameter benzo(a)pyrene (interim soil quality guideline of 1.4 mg/kg) at the following locations:
 - BH20-03 at a depth of 0.9 m with a concentration of 12 mg/kg; and
 - BH20-04 at a depth of 2.1 m with a concentration of 2 mg/kg.
- PAH parameter benzo(b+)fluoranthene (interim soil quality guideline of 10 mg/kg) at the following locations:
 - BH20-02 at a depth of 0.9 m with a concentration of 18 mg/kg).
- PAH parameter phenanthrene (interim soil quality guideline of 50 mg/kg) at the following location:

- BH20-03 at a depth of 0.9 m with a concentration of 69 mg/kg.
- Routine Parameter electrical conductivity (soil quality guideline of 4000 $\mu\text{S}/\text{cm}$) at the following location:
 - MW20-02 at a depth of 0.75 m with a concentration of 7500 $\mu\text{S}/\text{cm}$.
- Routine Parameter pH (soil quality guideline of 6-8) at the following location:
 - MW20-02 at a depth of 0.75 m with a concentration of 8.17.
- Metal parameter arsenic (human soil ingestion guideline of 12 mg/kg) at the following location:
 - BH20-02 at a depth of 0.75 m with a concentration of 16 mg/kg.
- Metal parameter copper (ecological soil contact guideline of 91 mg/kg) at the following locations:
 - BH20-02 at a depth of 0.75 m with a concentration of 370 mg/kg;
 - BH20-07 at a depth of 0.3 m with a concentration of 930 mg/kg; and
 - MW20-03 at a depth of 0.6 m with a concentration of 230 mg/kg.
- Metal parameter nickel (ecological soil contact guideline of 89 mg/kg) at the following locations:
 - BH20-02 at a depth of 0.75 m with a concentration of 190 mg/kg; and
 - MW20-03 at a depth of 0.6 m with a concentration of 98 mg/kg.
- Zinc (ecological soil contact guideline of 450 mg/kg) at the following locations:
 - BH20-02 at a depth of 0.75 m with a concentration of 3500 mg/kg;
 - BH20-07 at a depth of 0.3 m with a concentration of 990 mg/kg; and
 - MW20-03 at a depth of 0.6 m with a concentration of 2200 mg/kg.

As the future intended land use at the site is expected to remain as industrial, it is not expected that any residential receptors will be present on the site. Removal of the top 0.3 m of soil on-site in the impacted areas and backfilling with clean fill is anticipated to remove exposure with direct and incidental exposure to the impacts present (ingestion, dermal absorption, inhalation of suspended particulate matter) for human receptors and ecological receptors (direct contact with soil invertebrates, plants and indirect contact with birds and small animals). It is noted that the area is currently a laydown area and is gravelled and it is not anticipated to be suitable landscape for soil invertebrates, plants, birds, small mammals or large deep rooted trees.

3.2 Remedial Excavation

The RP is based on the assessment results of the Dillon Phase II ESA and the Risk Management Approach discussed in Section 3.1, above. The proposed shallow remedial excavations in the areas of impacts are identified on Figure 2 (appended). The excavations will be backfilled and re-graded with material designated as non-impacted. In the process the monitoring wells MW20-4, MW20-03 and MW20-02 will be decommissioned with bentonite and excavated. The impacted material will be transported by Tervita and is anticipated to go to MidCanada Environmental Services in Ile des Chenes, Manitoba for soil treatment. Based on the laboratory analytical results an estimated 530 m³ of material will be removed with an approximate depth of impacts of 0.3 metres below ground surface (mbgs). Due to the surficial impacts encountered at the site, it is assumed that groundwater will not be encountered during the excavations. Once Tervita reaches the extents of the excavation, Dillon will collect soil samples at regular

depth and length intervals across the excavation for field-screening and laboratory analysis. Based on the Risk Management Approach residual concentrations are anticipated to remain; however, will be mitigated by the placement of clean non-impacted fill across the area. Discrete soil samples will be submitted from the extents of the excavations.

Dillon will compile the results of the remediation program in a closure report detailing the methodology and results of the confirmatory sampling. The report will include complete analytical data sheets and a site plan showing the limits of the remedial excavation as well as closure sample locations.

A summary of the proposed RP is included in Table 3-1 below:

Table 3-1: Remediation Plan Summary

Remediation Plan	Description
Proposed Remediation Method	Remedial Excavation
Target Remediation Criteria	CWS for PHCs and CCME CEQGs
Quantities of Contaminated Material	Estimated 530 m ³ of material
Approximate Number of Confirmatory Samples	Approximately fifty (50) samples for metal parameters, BTEX, PHC F1 to F4 and PAHs
Off-Site Soil Treatment	Mid Canada Environmental, Ile des Chenes, Manitoba
Schedule – Remedial Activities	Week of August 17 to 30, 2021
Schedule – Closure Report	October 2021

4.0

Closure

This report has been prepared exclusively for the purposes, project and site location outlined in the plan. The plan is based on information provided to, or obtained by Dillon as indicated in the plan, and applies solely to site conditions and the regulatory and planning frameworks existing at the time of the site investigation. Although Dillon conducted a reasonable investigation, the investigation was by no means exhaustive. Rather, Dillon's findings represent a reasonable review of available information within an established work scope and schedule.

This report was prepared by Dillon for the sole benefit of Tervita Corporation and reflects Dillon's best judgment given the information available at the time of the report preparation. Any use which a third party makes of this plan, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this plan.

We trust that the information provided herein is satisfactory for your present requirements. If you have any questions or concerns, please do not hesitate to contact the undersigned.

Yours truly,

DILLON CONSULTING LIMITED



Shane Chapman, C.E.T.
Project Manager



Vanessa Krahn, M. Sc., P. Eng.
Associate

MJT:bg

Our file: 20-3725

Figures



Tervita Corporation
Parrish and Heimbecker
Remediation Plan

Site Plan
FIGURE 1

Legend

- Monitoring Well
- Borehole
- Approximate Property line
- Timber Pile
- Used Oil Storage
- Diesel AST
- Office Buildings

0 12.5 25 50 Meters

SCALE 1:1000



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: MJT
MAP CHECKED BY: STC
MAP PROJECTION: NAD 1983 UTM Zone 14N

FILE LOCATION: \\DILLON.CA\DILLON_DFS\LONDON\LONDON CAD\GIS\VISUAL COMMUNICATIONS\DIMXD TEMPLATES\BEIGE - 11X17 LANDSCAPE - LEGEND RIGHT.MXD



PROJECT: 20-3725
STATUS: DRAFT
01/20/2021



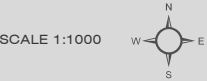
Tervita Corporation
Parrish and Heimbecker
Remediation Plan

Excavation Plan
FIGURE 2

Legend

-  Test Pit
-  Monitoring Well
-  Borehole
-  Approximate Property line
-  South Excavation
-  Timber Pile Excavation
-  Lay Down Excavation
-  Timber Pile
-  Used Oil Storage
-  Diesel AST
-  Office Buildings

0 12.5 25 50 Meters



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: MJT
MAP CHECKED BY: STC
MAP PROJECTION: NAD 1983 UTM Zone 14N

FILE LOCATION: \\DILLON.CA\DILLON_DFS\LONDON\LONDON CAD\GIS\
VISUAL COMMUNICATIONS\DIMXD TEMPLATES\
BEIGE - 11X17 LANDSCAPE - LEGEND RIGHT.MXD



PROJECT: 20-3725
STATUS: DRAFT
01/20/2021

Appendix A

Previous Environmental Assessments



PARRISH & HEIMBECKER TRANSCONA SITE

Phase II Environmental Site Assessment

70 Roderick Street, Rural Municipality of Springfield, Manitoba

June 14, 2021



Parrish & Heimbecker Limited
1400-201 Portage Avenue
Winnipeg, Manitoba
R3B 3K6

Attention: Mr. Zachary Harrison
Project Engineer

*Phase II Environmental Site Assessment – Transcona Seed Treatment Facility
Rural Municipality of Springfield, Manitoba*

Dillon Consulting Limited (Dillon) is pleased to provide Parrish & Heimbecker with the attached Phase II Environmental Site Assessment (ESA) at the Transcona Seed Treatment Facility located at 70 Roderick Street in the Rural Municipality (RM) of Springfield, Manitoba.

If you have any questions or comments regarding this submission, please contact Shane Chapman at (204) 453-2301, ext. 4029 or by email at schapman@dillon.ca.

Sincerely,

DILLON CONSULTING LIMITED

A handwritten signature in black ink, appearing to read "Shane", is positioned above the printed name and title of the signatory.

Shane Chapman, C.E.T.
Project Manager

STC:bg

Our file: 20-3725

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Table 2.2: Petroleum Hydrocarbon Soil Analysis

Table 2.3: Metals Soil Analysis

Table 2.4: Polycyclic Aromatic Hydrocarbon Soil Analysis

Table 2.5: Pesticide Soil Analysis

Table 3.1: Routine Groundwater Analysis

Table 3.2: Petroleum Hydrocarbon Groundwater Analysis

Table 3.3: Metals Groundwater Analysis

Table 3.4: Polycyclic Aromatic Hydrocarbon Groundwater Analysis

Table 3.5: Pesticide Groundwater Analysis

Appendices

A Borehole Logs

B Laboratory Certificates of Analysis

References

Canadian Standards Association. (2000 Revised 2018). *Phase II Environmental Site Assessment*. CSA Z769.

CCME. (2008). *Canada Wide Standards for PHCs in Soil*. Canadian Council of Ministers of the Environment.

CCME. (2008). *Canadian Soil Quality Guidelines for the Protection of Environment and Human Health*. Canadian Council of Ministers of the Environment .

MCC. (2016). *Environmental Site Assessments in Manitoba* . Manitoba Conservation and Climate.

Executive Summary

Dillon was retained by Tervita Corporation (Tervita) on behalf of Parrish & Heimbecker (P&H) to conduct a Phase II Environmental Site Assessment (ESA) at P&H's property located at 70 Roderick Street located in the Rural Municipality (RM) of Springfield, Manitoba (MB) (the "site") also referred to as the Transcona site. The property stores, transfers and treats agricultural grains and seeds. The purpose of the Phase II ESA was to conduct environmental sampling of soil and groundwater at the site to determine whether the property is subject to soil and groundwater concentrations greater than applicable site guidelines. The recommendation of this Phase II ESA is resultant from the Phase I ESA conducted by Dillon in September of 2020 at the site.

Based on the results of the Phase I ESA (Dillon, 2020), Dillon conducted a Phase II ESA to evaluate whether the APECs identified had resulted in soil and groundwater concentrations greater than pre-established criteria.

Dillon's Phase II ESA included advancing fifteen (15) boreholes at the site on November 30 to December 1, 2020. Seven (7) boreholes (MW20-01 through MW20-07) were advanced using a solid stem auger truck rig supplied and operated by Maple Leaf Drilling of Winnipeg, MB. The boreholes were advanced to depths of up to 6.1 metres below grade surface (mbgs). The contaminants of potential concern selected were based on a review of Material Safety Data Sheets (MSDS) available for the chemicals used on-site and indicators of potential products that may have been used historically on the site. In general, soil and water samples were analyzed for benzene, toluene, ethylbenzenes and xylenes (BTEX), petroleum hydrocarbons (PHC) F1 to F4, polycyclic aromatic hydrocarbons (PAHs), routine parameters, pesticides and metals. These indicator parameters were selected as they are present in the chemicals used on-site and have applicable soil and/or groundwater criteria available to evaluate the potential environmental concern.

The Canadian Council of Ministers of the Environment (CCME) soil quality guidelines (SQGs) for the protection of environmental and human health were selected as the primary set of guidelines for metals and PAHs in soil (CCME, 1999, updated 2016). CCME Canada Wide Standards (CWS) for PHCs were used for the evaluation of PHCs in soil (CCME, 2001, updated 2008).

Seven (7) boreholes were completed as monitoring wells. Groundwater was collected from the seven (7) monitoring wells on December 16, 2020. Groundwater quality guidelines that were used for comparison are the Guidelines for Canadian Drinking Water (Health Canada, 2017).

Shallow soil samples collected from the laydown area of the site were noted to have elevated levels of PHCs, PAHs and metals in soil. It was noted that although these analyte concentrations were not observed within any of the groundwater samples, monitoring wells were not installed directly within the vicinity due to shallow auger refusal within the laydown area. Elevated levels of PHCs, PAHs and metal

concentration can be attributed to wood preservatives, pesticides, agricultural fertilizers. It was noted that various fill materials, concrete and wood debris were observed below ground within the laydown area.

Manganese and uranium concentrations above applicable guidelines were observed within all groundwater samples analyzed. These concentrations are not anticipated to be due to contaminants of potential concerns found on site and are assumed to be naturally occurring.

With the exception of the laydown area, samples were not observed above applicable guidelines within other areas of the site including the property boundary to the west or the chemical storage building and do not indicate migration of contaminants from neighbouring properties to the west.

Section 3.1 of the Contaminated Site Remediation Act (CRSA) indicates that the owner or occupier of the site must notify Manitoba Conservation and Climate (MCC) in writing when they become aware of information that the site has been contaminated at a level that exceeds a standard established or adopted by the regulation. Dillon recommends that this report and supporting documentation be provided to MCC for review.

It is Dillon's recommendation that the site is suitable for continued industrial usage and no further investigation or monitoring is required at this time. Upon the decision for the potential closure and sale of the property, a remedial action plan is recommended to address surficial soil impacts within the laydown area of the site.

1.0 Introduction

1.1 Purpose

Dillon Consulting Limited (Dillon) was retained by Tervita on behalf of Parrish & Heimbecker (P&H) to conduct a Phase II Environmental Site Assessment (ESA) at the property located at 70 Roderick Street in the Rural Municipality (RM) of Springfield, Manitoba (Figure 1, appended). The property stores, transfers and treats agricultural grains and seeds. The purpose of the Phase II ESA was to conduct environmental sampling of soil and groundwater at the site to determine whether the property is subject to soil and groundwater concentrations greater than applicable site guidelines. The recommendation of this Phase II ESA is resultant from the Phase I ESA conducted by Dillon in September of 2020 at the site.

A Phase II ESA was recommended to occur due to the following areas of potential environmental concern (APECs):

- A laydown area was identified in the southeast portion of the site that contained several surface stains and an above ground diesel storage tank;
- The site is in close proximity to General Scrap's Auto Wreckage Facility which is adjacent to the west of the site; and
- The site is in close proximity to Canadian Pacific Railway's North Transcona Yard which is directly south of the site and listed as an impacted site by Manitoba Conservation and Climate (MCC).

1.2 Objectives and Scope of Work

The purpose of the Phase II ESA was to conduct environmental sampling of soil and groundwater at the site to determine whether the property is subject to actual contamination. The Canadian Standards Association (CSA) define contamination as the presence of a substance of concern, or a condition, in concentrations above appropriate pre-established criteria in soil, sediment, surface water, groundwater, air or structures (Canadian Standards Association, 2001, revised 2012).

To fill the objective of the Phase II ESA, the following scope of work was completed:

- Developed a project specific Health and Safety plan pertinent to on-site activities;
- Conducted utility locates through a private locator and Manitoba Click Before You Dig;
- Advanced fifteen (15) boreholes (MW20-01 through MW20-07 and BH20-01 through BH20-08);
- Completed field screening of the soil samples from the site at approximately 0.75 metre (m) intervals for hydrocarbon vapour concentrations;
- Submitted soil samples, plus additional laboratory blinded field duplicate samples for analysis of BTEX and PHC fractions F1 to F4 (seventeen (17) samples), PAHs (nine (9) samples),

pesticides (two (2) samples), routine parameters (four (4) samples), grain size analysis (three (3) samples and soil metals (twelve (12) samples);

- Completed seven (7) of the boreholes as groundwater monitoring wells;
- Measured groundwater levels within the monitoring wells and collected field water quality parameters;
- Submitted seven (7) groundwater samples, plus laboratory blinded field duplicates for analysis of BTEX and PHC fractions F1 to F4 (six (6) samples), PAHs (four (4) samples), pesticides (two (2) samples), routine parameters (three (3) samples) and metals (five (5) samples); and
- Completed an ESA report summarizing the results of the investigation.

This Phase II ESA was conducted in accordance with CAN/CSA-Z769-00 (R2018).

2.0

Phase II ESA

Based on the results of the Phase I ESA, Dillon conducted a Phase II ESA to evaluate whether the APECs identified had resulted in soil and groundwater concentrations greater than pre-established criteria.

2.1

Contaminants of Potential Concern

The contaminants of potential concern selected were based on a review of MSDS available for the chemicals used on-site and indicators of potential products that may have been used historically on the site. In general, soil and water samples were analyzed for BTEX, PHC F1-F4, PAHs, pesticides, routine parameters and metals. These indicator parameters were selected as they are present in the chemicals used on-site and have applicable soil and/or groundwater criteria available to evaluate the potential environmental concern. A summary of the soil and groundwater laboratory analytical program is included in Table 2-1.

Table 2-1: Summary of Sampling Program Analysis

Borehole Location	Corresponding APEC/Location	Analysis Completed
MW20-01	Chemical storage building	- Soil – Pesticides, routine parameters; and - Groundwater – Pesticides, routine parameters, metals.
MW20-02	APEC 1, southeast laydown area	- Soil – BTEX, PHC F1 to F4, routine parameters; and - Groundwater – BTEX, PHC F1 to F4, metals, PAHs.
MW20-03	Rail timber storage area	- Soil – BTEX, PHC F1 to F4, PAHs; and - Groundwater – Routine parameters, BTEX, PHC F1 to F4, metals, PAHs.
MW20-04	Diesel above ground storage tank	- Soil – BTEX, PHC F1 to F4; and - Groundwater – BTEX, PHC F1 to F4, PAHs.
MW20-05	Maintenance shop	- Soil – BTEX, PHC F1 to F4, pesticides, routine parameters; and - Groundwater – Pesticides, BTEX, PHC F1 to F4, metals.
MW20-06	General Scrap property boundary	- Soil – BTEX, PHC F1 to F4, grain size analysis; and - Groundwater – Routine parameters, BTEX, PHC F1 to F4, metals, PAHs.
MW20-07	General Scrap property boundary	- Soil – Metals; and - Groundwater – BTEX, PHC F1 to F4, metals.
BH20-01	APEC 1, southeast laydown area	Soil – BTEX, PHC F1 to F4, metals.
BH20-02	APEC 1, southeast laydown area	Soil – BTEX, PHC F1 to F4, grain size analysis, PAHs, metals.

BH20-03	APEC 1, southeast laydown area	Soil – BTEX, PHC F1 to F4, PAHs.
BH20-04	APEC 1, southeast laydown area	Soil – BTEX, PHC F1 to F4, PAHs.
BH20-05	APEC 1, southeast laydown area	Soil – BTEX, PHC F1 to F4, PAHs.
BH20-06	APEC 1, southeast laydown area	Soil – BTEX, PHC F1 to F4, PAHs, metals.
BH20-07	South property boundary	Soil – BTEX, PHC F1 to F4, grain size analysis, metals.
BH20-08	General Scrap property boundary	Soil – BTEX, PHC F1 to F4, metals.

2.2 Regulatory Framework

The Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health outlines guidelines for the environmental quality of a site based upon the land use at the subject site. Land use is assigned according to the following categories: Industrial, Commercial, Residential/Parkland and Agricultural. The site is most suitable for the industrial land use and is anticipated to remain for the foreseeable future.

The CCME guidelines for hydrocarbons are dependent on soil texture. CCME defines a coarse-grained soil as having a median grain size of greater than 75 µm and fine-grained soil as having a media grain size of less than 75 µm. Based on visual observations of the soil during Dillon's investigation and grain size analysis (discussed in Section 4.4.1) the soil encountered at the site is fine grain. As such, fine grain guidelines have been selected as part of this investigation based on soil stratigraphy and grain size analysis.

2.3 Receptors

A brief overview of the potential receptors that may be applicable to the site and the rationale for selection or pathway elimination are discussed in Table 2-2 below.

Table 2-2: Exposure Pathway Summary Table

Exposure Pathway	Applicability	Rationale
Human Health Exposure Pathways		
Direct Contact	Yes	Areas of the site are accessible to the workers and the public and therefore exposure to the public is a potential.
Vapour Inhalation	Yes	The project area currently has several buildings on-site or adjacent to the site and it is expected that in the foreseeable future buildings will remain on-site.

Exposure Pathway	Applicability	Rationale
Potable Groundwater	Yes	The site contains two (2) groundwater wells which are used to supply water for the maintenance and washroom facilities. There are no potable drinking water wells on-site. The Phase I ESA (Dillon, 2020) indicated no potential presence of potable drinking wells within 250 m from the site. However, the RM of Springfield is known to use groundwater for potable drinking water.
Ecological Health Exposure Pathways		
Ecological Soil Contact	Yes	Portions of the surface material at the site had grass, topsoil, gravel surface and therefore plants and terrestrial invertebrates present in the soil are applicable.
Groundwater Check – Livestock and Irrigation	No	The Phase I ESA (Dillon, 2020) indicated no potential presence of livestock and irrigation water wells within 250 m from the site.
Groundwater Check – Aquatic Life	No	The nearest surface water body is the Harborview Recreational Complex Retention Pond located 0.5 kilometres (km) to the north of the subject site. CCME indicates that the aquatic life exposure needs to be evaluated if within 10 m of the site (fine-grained) and 500 m of the site (coarse-grained). As such, the aquatic life pathway is not applicable.
Off-Site Migration Check	No	Protective of more sensitive land uses.
Management Limits	No	Protective of more sensitive land uses.

The most stringent of the applicable guidelines presented above was used as the selected guidelines for the site and are presented in the appended soil and groundwater analytical data tables.

The assessment criteria selected for comparison of analytical results at the site are referenced and described in more detail below.

2.4

Soil and Groundwater Comparison Standards

The Canadian Council of Ministers of the Environment (CCME) soil quality guidelines (SQGs) for the protection of environmental and human health were selected as the primary set of guidelines for metals and PAHs in soil (CCME, 1999, updated 2016). CCME Canada Wide Standards (CWS) for PHCs were used for the evaluation of PHCs in soil (CCME, 2001, updated 2008).

Groundwater quality guidelines that were used for comparison are the Guidelines for Canadian Drinking Water (Health Canada, 2017).

3.0 Phase II ESA Methodology

3.1 Health and Safety Plan

Dillon developed a Health and Safety (H&S) Plan for on-site activities. A H&S meeting was held at the beginning of each day on-site and the H&S requirements for site work were reviewed with members of the field team including sub-contractors. Field personnel reviewed the H&S Plan and signed off prior to the start of the program. The H&S Plan included:

- Identification and mitigation of potential hazards based on on-site activities;
- COVID-19 project specific Hazard Assessment/Health and Safety Resiliency Plan;
- Description of safe work practices and procedures;
- Description of personal protective equipment (PPE);
- Identification of safety and first aid requirements; and
- Identification of emergency response procedures.

3.2 Utility Locates and Site Access

Dillon completed utility locates prior to commencing intrusive work at the site. Dillon contacted Manitoba Click Before You Dig and McCaine Electric (private utility locator) for information on the location of buried utilities and requested the lines to be marked. Utility owners notified via Manitoba Click Before You Dig included Manitoba Hydro, MTS Inc. and Shaw Communications.

3.3 Waste Disposal

Soil cuttings generated during drilling activities were stored on-site in soil bags. This material will be delivered to a licenced waste disposal facility upon completion of the project.

3.4 Borehole Drilling and Monitoring Well Installation

3.4.1 Borehole Drilling and Soil Sampling

Borehole drilling and soil sampling were conducted at the site on November 30, 2020 to December 1, 2020. Fifteen (15) boreholes (BH20-01 through BH20-08 and MW20-01 through MW20-07) were advanced using a solid stem auger truck rig supplied and operated by Maple Leaf Drilling of Winnipeg, Manitoba. The boreholes were advanced to depths of 6.1 mbgs. Borehole locations (Figure 2, appended) were selected to investigate the absence/presence of contamination in relation to APEC's and described in the Phase I ESA (Dillon, 2020).

Drilling equipment was cleaned of soil between boreholes and samples were collected at approximately 0.75 m intervals, or at any zones of apparent impact, using dedicated disposal gloves. Soil samples were

recovered for field screening and potential submission to the laboratory. The soils from each stratum were field-classified according to soil type, colour, moisture content, olfactory comments, staining and other visual observations. Borehole logs were prepared for each borehole and are presented in Appendix A. Soil sample selection for laboratory analysis was based on visual observations and the results of the headspace vapour screening.

Field screening for hydrocarbon vapours was conducted using a combustible gas detector (RKI Eagle) operated in methane elimination mode. The RKI Eagle was calibrated on-site using a percentage of lower explosive limit (%LEL) measurement of 15%, via hexane gas canister calibration kit. The RKI Eagle operates with a maximum variance $\pm 5\%$ of full scale reading. Vapours were measured using a fixed-volume headspace technique, soil was placed in a new re-sealable polyethylene bag and after sufficient time to reach ambient temperatures above 10°C, the plastic bag was punctured and the headspace vapour level measured. The vapour levels were recorded in parts per million by volume (ppm). Soil vapour readings are presented on the borehole logs in Appendix A.

The other portion of the soil was placed in laboratory supplied containers for potential laboratory analysis. Soil sample selection for laboratory analysis was based on visual observations and the results of the headspace vapour screening.

Soil samples were submitted for laboratory analysis as summarized below in Table 2-1 Soil samples for volatiles, including BTEX and PHC F1, were collected using Terra Core™ samplers. Samples were kept cool by including bagged ice in sample coolers on-site and during shipment to the laboratory. A chain-of-custody (CoC) form was completed and included in each sample cooler. The samples were shipped to Bureau Veritas (BV) Labs in Winnipeg, Manitoba. The laboratory certificates of analysis are presented in Appendix B.

3.4.2 Monitoring Well Installation and Groundwater Sampling

Monitoring wells were installed at the seven (7) borehole locations (MW20-01 through MW20-07) to assess groundwater quality. Each well was constructed of 50 millimetre (mm) diameter, Schedule 40, polyvinyl chloride (PVC) pipe with No. 10 slots for the well screen and solid riser to the surface. The well materials were not removed from the protective plastic wrapping until required. The PVC screen and piping were flush-threaded and contained O-rings to provide watertight joints. Silica sand was placed around each well screen and extended to approximately 0.3 m above each well screen. Bentonite was placed on top of the silica sand and extended to the top of the well. Monitoring well development was conducted following the installation of the wells.

Groundwater monitoring and sampling were completed by Dillon personnel on December 16, 2020. Activities were completed in accordance with Dillon Standard Environmental Field Procedures that meet industry-accepted practices. These procedures are designed to assist with the collection of repeatable and representative data and to reduce sample cross-contamination.

Groundwater monitoring activities were completed by Dillon personnel wearing new, disposable nitrile gloves and consisted of the following activities:

- Measuring hydrocarbon vapours using a combustible gas detector (RKI Eagle) operated in methane elimination mode;
- Measuring depth to groundwater and depth to well bottom using an oil/water interface probe. Measurements were recorded relative to the top of the PVC well casing;
- Measurements of water quality parameters including pH, oxygen reduction potential (ORP), conductivity, dissolved oxygen and temperature using a YSI ProPlus water quality meter calibrated with standard solution prior to field use; and
- Monitoring equipment was decontaminated using a mild detergent and water.

Groundwater samples were collected by Dillon personnel using low-flow techniques, clean disposable nitrile gloves and disposable sampling equipment.

Samples for laboratory analyses were packed carefully into sample coolers to prevent damage to the sample containers. Samples were kept cool by including bagged ice in sample coolers on-site and during shipment to the laboratory. A CoC form was completed and included in each sample cooler. The samples were shipped to BV Labs for analysis. The laboratory certificates of analysis are presented in Appendix B.

3.4.3 Quality Assurance/Quality Control (QA/QC) Program

The following Quality Assurance/Quality Control (QA/QC) procedures were employed during the course of the field investigation program:

- Soil sampling tools were cleaned between sample collection using water and a mild detergent solution;
- Groundwater monitoring and sampling equipment was rinsed using water and a mild detergent solution between sample locations;
- Laboratory supplied bottles, jars and bags were used for sample collection;
- Laboratory services were provided by a Standards Council of Canada certified laboratory; and
- Laboratory blinded field duplicates allotting 10% of the total project media were submitted as QA/QC samples.

QA/QC review included:

- The relative percent different (RPD) for the results from field duplicates were calculated and compared to applicable acceptance criteria; and
- The laboratory QA/QC was reviewed and issues were reported.

Quality control measures included the collection and analysis of laboratory blinded duplicate samples, which are two (2) samples collected simultaneously with no identification of the relevant duplicate pair.

The RPD is the absolute difference between the two (2) values divided by the mean. When the RPD between a pair of duplicate samples exceeds 30% for water and 50% for soil, standard practice is to explore potential explanations with reference to other analyses from the same area and/or field observations. When the reported concentration of one of the duplicate pairs is below five (5) times the reported detection limit, the RPD is not calculated.

BV Labs in Calgary, Alberta performed the sample analysis. BV Labs implements an internal QA/QC procedures and methodologies program including laboratory duplicates, method blanks and matrix spikes to ensure data quality and integrity. Details of BV Labs QA/QC procedures are presented in the laboratory reports provided in Appendix B.

Data collected in the field were transcribed to summary data tables, after which the data were confirmed against field notes. Analytical data were received from BV Labs in electronic format. Data were transferred electronically to a database (ESdat) for analysis in excel spreadsheets and confirmed against the laboratory reports.

The QA/QC procedures are intended to demonstrate that samples collected and tested adequately represent conditions at the site.

4.0 Phase II ESA Results

4.1 Soil Stratigraphy

The soil profile during the drilling activities generally consisted of a surface layer consisting of fill material and/or topsoil, followed by a medium plasticity silty clay that was moist. Refusal was encountered in Borehole BH20-01 at 1.8 mbgs on suspect concrete pieces and wood debris. BH20-02, BH20-03 and BH20-06 were advanced to 3.0 mbgs. Refusal was encountered at BH20-04 and BH20-05 at 1.5 mbgs on suspect cobbles. BH20-07, BH20-08 and MW20-01 through MW20-07 were advanced to a depth of 6 mbgs. Boreholes logs are presented in Appendix A.

4.2 Soil Field Screening

During the drilling activities, soil samples were collected at approximately 0.75 m intervals and screened for total volatile gases using an RKI Eagle. Soil vapour screening measurements of the samples collected during the field activities resulted in a range of vapour readings of non-detect to 120 ppm (BH20-03 at a depth of 0.9 mbgs). Visual and olfactory evidence of PAH impacts alongside wood debris were encountered in boreholes BH20-03, BH20-04 and BH20-05 ranging from 0.3m to 2.2 mbgs. Sample soil locations and soil vapour screening results are presented in Appendix A.

4.3 Groundwater Monitoring

Groundwater levels were measured using a Solinst Interface Probe on December 16, 2020. Non-Aqueous Phase Liquids were not encountered during the groundwater level measurements.

Groundwater level measurements ranged from 1.775 mbgs in MW20-01 to 6.59 mbgs in MW20-07. Groundwater elevations ranged from 226.40 masl in MW20-07 to 231.25 masl in MW20-01. Based on the information collected during the Phase II ESA, the groundwater flow direction was inconclusive based on water levels recorded at the site. It is assumed local groundwater direction as the site is heavily impacted by de-watering operations performed beneath the grain elevator at the site. Groundwater elevations are presented in Table 1.1 (appended) and Figure 3 (appended).

4.3.1 Water Quality Parameters

Measurements of hydrocarbon vapours using a combustible gas detector (RKI Eagle) operated in methane elimination mode were completed for each well. Measurements ranged from non-detect to 620 ppm (MW20-02).

Measurements of pH, conductivity, temperature, turbidity, ORP and dissolved oxygen (DO) were recorded using an YSI ProPlus multi-parameter meter. Groundwater chemistry and field measurements were collected during the groundwater sampling program. A review of the results indicated:

- pH ranged from 6.57 (MW20-05) to 7.34 (MW20-01);
- Specific Conductivity ranged from 2,268 $\mu\text{S}/\text{cm}$ (MW20-01) to 4,858 $\mu\text{S}/\text{cm}$ (MW20-02);
- Temperature ranged from 4.3°C (MW20-06) to 5.7°C (MW20-02);
- ORP ranged from 117 mV (MW20-02) to 196 mV (MW20-06); and
- DO ranged from 1.7 mg/L (MW20-02) to 8.11 mg/L (MW20-06).

Groundwater quality parameters are provided in Table 1.2 (appended).

4.4 Soil Analytical Results

4.4.1 Grain Size Analysis

Three (3) representative soil samples were submitted to BV Labs for grain size analysis. The results indicated the following:

- BH20-02 at a depth of 0.75 m characteristic of a low plastic organic clay indicated 9.2% of the particles were greater than the 75 μm sieve indicating a fine grain size analysis.
- BH20-07-04 at a depth of 0.3 m characteristic of a sandy gravel, indicated 58% of the particles were greater than the 75 μm sieve indicating a coarse grain size analysis. It is noted that this sandy gravel was observed as a surficial fill material and is not indicative of native soil conditions at depth across the site.
- MW20-06 at a depth of 2.1 m characteristic of a medium plastic clay indicated 1.9% of the particles were greater than the 75 μm sieve indicating a fine grain size analysis.

Based on the grain size analysis and visual observations at the site the grain size for the site is designated as fine-grained material. The grain size analytical results are summarized in Table 2.1 (appended). Soil analytical certificates are presented in Appendix B.

4.4.2 PHCs

Based on soil vapour headspace concentrations, APEC locations and/or sample locations, seventeen (17) soil samples, plus an additional two (2) field duplicates, were analyzed for BTEX and PHC fractions F1 to F4.

The following parameters exceed regulatory criteria:

- Benzene (guideline of 0.0068 mg/kg):
 - BH20-03 at a depth of 0.9 m with a concentration of 0.0091 mg/kg;
 - BH20-04 at a depth of 1.2 m with a concentration of 0.0099 mg/kg;
 - BH20-05 at a depth of 0.75 m with a concentration of 0.079 mg/kg;
 - BH20-06 at a depth of 2.3 m with a concentration of 0.013 mg/kg;
 - BH20-07 at a depth of 0.3 m with a concentration of 0.71 mg/kg;

- MW20-02 at a depth of 0.75 m with a concentration of 0.024 mg/kg;
- MW20-03 at a depth of 0.6 m with a concentration of 0.0015 mg/kg;
- MW20-04 at a depth of 0.45 m with a concentration of 0.0079 mg/kg; and
- MW20-06 at a depth of 0.76 m with a concentration of 0.0092 mg/kg.
- Toluene (guideline of 0.08 mg/kg):
 - BH20-03 at a depth of 0.9 m with a concentration of 0.19 mg/kg;
 - BH20-04 at a depth of 1.2 m with a concentration of 0.24 mg/kg;
 - BH20-05 at a depth of 0.75 m with a concentration of 0.6 mg/kg;
 - BH20-07 at a depth of 0.3 m with a concentration of 3.7 mg/kg;
 - MW20-03 at a depth of 0.6 m with a concentration of 0.098 mg/kg; and
 - MW20-06 at a depth of 0.76 m with a concentration of 0.082 mg/kg.
- Ethylbenzene (guideline of 0.018 mg/kg):
 - BH20-03 at a depth of 0.9 m with a concentration of 0.00914 mg/kg;
 - BH20-04 at a depth of 1.2 m with a concentration of 0.0099 mg/kg;
 - BH20-05 at a depth of 0.75 m with a concentration of 0.095 mg/kg;
 - BH20-07 at a depth of 0.3 m with a concentration of 0.023 mg/kg;
 - MW20-03 at a depth of 0.6 m with a concentration of 0.024 mg/kg; and
 - MW20-04 at a depth of 0.45 m with a concentration of 0.019 mg/kg.
- Total Xylenes (guideline of 2.4 mg/kg):
 - BH20-07 at a depth of 0.3 m with a concentration of 6.8 mg/kg.

The remaining samples were below the referenced regulatory criteria. The analytical results are summarized in Table 2.2 (appended). Soil analytical certificates are presented in Appendix B.

4.4.3 PAHs

Based on soil vapour headspace concentrations, APEC locations, and/or sample locations, nine (9) soil samples were analyzed for PAHs.

The following parameters exceed regulatory criteria:

- Acenaphthene (guideline of 0.28 mg/kg):
 - BH20-03 at a depth of 0.9 m with a concentration of 24 mg/kg;
 - BH20-03 at a depth of 2.1 m with a concentration of 0.31 mg/kg; and
 - BH20-04 at a depth of 1.2 m with a concentration of 6.9 mg/kg.
- Benzo(a)pyrene (guideline of 1.4 mg/kg):
 - BH20-03 at a depth of 0.9 m with a concentration of 12 mg/kg; and
 - BH20-04 at a depth of 2.1 m with a concentration of 2 mg/kg.
- Benzo(b+j)fluoranthene (guideline of 10 mg/kg):
 - BH20-02 at a depth of 0.9 m with a concentration of 18 mg/kg.
- Fluorene (guideline of 0.25 mg/kg):

- BH20-03 at a depth of 0.9 m with a concentration of 17 mg/kg; and
- BH20-04 at a depth of 1.2 m with a concentration of 5.2 mg/kg.
- Naphthalene (guideline of 0.013 mg/kg):
 - BH20-03 at a depth of 0.9 m with a concentration of 13 mg/kg;
 - BH20-03 at a depth of 2.1 m with a concentration of 0.16 mg/kg;
 - BH20-04 at a depth of 1.2 m with a concentration of 2.8 mg/kg;
 - BH20-05 at a depth of 0.75 m with a concentration of 0.34 mg/kg;
 - BH20-05 at a depth of 1.4 m with a concentration of 0.11 mg/kg;
 - BH20-06 at a depth of 0.75 m with a concentration of 0.031 mg/kg; and
 - MW20-03 at a depth of 0.6 m with a concentration of 0.035 mg/kg.
- Phenanthrene (guideline of 0.046 mg/kg):
 - BH20-02 at a depth of 0.75 m with a concentration of 0.063 mg/kg;
 - BH20-03 at a depth of 0.9 m with a concentration of 69 mg/kg;
 - BH20-03 at a depth of 2.1 m with a concentration of 1.2 mg/kg;
 - BH20-04 at a depth of 1.2 m with a concentration of 15 mg/kg;
 - BH20-05 at a depth of 0.75 m with a concentration of 1.2 mg/kg;
 - BH20-05 at a depth of 1.4 m with a concentration of 0.78 mg/kg;
 - BH20-06 at a depth of 0.75 m with a concentration of 0.2 mg/kg; and
 - MW20-03 at a depth of 0.6 m with a concentration of 0.49 mg/kg.

The remaining samples were below the referenced regulatory criteria. The analytical results are summarized in Table 2.4 (appended). Soil analytical certificates are presented in Appendix B.

4.4.4

Routine Parameters

Based on sample locations and APEC locations, four (4) soil samples, plus an additional field duplicate, were analyzed for routine parameters.

The following parameters exceed regulatory criteria:

- Electrical Conductivity (guideline of 4,000 us/cm):
 - MW20-02 at a depth of 0.75 m with a concentration of 7,500 us/cm.
- pH (guideline of 6 to 8 pH Units):
 - MW20-02 at a depth of 0.75 m with a concentration of 8.17.

The remaining samples were below the referenced regulatory criteria. The analytical results are summarized in Table 2.1 (appended). Soil analytical certificates are presented in Appendix B.

4.4.5

Metals

Based on sample locations and APEC locations, twelve (12) soil samples, plus an additional two (2) field duplicates, were analyzed for metals.

The following parameters exceed regulatory criteria:

- Arsenic (guideline of 12 mg/kg):
 - BH20-02 at a depth of 0.75 m with a concentration of 16 mg/kg.
- Copper (guideline of 91 mg/kg):
 - BH20-02 at a depth of 0.75 m with a concentration of 370 mg/kg;
 - BH20-07 at a depth of 0.3 m with a concentration of 930 mg/kg; and
 - MW20-03 at a depth of 0.6 m with a concentration of 230 mg/kg.
- Nickel (guideline of 89 mg/kg):
 - BH20-02 at a depth of 0.75 m with a concentration of 190 mg/kg; and
 - MW20-03 at a depth of 0.6 m with a concentration of 98 mg/kg.
- Zinc (guideline of 41 mg/kg):
 - BH20-02 at a depth of 0.75 m with a concentration of 3,500 mg/kg;
 - BH20-07 at a depth of 0.3 m with a concentration of 990 mg/kg;
 - MW20-02 at a depth of 0.75 m with a concentration of 440 mg/kg;
 - MW20-03 at a depth of 0.6 m with a concentration of 2,200 mg/kg; and
 - MW20-03 at a depth of 2.4 m with a concentration of 420 mg/kg.

The remaining samples were below the referenced regulatory criteria. The analytical results are summarized in Table 2.3 (appended). Soil analytical certificates are presented in Appendix B.

4.4.6 Pesticides

Based on sample locations and APEC locations, two (2) soil samples, were analyzed for pesticide parameters. The pesticide concentrations remained below the laboratory detection limits and the applicable guidelines for the site. The analytical results are summarized in Table 2.5 (appended). Soil analytical certificates are presented in Appendix B.

4.5 Groundwater Analytical Results

4.5.1 PHCs

Six (6) groundwater samples plus an additional field duplicate were analyzed for BTEX and PHC Fractions F1 to F4. The BTEX/PHC parameters remained below laboratory detection limits and the applicable guidelines for the site. The analytical results are presented in Table 3.2 (appended). Groundwater analytical certificates are presented in Appendix B.

4.5.2 PAHs

Four (4) groundwater samples plus an additional field duplicate were analyzed for PAH parameters. The PAH parameters remained below the applicable guidelines for the site. The analytical results are presented in Table 3.4 (appended). Groundwater analytical certificates are presented in Appendix B.

4.5.3 Routine Parameters

Three (3) groundwater samples plus an additional field duplicate were analyzed for routine parameters. The routine parameters remained below the applicable guidelines for the site. The analytical results are presented in Table 3.1 (appended). Groundwater analytical certificates are presented in Appendix B.

4.5.4 Metals

Five (5) groundwater samples, plus an additional field duplicate, were analyzed for metal parameters.

The following parameters exceed regulatory criteria:

- Manganese (guideline of 0.012mg/L):
 - MW20-02 with a concentration of 0.4.3 mg/L;
 - MW20-03 with a concentration of 1.1 mg/L;
 - MW20-05 with a concentration of 4.3 mg/L;
 - MW20-06 with a concentration of 0.42 mg/L; and
 - MW20-07 with a concentration of 0.58 mg/L.
- Uranium (guideline of 0.02 mg/L):
 - MW20-02 with a concentration of 0.19 mg/L;
 - MW20-03 with a concentration of 0.035 mg/L;
 - MW20-05 with a concentration of 0.15 mg/L;
 - MW20-06 with a concentration of 0.11 mg/L; and
 - MW20-07 with a concentration of 0.14 mg/L.

The remaining samples were below the referenced regulatory criteria. The analytical results are summarized in Table 3.3 (appended). Groundwater analytical certificates are presented in Appendix B.

4.5.5 Pesticides

Two (2) groundwater samples were analyzed for pesticide parameters. The pesticide parameters remained below laboratory detection limits and the applicable guidelines for the site. The analytical results are presented in Table 3.5 (appended). Groundwater analytical certificates are presented in Appendix B.

5.0 Quality Assurance/Quality Control (QA/QC)

5.1 Field QA/QC

Field QA/QC samples included the collection and analysis of blind field duplicates, which are two (2) samples collected from the same location, with no identification of the relevant duplicate pair. Results of Dillon's QA/QC field sampling program were reviewed, and the RPD was calculated for duplicate samples if parameter concentrations were greater than five (5) times the estimated quantitation limit.

Exceedances of the acceptable 50% RPD values were noted in duplicate samples collected at MW20-02 and MW20-06 at a depth of 0.75m. It is not that the surficial fill nature of the sample is highly heterogeneous and can result in an increased differential in analyte results. Dillon's interpretation of the data and the conclusions based on that interpretation as presented herein remain valid.

5.2 Laboratory QA/QC

BV Labs conducts internally quality control tests using matrix spikes, spiked blanks, method blanks, QC standards and lab duplicates. The samples received by the lab were analyzed and extracted within the recommended hold times. A review of laboratory quality assurance (provided in the laboratory COAs in Appendix B) indicated the following:

- Laboratory duplicate, method blank, matrix spike and spiked blank results were within the accepted laboratory limits as indicated within the quality assurance reports for soil.
- Laboratory duplicate, method blank, matrix spike and spiked blank results were within the accepted laboratory limits as indicated within the quality assurance reports for groundwater.

BV Labs noted the recovery or RPD for benzo(c)phenanthrene was outside control limits. As this parameter was not observed to be above applicable guidelines, and does not change the outcome of the findings in this report. The overall quality control for this analysis meets acceptability criteria.

Overall laboratory data quality is considered acceptable. Based on an overall review of the quality program employed on this project, the data was found to be reliable and representative of soil and groundwater quality at the site and for the media for which the sample was characterizing.

6.0

Summary and Recommendations

Dillon was retained by Tervita Corporation (Tervita) on behalf of Parrish & Heimbecker (P&H) to conduct a Phase II Environmental Site Assessment (ESA) at P&H's property located 70 Roderick Street property located in the Rural Municipality (RM) of Springfield, Manitoba (MB) (the "site") also referred to as the Transcona Site. The property stores, transfers and treats agricultural grains and seeds.

Based on the results of the Phase I ESA conducted by Dillon in 2020, Dillon conducted a Phase II ESA to evaluate whether the APECs identified had resulted in soil and groundwater concentrations greater than pre-established criteria. Dillon's Phase II ESA included advancing fifteen (15) boreholes at the site on November 30 to December 1, 2020, and converting seven (7) of the boreholes as groundwater monitoring wells. Groundwater was collected at the seven (7) locations on December 16, 2020. The contaminants of potential concern selected were based on a review of MSDS available for the chemicals used on-site and indicators of potential products that may have been used historically on the site. In general, soil and water samples were analyzed for BTEX, PHC F1 to F4, PAHs, pesticides, routine parameters and metals. These indicator parameters were selected as they are present in the chemicals used on-site and have applicable soil and/or groundwater criteria available to evaluate the potential environmental concern.

Shallow soil samples collected from the laydown area of the site were noted to have elevated levels of PHCs, PAHs and metals in soil. It was noted that although these analyte concentrations were not observed within any of the groundwater samples, monitoring wells were not installed directly within the vicinity due to shallow auger refusal within the laydown area. Elevated levels of PHCs, PAHs and metal concentration can be attributed to wood preservatives, pesticides, agricultural fertilizers. It was noted that various fill materials, concrete and wood debris were observed below ground within the laydown area.

Manganese and uranium concentrations above applicable guidelines were observed within all groundwater samples analyzed. These concentrations are not anticipated to be due to contaminants of potential concerns found on site and are assumed to be naturally occurring.

With the exception of the laydown area, samples were not observed above applicable guidelines within other areas of the site including the property boundary to the west, or the chemical storage building and do not indicate migration of contaminants from neighbouring properties to the west.

Section 3.1 of the Contaminated Site Remediation Act (CRSA) indicates that the owner or occupier of the site must notify Manitoba Conservation and Climate in writing when they become aware of information that the site has been contaminated at a level that exceeds a standard established or adopted by the regulation. Dillon recommends that this report and supporting documentation be provided to MCC for

review. It is Dillon's recommendation that the site is suitable for continued industrial usage and no further investigation or monitoring is required at this time. Upon the decision for the potential closure and sale of the property, a remedial action plan is recommended to address surficial soil impacts within the laydown area of the site.

7.0

Closure and Limitations

This report was prepared exclusively for the purposes, project and site location(s) outlined in the report. The report is based on information provided to, or obtained by Dillon as indicated in the report, and applies solely to site conditions existing at the time of the site investigation(s). Although a reasonable investigation was conducted by Dillon, Dillon's investigation was by no means exhaustive and cannot be construed as a certification of the absence of any contaminants from the site(s). Rather, Dillon's report represents a reasonable review of available information within an agreed work scope, schedule and budget. It is therefore possible that currently unrecognized contamination or potentially hazardous materials may exist at the site(s), and that the levels of contamination or hazardous materials may vary across the site(s). Further review and updating of the report may be required as local and site conditions, and the regulatory and planning frameworks, change over time.

This report was prepared by Dillon for the sole benefit of our Client, Tervita Corporation. The material in it reflects Dillon's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Yours sincerely,

DILLON CONSULTING LIMITED



Shane Chapman, C.E.T.
Project Manager

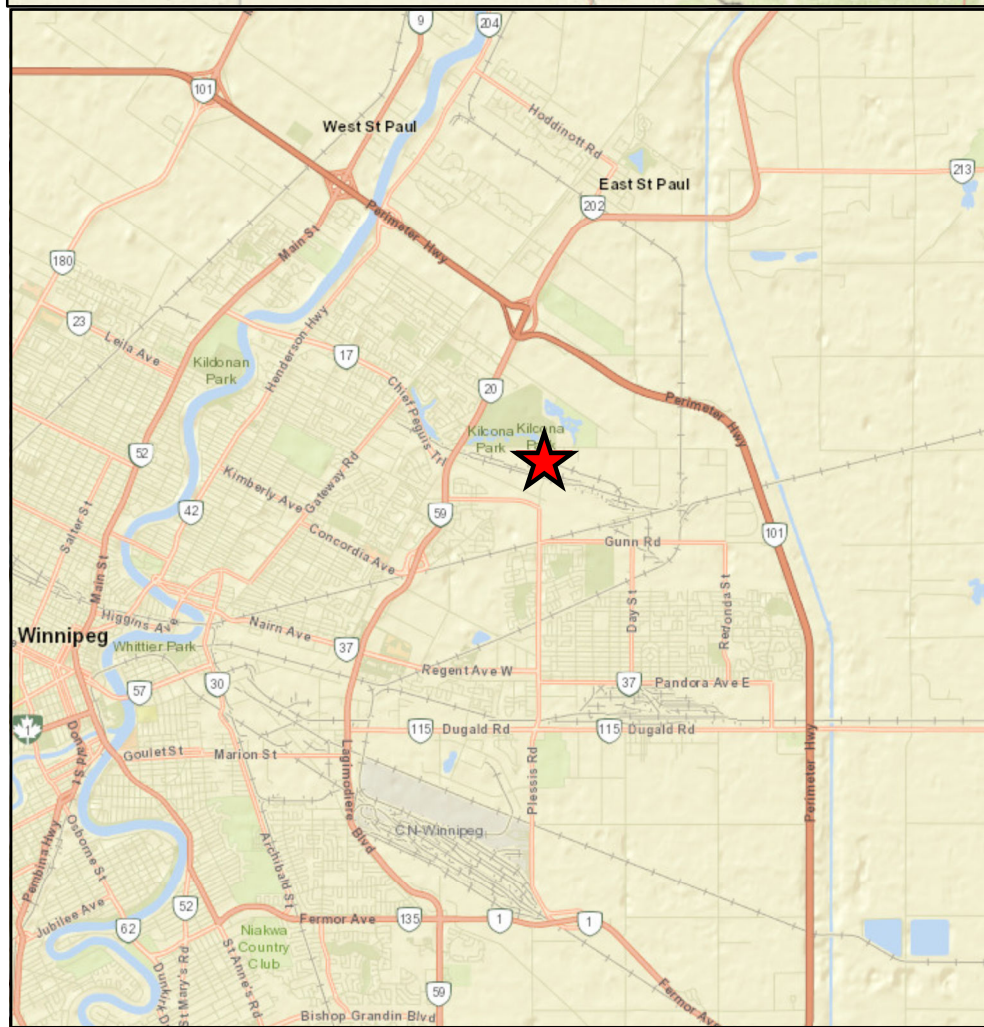


Vanessa Krahn, M. Sc., P. Eng.
Associate

STC:bg

Our File: 20-3725

Figures



Tervita Corporation

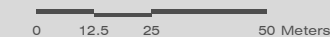
Parrish and Heimbecker
Phase II ESA

SITE LOCATION AND LAND USE

FIGURE 1

Legend

-  Site Location
 Approximate Porperty line
 Office Buildings



SCALE 1:XXX



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: MJT
MAP CHECKED BY: STC
MAP PROJECTION: NAD 1983 UTM Zone 14N

FILE LOCATION: \\DILLON.CA\DILLON_DFS\LONDON\LONDON CAD\GIS\VISUAL COMMUNICATIONS\DI\MXD TEMPLATES\BEIGE - 11X17 LANDSCAPE - LEGEND RIGHT.MXD



PROJECT: 20-3725

STATUS: DRAFT

01/20/2021



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**MONITORING WELL AND
BOREHOLE LOCATIONS**
FIGURE 2

Legend

- Monitoring Well
- Borehole
- Approximate Property line
- Timber Pile
- Used Oil Storage
- Diesel AST
- Office Buildings

0 12.5 25 50 Meters

SCALE 1:1000



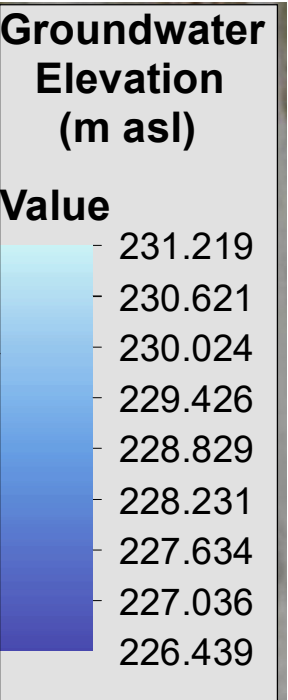
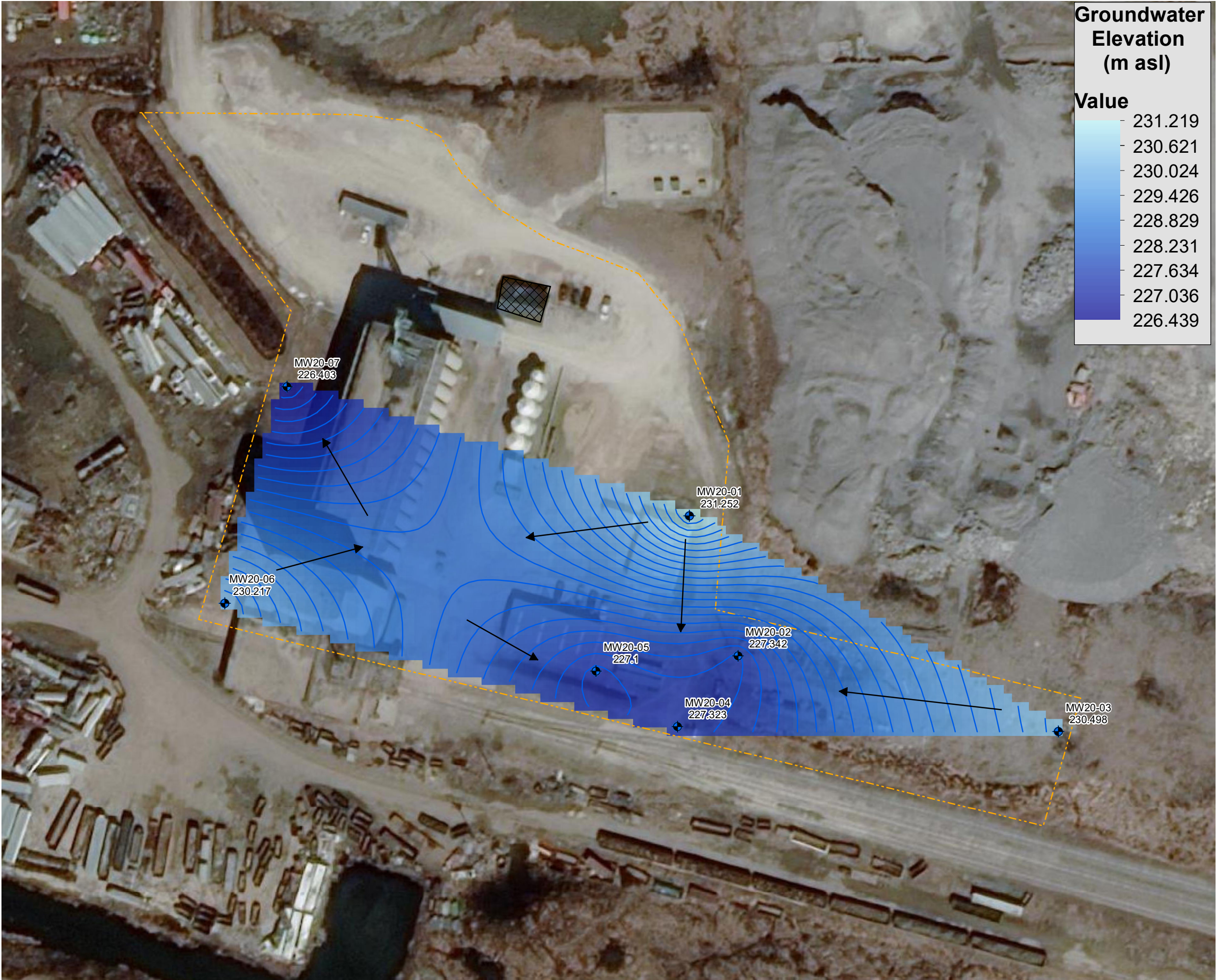
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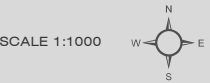


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Parrish and Heimbecker
Phase II ESA

GROUNDWATER ELEVATION CONTOURS
FIGURE 3

Legend

-  Monitoring Well ID/ELEVATION(m asl)
-  Flow Direction
-  Contour Lines
-  Approximate Property Line



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: MJT
MAP CHECKED BY: STC
MAP PROJECTION: NAD 1983 UTM Zone 14N

FILE LOCATION: \\DILLON.CA\DILLON_DFS\LONDON\LONDON CAD\GIS\VISUAL COMMUNICATIONS\DIMXD TEMPLATES\BEIGE - 11X17 LANDSCAPE - LEGEND RIGHT.MXD



PROJECT: 20-3725
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Tables

Table 1.1: Groundwater Monitoring Data



Monitoring Well	Date	Ground Elevation	TOC Elevation	Total Depth	Depth to Water	Depth to Water	Ground Water Elevation	LNAPL Thickness	Head Space Vapours
	dd-mmm-yy	m asl	m asl	m btoc	m btoc	m bgl	m asl	mm	ppm
MW20-01	16-Dec-20	231.942	233.027	6.883	1.775	0.69	231.252	ND	<5
MW20-02	16-Dec-20	232.195	233.117	7.1	5.775	4.853	227.342	ND	620
MW20-03	16-Dec-20	232.333	233.553	7.45	3.055	1.835	230.498	ND	20
MW20-04	16-Dec-20	232.123	233.173	7.375	5.85	4.8	227.323	ND	50
MW20-05	16-Dec-20	232.04	233.31	7.71	6.21	4.94	227.1	ND	<5
MW20-06	16-Dec-20	232.147	233.147	7.325	2.93	1.93	230.217	ND	<5
MW20-07	16-Dec-20	231.938	232.993	7.23	6.59	5.535	226.403	ND	<5

Notes:

m	Meters
TOC	Top of casing
LNAPL	Light non-aqueous phase Liquids
m asl	Meters above sea level
m btoc	Meters below top of casing
m bgl	Meters below ground level
mm	millimeters
ppm	Parts per million organic vapour
ND	Not detected
--	Not measured

Table 1.2: Field Parameters



Parameter	Unit	WELL ID	MW20-01	MW20-02	MW20-03	MW20-04	MW20-05	MW20-06	MW20-07
		Date	2020-12-16	2020-12-16	2020-12-16	2020-12-16	2020-12-16	2020-12-16	2020-12-16
Dissolved Oxygen	mg/L		4.63	1.7	2.3	6.26	6.7	8.11	-
Specific Conductivity	µS/cm		2268	4858	3565	4288	4091	3020	-
pH (Field)	pH Units		7.34	6.77	6.83	7.09	6.57	7.06	-
Redox Potential	mV		155.1	116.7	128.2	140.9	151.8	196.3	-
Temperature	°C		5.6	5.7	5.5	5.2	5.5	4.3	-

Notes:

MW20-07 did not have sufficient water to collect field parameters.

Table 2.1: Routine Soil Analysis



Parameters	Unit	EQL	CCME Tier 1 Industrial (Fine)	ID	BH20-02	BH20-07	MW20-01	MW20-02	FD1	RPD	MW20-05	MW20-05	MW20-06
				Depth(m)	0.75	0.3	0.75	0.75			1.2	3	2.1
				Date	2020-12-01	2020-12-02	2020-12-01	2020-12-01	2020-12-01		2020-12-02	2020-12-02	2020-12-02
Cation/EC Ratio	-	0.1	-		-	-	11	9.9	9.6	3.1	9.9	9.3	-
Sieve-Pan	%	0.2	-		91	42	-	-	-	nc	-	-	98
Theoretical Gypsum Requirement	a	0.2	-		-	-	<0.20	5.4	5.6	3.6	<0.20	1.5	-
Soluble Parameters													
Soluble Calcium	mg/L	-	-		-	-	160	260	190	31.1	34	41	-
Soluble Sulpahte	mg/L	-	-		-	-	510	2,500	2,300	8.3	140	290	-
Soluble Magnesium	mg/L	-	-		-	-	55	290	260	10.9	19	39	-
Chloride (2:1)	mg/L	-	-		-	-	26	1,100	1,100	0.0	50	310	-
Soluble Potassium	mg/L	-	-		-	-	25	520	520	0.0	14	13	-
Soluble Sodium	mg/L	-	-		-	-	33	580	570	1.7	98	240	-
Physical Properties													
Moisture Content	%	0.3	-		19	17	-	29	28	3.5	29	31	28
Percent Saturation	%	-	-		-	-	59	76	73	4.0	96	110	-
Sieve - #200 (>0.075mm)	%	0.2	-		9.2	58	-	-	-	nc	-	-	1.9
Sieve #10 (>2.00mm)	%	0.2	-		1.6	21	-	-	-	nc	-	-	<0.20
General Chemistry													
Chloride	mg/kg	5.9	-		-	-	16	860	800	7.2	48	350	-
Electrical Conductivity (Lab)	µS/cm	20	4,000		-	-	1,300	7,500	7,200	4.1	800	1,700	-
pH (Lab)	pH Units	-	6-8		-	-	7.71	8.17	7.92	3.1	7.46	7.60	-
Sodium Absorption Ratio	SAR	0.1	12		-	-	0.58	5.9	6.3	6.6	3.4	6.3	-
Sulphate	mg/kg	3	-		-	-	300	1,900	1,700	11.1	130	330	-
Calculated Parameters													
Anions Total	meq/L	-	-		-	-	11	84	78	7.4	4.3	15	-
Cations Total	meq/L	-	-		-	-	14	75	69	8.3	7.9	16	-

Notes:

-

EQL

RPD

24

nc

Not sampled/not analyzed

Estimated Quantitation Limit

Relative Percent Difference

Exceeds 50% RPD

Not calculated

Concentration exceeds CCME Tier 1 Industrial (Fine) Guideline

Table 2.2: Petroleum Hydrocarbon Soil Analysis



	Unit	EQL	CCME Tier 1 Industrial (Fine)	ID	BH20-01	BH20-02	BH20-03	BH20-04	BH20-05	BH20-06		BH20-07	
				Depth(m)	0.45	0.75	0.9	1.2	0.75	0.75	2.3	0.3	1.9
				Date	2020-12-01	2020-12-01	2020-12-01	2020-12-02	2020-12-02	2020-12-02	2020-12-02	2020-12-02	2020-12-02
BTEX													
Benzene	mg/kg	0.005	0.0068		<0.0050	<0.0050	0.0091	0.0099	0.079	<0.0050	0.013	0.71	<0.0050
Toluene	mg/kg	0.05	0.08		<0.050	<0.050	0.19	0.24	0.60	<0.050	<0.050	3.7	<0.050
Ethylbenzene	mg/kg	0.01	0.018		<0.010	<0.010	0.054	0.040	0.095	<0.010	0.023	0.81	<0.010
Xylene (o)	mg/kg	0.02	-		<0.020	<0.020	0.045	0.042	0.18	<0.020	<0.020	2.3	<0.020
Xylene (m & p)	mg/kg	0.04	-		<0.040	<0.040	0.078	0.082	0.40	<0.040	<0.040	4.5	<0.040
Xylene Total	mg/kg	0.045	2.4		<0.045	<0.045	0.12	0.12	0.58	<0.045	<0.045	6.8	<0.045
Petroleum Hydrocarbons (PHCs)													
PHC F1 (C6-C10)	mg/kg	10	170		<10	<10	30	<10	<10	<10	<10	48	<10
PHC F1-BTEX (C6-C10-BTEX)	mg/kg	10	170		<10	<10	30	<10	<10	<10	<10	36	<10
PHC F2 (>C10-C16)	mg/kg	10	230		<10	<10	210	60	24	34	<10	56	<10
PHC F3 (>C16-C34)	mg/kg	50	2,500 5,000		94	150	1,400	590	430	200	98	390	<50
PHC F4 (>C34-C50)	mg/kg	50	6,600 10,000		<50	80	300	160	140	66	<50	74	<50

Notes:

-	Not sampled/not analyzed
EQL	Estimated Quantitation Limit
RPD	Relative Percent Difference
24	Exceeds 50% RPD
nc	Not calculated
	Concentration exceeds CCME Tier 1 Industrial (Fine) Guideline

Table 2.2: Petroleum Hydrocarbon Soil Analysis



	Unit	EQL	CCME Tier 1 Industrial (Fine)	ID	MW20-02	FD1	RPD	MW20-02	MW20-03	MW20-04		MW20-05	
				Depth(m)	0.75			4.5	0.6	0.45	1.5	1.2	3
				Date	2020-12-01	2020-12-01		2020-12-01	2020-12-01	2020-12-02	2020-12-02	2020-12-02	2020-12-02
BTEX													
Benzene	mg/kg	0.005	0.0068		0.024	0.043	56.7	<0.0050	0.015	0.0079	<0.0050	<0.0050	<0.0050
Toluene	mg/kg	0.05	0.08		<0.050	0.12	nc	<0.050	0.098	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	mg/kg	0.01	0.018		0.018	0.029	46.8	<0.010	0.024	0.019	<0.010	<0.010	<0.010
Xylene (o)	mg/kg	0.02	-		<0.020	0.069	nc	<0.020	0.064	0.039	<0.020	<0.020	<0.020
Xylene (m & p)	mg/kg	0.04	-		<0.040	0.11	nc	<0.040	0.12	0.058	<0.040	<0.040	<0.040
Xylene Total	mg/kg	0.045	2.4		<0.045	0.18	nc	<0.045	0.19	0.097	<0.045	<0.045	<0.045
Petroleum Hydrocarbons (PHCs)													
PHC F1 (C6-C10)	mg/kg	10	170		<10	<10	nc	<10	<10	<10	<10	<10	<10
PHC F1-BTEX (C6-C10-BTEX)	mg/kg	10	170		<10	<10	nc	<10	<10	<10	<10	<10	<10
PHC F2 (>C10-C16)	mg/kg	10	230		21	31	38.5	<10	<10	<10	<10	<10	<10
PHC F3 (>C16-C34)	mg/kg	50	2,500 5,000		790	2,000	86.7	54	330	81	<50	58	<50
PHC F4 (>C34-C50)	mg/kg	50	6,600 10,000		130	290	76.2	<50	180	<50	<50	<50	<50

Notes:

-	Not sampled/not analyzed
EQL	Estimated Quantitation Limit
RPD	Relative Percent Difference
24	Exceeds 50% RPD
nc	Not calculated
	Concentration exceeds CCME Tier 1 Industrial (Fine) Guideline



	Unit	EQL	CCME Tier 1 Industrial (Fine)	ID	MW20-06	FD2	RPD
				Depth(m)	0.76		
				Date	2020-12-02		
BTEX							
Benzene	mg/kg	0.005	0.0068		0.0092	0.0097	5.3
Toluene	mg/kg	0.05	0.08		0.082	<0.050	nc
Ethylbenzene	mg/kg	0.01	0.018		<0.010	<0.010	nc
Xylene (o)	mg/kg	0.02	-		0.032	<0.020	nc
Xylene (m & p)	mg/kg	0.04	-		0.057	<0.040	nc
Xylene Total	mg/kg	0.045	2.4		0.089	<0.045	nc
Petroleum Hydrocarbons (PHCs)							
PHC F1 (C6-C10)	mg/kg	10	170		<10	<10	nc
PHC F1-BTEX (C6-C10-BTEX)	mg/kg	10	170		<10	<10	nc
PHC F2 (>C10-C16)	mg/kg	10	230		<10	11	nc
PHC F3 (>C16-C34)	mg/kg	50	2,500 5,000		97	120	21.2
PHC F4 (>C34-C50)	mg/kg	50	6,600 10,000		<50	<50	nc

Notes:

-

EQL

RPD

24

nc

Not sampled/not analyzed

Estimated Quantitation Limit

Relative Percent Difference

Exceeds 50% RPD

Not calculated

Concentration exceeds CCME Tier 1 Industrial (Fine) Guideline

Table 2.3: Metals Soil Analysis



Parameters	Unit	EQL	CCME Tier 1 Industrial (Fine)	ID	BH20-01	BH20-02	BH20-06	BH20-07	BH20-08	MW20-02	FD1	RPD	MW20-03	
				Depth(m)	0.45	0.75	0.75	0.3	1.2	0.75			0.6	2.4
				Date	2020-12-01	2020-12-01	2020-12-02	2020-12-02	2020-12-02	2020-12-01	2020-12-01		2020-12-01	2020-12-01
Antimony	mg/kg	0.5	40		1.2	6.7	0.70	8.2	<0.50	2.4	2.6	8.0	10	0.87
Arsenic	mg/kg	1	12		7.7	16	8.8	11	7.1	9.1	11	18.9	12	8.2
Barium	mg/kg	1	2,000		210	310	150	200	230	180	260	36.4	340	210
Beryllium	mg/kg	0.4	8		0.74	0.55	0.70	<0.40	1.3	0.76	0.64	17.1	0.66	0.88
Cadmium	mg/kg	0.05	22		1.0	5.0	0.42	1.7	0.26	1.2	1.5	22.2	5.7	0.65
Calcium	mg/kg	0.89	-		-	-	-	-	-	200	140	35.3	-	-
Chromium (Total, III+VI)	mg/kg	1	87		52	70	41	18	57	39	39	0.0	65	40
Cobalt	mg/kg	0.5	300		9.9	40	10	6.2	16	9.7	9.6	1.0	17	11
Copper	mg/kg	1	91		45	370	38	930	35	87	130	39.6	230	39
Lead	mg/kg	0.5	600		71	590	26	320	17	91	230	86.6	710	50
Magnesium	mg/kg	0.59	-		-	-	-	-	-	220	190	14.6	-	-
Molybdenum	mg/kg	0.4	40		1.5	6.7	2.1	3.2	<0.40	3.3	3.9	16.7	4.7	0.90
Nickel	mg/kg	1	89		30	190	31	17	48	72	300	122.6	98	34
Potassium	mg/kg	0.77	-		-	-	-	-	-	400	380	5.1	-	-
Selenium	mg/kg	0.5	2.9		<0.50	0.87	0.51	1.3	<0.50	0.82	0.63	26.2	0.55	<0.50
Silver	mg/kg	0.2	40		<0.20	0.38	<0.20	<0.20	<0.20	<0.20	<0.20	nc	0.33	<0.20
Sodium	mg/kg	1.5	-		-	-	-	-	-	440	420	4.7	-	-
Thallium	mg/kg	0.1	1		0.20	0.16	0.19	0.20	0.39	0.20	0.18	10.5	0.19	0.24
Tin	mg/kg	1	300		3.9	34	1.8	28	1.4	6.7	57	157.9	300	4.3
Uranium	mg/kg	0.2	300		1.6	1.7	1.6	0.64	0.85	3.0	2.8	6.9	1.7	1.2
Vanadium	mg/kg	1	130		58	33	47	16	89	39	37	5.3	48	68
Zinc	mg/kg	10	410		350	3,500	130	990	120	440	570	25.7	2,200	420

Notes:

-

EQL

RPD

24

nc

Not sampled/not analyzed

Estimated Quantitation Limit

Relative Percent Difference

Exceeds 50% RPD

Not calculated

Concentration exceeds CCME Tier 1 Industrial (Fine) Guideline

Table 2.3: Metals Soil Analysis



Parameters	Unit	EQL	CCME Tier 1 Industrial (Fine)	ID	MW20-05	MW20-06	FD2	RPD	MW20-06	MW20-07
				Depth(m)	1.2	0.75			2.1	1.5
				Date	2020-12-02	2020-12-02			2020-12-02	2020-12-02
Antimony	mg/kg	0.5	40		0.52	<0.50	<0.50	nc	0.52	0.58
Arsenic	mg/kg	1	12		8.4	1.8	2.6	36.4	10	7.9
Barium	mg/kg	1	2,000		190	31	41	27.8	300	160
Beryllium	mg/kg	0.4	8		1.0	<0.40	<0.40	nc	1.1	0.87
Cadmium	mg/kg	0.05	22		0.32	<0.050	<0.050	nc	0.30	0.34
Calcium	mg/kg	0.89	-		33	-	-	nc	-	-
Chromium (Total, III+VI)	mg/kg	1	87		41	8.6	17	65.6	48	33
Cobalt	mg/kg	0.5	300		14	2.7	3.0	10.5	15	10
Copper	mg/kg	1	91		32	8.1	8.7	7.1	37	28
Lead	mg/kg	0.5	600		15	13	14	7.4	15	17
Magnesium	mg/kg	0.59	-		18	-	-	nc	-	-
Molybdenum	mg/kg	0.4	40		1.4	0.55	1.3	81.1	1.1	1.2
Nickel	mg/kg	1	89		41	6.6	7.6	14.1	44	31
Potassium	mg/kg	0.77	-		13	-	-	nc	-	-
Selenium	mg/kg	0.5	2.9		0.60	<0.50	<0.50	nc	<0.50	0.55
Silver	mg/kg	0.2	40		<0.20	<0.20	<0.20	nc	<0.20	<0.20
Sodium	mg/kg	1.5	-		94	-	-	nc	-	-
Thallium	mg/kg	0.1	1		0.27	<0.10	<0.10	nc	0.31	0.24
Tin	mg/kg	1	300		<1.0	<1.0	1.0	nc	1.1	1.0
Uranium	mg/kg	0.2	300		2.1	0.38	0.43	12.3	1.4	1.6
Vanadium	mg/kg	1	130		61	12	15	22.2	75	56
Zinc	mg/kg	10	410		84	21	24	13.3	94	91

Notes:

-

EQL

RPD

24

nc

Not sampled/not analyzed

Estimated Quantitation Limit

Relative Percent Difference

Exceeds 50% RPD

Not calculated

Concentration exceeds CCME Tier 1 Industrial (Fine) Guideline

Table 2.4: Polycyclic Aromatic Hydrocarbon Soil Analysis



Parameters	Unit	EQL	CCME Tier 1 Industrial (Fine)	ID	BH20-2	BH20-03		BH20-04	BH20-05		BH20-06	MW20-03	MW20-03
				Depth(m)	0.75	0.9	2.1	1.2	0.75	1.4	0.75	0.6	2.4
				Date	2020-12-01	2020-12-01	2020-12-01	2020-12-02	2020-12-02	2020-12-02	2020-12-02	2020-12-01	2020-12-01
1-Methylnaphthalene	mg/kg	0.005	-		0.0097	3.5	0.056	1.6	0.28	0.12	0.046	0.036	<0.0050
2-methylnaphthalene	mg/kg	0.005	-		0.015	7.7	0.065	1.5	0.35	0.15	0.050	0.042	<0.0050
Acenaphthene	mg/kg	0.005	0.28		<0.0050	24	0.31	6.9	0.10	0.076	0.041	0.050	<0.0050
Acenaphthylene	mg/kg	0.005	320		0.010	0.82	0.019	0.30	0.070	0.041	0.0081	0.034	<0.0050
Acridine	mg/kg	0.01	-		<0.010	0.89	0.017	0.51	0.012	0.019	<0.010	<0.010	<0.010
Anthracene	mg/kg	0.004	32		0.023	16	0.26	4.5	0.26	0.23	0.046	0.14	<0.0040
Benz(a)anthracene	mg/kg	0.005	10		0.060	15	0.43	3.1	0.84	0.98	0.073	0.34	<0.0050
Benzo(a) pyrene	mg/kg	0.005	1.4		0.070	12	0.41	2.0	0.72	0.98	0.065	0.34	<0.0050
Benzo(b+j)fluoranthene	mg/kg	0.005	10		0.091	18	0.54	2.8	0.92	1.2	0.087	0.42	<0.0050
Benzo(c)phenanthrene	mg/kg	0.005	-		0.011	2.0	0.078	0.61	0.15	0.14	0.012	0.059	<0.0050
Benzo(e)pyrene	mg/kg	0.005	-		0.058	10	0.32	1.5	0.50	0.67	0.050	0.25	<0.0050
Benzo(g,h,i)perylene	mg/kg	0.005	-		0.058	7.7	0.24	1.1	0.38	0.59	0.037	0.25	<0.0050
Benzo(k)fluoranthene	mg/kg	0.005	10		0.032	5.0	0.17	1.0	0.33	0.43	0.030	0.15	<0.0050
Chrysene	mg/kg	0.005	-		0.054	13	0.37	2.6	0.77	0.83	0.065	0.29	<0.0050
Dibenz(a,h)anthracene	mg/kg	0.005	10		0.012	1.4	0.051	0.35	0.11	0.15	0.0089	0.056	<0.0050
Fluoranthene	mg/kg	0.005	180		0.12	66	1.3	19	1.8	1.8	0.22	0.63	<0.0050
Fluorene	mg/kg	0.005	0.25		0.0067	17	0.23	5.2	0.10	0.062	0.044	0.051	<0.0050
Indeno(1,2,3-c,d)pyrene	mg/kg	0.005	10		0.058	7.4	0.24	1.2	0.43	0.63	0.040	0.25	<0.0050
Naphthalene	mg/kg	0.005	0.013		0.0087	13	0.16	2.8	0.34	0.11	0.031	0.035	<0.0050
Perylene	mg/kg	0.005	-		0.031	2.8	0.092	0.49	0.14	0.22	0.039	0.11	<0.0050
Phenanthrene	mg/kg	0.005	0.046		0.063	69	1.2	15	1.2	0.78	0.20	0.49	<0.0050
Pyrene	mg/kg	0.005	100		0.11	53	1.4	13	1.7	1.6	0.18	0.63	<0.0050
Quinoline	mg/kg	0.01	-		<0.010	0.49	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Notes:

-	Not sampled/not analyzed
EQL	Estimated Quantitation Limit
RPD	Relative Percent Difference
24	Exceeds 50% RPD
nc	Not calculated
	Concentration exceeds CCME Tier 1 Industrial (Fine) Guideline



Parameters	Unit	EQL	Applicable Guideline	ID	MW20-01	MW20-05
				Depth(m)	0.75	1.2
				Date	2020-12-01	2020-12-02
Aldicarb	mg/kg	5	-		<5.0	<5.0
Atrazine	mg/kg	5	-		<5.0	<5.0
Azinophos methyl	mg/kg	5	-		<5.0	<5.0
Bendiocarb	mg/kg	5	-		<5.0	<5.0
Carbaryl	mg/kg	5	-		<5.0	<5.0
Carbofuran	mg/kg	5	-		<5.0	<5.0
Chlorpyrifos	mg/kg	5	-		<5.0	<5.0
Cyanazine	mg/kg	5	-		<5.0	<5.0
Demeton-S	mg/kg	5	-		<5.0	<5.0
Diazinon	mg/kg	5	-		<5.0	<5.0
Dichlorvos	mg/kg	5	-		<5.0	<5.0
Dimethoate	mg/kg	5	-		<5.0	<5.0
Ethion	mg/kg	5	-		<5.0	<5.0
Fenthion	mg/kg	5	-		<5.0	<5.0
Fonofos	mg/kg	5	-		<5.0	<5.0
Malathion	mg/kg	5	-		<5.0	<5.0
Methyl parathion	mg/kg	5	-		<5.0	<5.0
Metolachlor	mg/kg	10	-		<10	<10
Mevinphos (Phosdrin)	mg/kg	5	-		<5.0	<5.0
Parathion	mg/kg	5	-		<5.0	<5.0
Phorate	mg/kg	5	-		<5.0	<5.0
Phosmet	mg/kg	5	-		<5.0	<5.0
Prometryn	mg/kg	5	-		<5.0	<5.0
Ronnel	mg/kg	5	-		<5.0	<5.0
Simazine	mg/kg	5	-		<5.0	<5.0
Terbufos	mg/kg	5	-		<5.0	<5.0
Triallate	mg/kg	5	-		<5.0	<5.0
Trifluralin	mg/kg	5	-		<5.0	<5.0

Notes:

-

EQL

RPD

24

nc

Not sampled/not analyzed

Estimated Quantitation Limit

Relative Percent Difference

Exceeds 50% RPD

Not calculated

No applicable guideline



Parameters	Unit	EQL	HC Drinking Water Quality Guidelines - MAC	ID	MW20-01	MW20-03	MW20-06
				Date	2020-12-16	2020-12-16	2020-12-16
Alkalinity							
Carbonate	mg/L	1	-		<1.0	<1.0	<1.0
Alkalinity (P) as CaCO3	mg/L	1	-		<1.0	<1.0	<1.0
Alkalinity (total)	mg/L	1	-		1,000	1,800	880
Bicarbonate	mg/L	1	-		1,200	2,200	1,100
Hydroxide	mg/L	1	-		<1.0	<1.0	<1.0
General Chemistry							
Hardness as CaCO3 (Measured)	mg/L	0.5	-		1,600	2,800	1,700
Phosphorus (filtered)	mg/L	0.1	-			0.36	0.25
Chloride (filtered)	mg/L	1	-		170	700	98
Electrical Conductivity (Lab)	µS/cm	2	-		2,400	5,600	3,400
Nitrate (as N) (filtered)	mg/L	0.01	10		0.034	0.011	0.69
Nitrate (as NO3-) (filtered)	mg/L	0.044	45		0.15	0.048	3.1
Nitrite (as N) (filtered)	mg/L	0.01	1		<0.010	<0.010	0.023
Nitrite (as NO2-) (filtered)	mg/L	0.033	3		<0.033	<0.033	0.077
Nitrite + Nitrate as N	mg/L	0.014	-		0.034	<0.014	0.72
pH (Lab)	pH Units		-		7.64	7.66	7.67
Sulphate (filtered)	mg/L	2	-		240	720	1,300
Calculated Parameters							
Anions Total	meq/L		-		30	71	48
Cations Total	meq/L		-		37	75	41
Ionic Balance	%		-		9.5	2.3	8.4
Total Dissolved Solids (Calc.)	mg/L	10	-		1,600	3,700	2,600

Notes:

-

EQL

nc

Not sampled/not analyzed

Estimated Quantitation Limit

Not calculated

Concentration exceeds Health Canada Drinking Water Quality Guidelines - MAC

Table 3.2: Petroleum Hydrocarbon Groundwater Analysis



Parameters	Unit	EQL	HC Drinking Water Quality Guidelines - MAC	ID	MW20-02	MW20-03	FD-1	RPD	MW20-04	MW20-05	MW20-06	MW20-07
				Date	2020-12-16	2020-12-16	2020-12-16		2020-12-16	2020-12-16	2020-12-16	2020-12-16
BTEX												
Benzene	mg/L	0.0004	0.005		<0.00040	<0.00040	<0.00040	nc	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.0004	0.06		<0.00040	<0.00040	<0.00040	nc	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0004	0.14		<0.00040	<0.00040	<0.00040	nc	<0.00040	<0.00040	<0.00040	<0.00040
Xylene (o)	mg/L	0.0004	-		<0.00040	<0.00040	<0.00040	nc	<0.00040	<0.00040	<0.00040	<0.00040
Xylene (m & p)	mg/L	0.0008	-		<0.00080	<0.00080	<0.00080	nc	<0.00080	<0.00080	<0.00080	<0.00080
Xylene Total	mg/L	0.00089	0.09		<0.00089	<0.00089	<0.00089	nc	<0.00089	<0.00089	<0.00089	<0.00089
Petroleum Hydrocarbons (PHCs)												
PHC F1 (C6-C10)	mg/L	0.1	-		<0.1	<0.1	<0.1	nc	<0.1	<0.1	<0.1	<0.1
PHC F1-BTEX (C6-C10-BTEX)	mg/L	0.1	-		<0.1	<0.1	<0.1	nc	<0.1	<0.1	<0.1	<0.1
PHC F2 (>C10-C16)	mg/L	0.1	-		<0.10	<0.10	<0.10	nc	<0.10	<0.10	<0.10	<0.10
PHC F3 (>C16-C34)	mg/L	0.1	-		<0.10	<0.10	<0.10	nc	<0.10	<0.10	<0.10	<0.10
PHC F4 (>C34-C50)	mg/L	0.2	-		<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20	<0.20

Notes:

-

EQL

RPD

24

nc

Not sampled/not analyzed

Estimated Quantitation Limit

Relative Percent Difference

Exceeds 30% RPD

Not calculated

Concentration exceeds Health Canada Drinking Water Quality Guidelines - MAC

Table 3.3: Metals Groundwater Analysis



Parameters	Unit	EQL	HC Drinking Water Quality Guidelines - MAC	ID	MW20-02	MW20-03	FD-1	RPD	MW20-05	MW20-06	MW20-07
				Date	2020-12-16	2020-12-16	2020-12-16		2020-12-16	2020-12-16	2020-12-16
Aluminium (filtered)	mg/L	0.003	-		<0.0030	<0.0030	<0.0030	nc	<0.0030	<0.0030	<0.0030
Antimony (filtered)	mg/L	0.0006	0.006		<0.00060	<0.00060	<0.00060	nc	<0.00060	<0.00060	<0.00060
Arsenic (filtered)	mg/L	0.0002	0.01		0.0014	0.0058	0.0058	0.0	0.00094	0.0020	0.0015
Barium (filtered)	mg/L	0.01	2		0.015	0.081	0.079	2.5	0.039	0.076	0.11
Beryllium (filtered)	mg/L	0.001	-		<0.0010	<0.0010	<0.0010	nc	<0.0010	<0.0010	<0.0010
Boron (filtered)	mg/L	0.02	5		0.14	1.9	1.9	0.0	0.15	0.18	0.14
Cadmium (filtered)	mg/L	0.00002	0.007		0.00023	0.00011	0.00016	37.0	0.00018	0.00011	0.00079
Calcium (filtered)	mg/L	0.3	-		570	220	230	4.4	550	240	540
Chromium (Total, III+VI) (filtered)	mg/L	0.001	-		<0.0010	<0.0010	0.0011	nc	<0.0010	<0.0010	<0.0010
Cobalt (filtered)	mg/L	0.0003	-		0.0090	0.0013	0.0014	7.4	0.0061	0.00067	0.00056
Copper (filtered)	mg/L	0.0002	2		0.023	0.0080	0.0078	2.5	0.0053	0.012	0.0071
Iron (filtered)	mg/L	0.06	-		<0.060	<0.060	<0.060	nc	<0.060	<0.060	<0.060
Lead (filtered)	mg/L	0.0002	0.005		<0.00020	0.00028	0.00042	40.0	<0.00020	<0.00020	<0.00020
Magnesium (filtered)	mg/L	0.2	-		410	540	530	1.9	300	280	330
Manganese (filtered)	mg/L	0.004	0.12		4.3	1.1	1.0	9.5	4.3	0.42	0.58
Mercury (filtered)	mg/L	0.0000019	0.001		0.0000022	0.0000023	-	nc	<0.0000019	0.0000021	<0.0000019
Molybdenum (filtered)	mg/L	0.0002	-		0.0041	0.011	0.011	0.0	0.0018	0.0080	0.0027
Nickel (filtered)	mg/L	0.0005	-		0.060	0.020	0.020	0.0	0.020	0.012	0.012
Potassium (filtered)	mg/L	0.3	-		13	8.2	8.4	2.4	13	11	18
Selenium (filtered)	mg/L	0.0002	0.05		0.0014	0.00041	0.00045	9.3	0.00051	0.00074	0.0022
Lithium (filtered)	mg/L	0.02	-		0.94	0.51	0.52	1.9	0.83	0.50	0.78
Silver (filtered)	mg/L	0.0001	-		<0.00010	<0.00010	<0.00010	nc	<0.00010	<0.00010	<0.00010
Silicon (filtered)	mg/L	0.1	-		12	11	10	9.5	12	12	12
Sodium (filtered)	mg/L	0.5	-		250	440	440	0.0	180	130	200
Strontium (filtered)	mg/L	0.02	7		3.8	2.2	2.2	0.0	3.5	1.9	3.2
Sulphur as S (filtered)	mg/L	0.2	-		830	230	220	4.4	750	300	810
Titanium (filtered)	mg/L	0.001	-		<0.0010	0.0016	0.0015	6.5	<0.0010	<0.0010	<0.0010
Thallium (filtered)	mg/L	0.0002	-		<0.00020	<0.00020	0.00029	nc	<0.00020	<0.00020	<0.00020
Tin (filtered)	mg/L	0.001	-		<0.0010	<0.0010	<0.0010	nc	0.0032	0.0019	0.0034
Uranium (filtered)	mg/L	0.0001	0.02		0.19	0.035	0.035	0.0	0.15	0.11	0.14
Vanadium (filtered)	mg/L	0.001	-		0.0016	0.021	0.021	0.0	<0.0010	0.0011	<0.0010
Zinc (filtered)	mg/L	0.003	-		0.0050	0.049	0.048	2.1	0.010	0.024	0.19

Notes:

-	Not sampled/not analyzed
EQL	Estimated Quantitation Limit
RPD	Relative Percent Difference
24	Exceeds 30% RPD
nc	Not calculated
	Concentration exceeds Health Canada Drinking Water Quality Guidelines - MAC

Table 3.4: Polycyclic Aromatic Hydrocarbon Metals Analysis



Parameters	Unit	EQL	HC Drinking Water Quality Guidelines - MAC	ID	MW20-02	MW20-03	FD-1	RPD	MW20-04	MW20-06
				Date	2020-12-16	2020-12-16	2020-12-16		2020-12-16	2020-12-16
1-Methylnaphthalene	mg/L	0.0001	-		<0.00010	<0.00010	<0.00010	nc	<0.00010	<0.00010
2-methylnaphthalene	mg/L	0.0001	-		<0.00010	<0.00010	<0.00010	nc	<0.00010	<0.00010
Acenaphthene	mg/L	0.0001	-		<0.00010	<0.00010	<0.00010	nc	0.00019	<0.00010
Acenaphthylene	mg/L	0.0001	-		<0.00010	<0.00010	<0.00010	nc	<0.00010	<0.00010
Acridine	mg/L	0.00004	-		<0.000040	<0.000040	<0.000040	nc	<0.000040	<0.000040
Anthracene	mg/L	0.00001	-		<0.000010	<0.000010	<0.000010	nc	0.000012	<0.000010
Benz(a)anthracene	mg/L	0.0000085	-		<0.0000085	<0.0000085	<0.0000085	nc	<0.0000085	<0.0000085
Benzo(a) pyrene	mg/L	0.0000075	0.00004		<0.0000075	<0.0000075	<0.0000075	nc	<0.0000075	<0.0000075
Benzo(b+j)fluoranthene	mg/L	0.0000085	-		<0.0000085	<0.0000085	<0.0000085	nc	<0.0000085	<0.0000085
Benzo(c)phenanthrene	mg/L	0.00005	-		<0.000050	<0.000050	<0.000050	nc	<0.000050	<0.000050
Benzo(e)pyrene	mg/L	0.00005	-		<0.000050	<0.000050	<0.000050	nc	<0.000050	<0.000050
Benzo(g,h,i)perylene	mg/L	0.0000085	-		<0.0000085	<0.0000085	<0.0000085	nc	<0.0000085	<0.0000085
Benzo(k)fluoranthene	mg/L	0.0000085	-		<0.0000085	<0.0000085	<0.0000085	nc	<0.0000085	<0.0000085
Chrysene	mg/L	0.0000085	-		<0.0000085	<0.0000085	<0.0000085	nc	<0.0000085	<0.0000085
Dibenz(a,h)anthracene	mg/L	0.0000075	-		<0.0000075	<0.0000075	<0.0000075	nc	<0.0000075	<0.0000075
Fluoranthene	mg/L	0.00001	-		<0.000010	<0.000010	<0.000010	nc	<0.000010	<0.000010
Fluorene	mg/L	0.00005	-		<0.000050	<0.000050	<0.000050	nc	0.000065	<0.000050
Indeno(1,2,3-c,d)pyrene	mg/L	0.0000085	-		<0.0000085	<0.0000085	<0.0000085	nc	<0.0000085	<0.0000085
Naphthalene	mg/L	0.0001	-		<0.00010	<0.00010	<0.00010	nc	<0.00010	<0.00010
Perylene	mg/L	0.00005	-		<0.000050	<0.000050	<0.000050	nc	<0.000050	<0.000050
Phenanthrene	mg/L	0.00005	-		<0.000050	<0.000050	<0.000050	nc	0.000070	<0.000050
Pyrene	mg/L	0.00002	-		<0.000020	<0.000020	<0.000020	nc	<0.000020	<0.000020
Quinoline	mg/L	0.0002	-		<0.00020	<0.00020	<0.00020	nc	<0.00020	<0.00020

Notes:

-

EQL

RPD

24

nc

Not sampled/not analyzed

Estimated Quantitation Limit

Relative Percent Difference

Exceeds 30% RPD

Not calculated

Concentration exceeds Health Canada Drinking Water Quality Guidelines - MAC



Parameters	Unit	EQL	HC Drinking Water Quality Guidelines - MAC	ID	MW20-01	MW20-05
				Date	2020-12-16	2020-12-16
Aldicarb	mg/L	0.005	-		<0.0050	<0.0050
Atrazine	mg/L	0.001	-		<0.0010	<0.0010
Azinophos methyl	mg/L	0.001	0.02		<0.0010	<0.0010
Bendiocarb	mg/L	0.002	-		<0.0020	<0.0020
Carbaryl	mg/L	0.005	0.09		<0.0050	<0.0050
Carbofuran	mg/L	0.005	0.09		<0.0050	<0.0050
Chlorpyrifos	mg/L	0.002	0.09		<0.0020	<0.0020
Cyanazine	mg/L	0.005	-		<0.0050	<0.0050
Demeton-S	mg/L	0.002	-		<0.0020	<0.0020
Diazinon	mg/L	0.002	0.02		<0.0020	<0.0020
Dichlorvos	mg/L	0.002	-		<0.0020	<0.0020
Dimethoate	mg/L	0.002	0.02		<0.0020	<0.0020
Ethion	mg/L	0.001	-		<0.0010	<0.0010
Fenthion	mg/L	0.001	-		<0.0010	<0.0010
Fonofos	mg/L	0.002	-		<0.0020	<0.0020
Malathion	mg/L	0.002	0.19		<0.0020	<0.0020
Methyl parathion	mg/L	0.002	-		<0.0020	<0.0020
Metolachlor	mg/L	0.005	0.05		<0.0050	<0.0050
Mevinphos (Phosdrin)	mg/L	0.002	-		<0.0020	<0.0020
Parathion	mg/L	0.002	-		<0.0020	<0.0020
Phorate	mg/L	0.001	0.002		<0.0010	<0.0010
Phosmet	mg/L	0.002	-		<0.0020	<0.0020
Prometryn	mg/L	0.001	-		<0.0010	<0.0010
Ronnel	mg/L	0.002	-		<0.0020	<0.0020
Simazine	mg/L	0.002	0.01		<0.0020	<0.0020
Terbufos	mg/L	0.001	0.001		<0.0010	<0.0010
Triallate	mg/L	0.005	-		<0.0050	<0.0050
Trifluralin	mg/L	0.005	-		<0.0050	<0.0050

Notes:

-

EQL

RPD

24

nc

Not sampled/not analyzed

Estimated Quantitation Limit

Relative Percent Difference

Exceeds 30% RPD

Not calculated

Concentration exceeds Health Canada Drinking Water Quality Guidelines - MAC

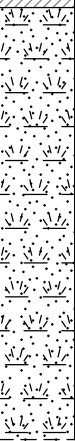
Appendix A

Borehole Logs



Dillon Consulting Limited
1558 Willson Place
Winnipeg, Manitoba R3T 0Y4
Tel. 204-453-2301
Fax. 204-452-4412

Client: Tervita Corporation Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725 Location: Laydown Area
Drilling Co.: Maple Leaf Drilling Drilling Method: Solid Stem Auger
Supervised by: MJT Date Started: 11-30-2020 Date Completed: 11-30-2020

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Notes	Sample					Depth Scale (m)
					Method	Number	N Value	Rec %	VOC (ppm or %LEL)	
	Gravel Fill									
0.5	Grey Clay - Stiff, Medium Plasticity, Dry to Moist, Some Cobbles.		0.45		G				15 ppm	0.5
1.0										1.0
1.5	Black Organic Clay - Moist, Medium Stiff, Medium Plasticity, Organic Material (wood), Some Cobbles ~1cm wide, Some Silt Pockets ~0.5cm wide, Organic Odour. Refusal at 1.8m (concrete peices)		1.2		G				5 ppm	1.5
			1.8							

DILLON BH P&H BH LOGS.GPJ DILLON TEMPLATE.GDT 01-27-21

LITHOLOGY SYMBOLS

 Fill (made ground)
 Organics

 Clay

SAMPLE TYPE

 Grab Sample



Dillon Consulting Limited
1558 Willson Place
Winnipeg, Manitoba R3T 0Y4
Tel. 204-453-2301
Fax. 204-452-4412

Client: <u>Tervita Corporation</u>	Project: <u>Phase II ESA 70 Roderick Street</u>
Project No.: <u>20-3725</u>	Location: <u>Laydown Area</u>
Drilling Co.: <u>Maple Leaf Drilling</u>	Drilling Method: <u>Solid Stem Auger</u>
Supervised by: <u>MJT</u>	Date Started: <u>11-30-2020</u> Date Completed: <u>11-30-2020</u>

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Notes	Sample					Depth Scale (m)
					Method	Number	N Value	Rec %	VOC (ppm or %LEL)	
	Gravel fill									
0.5	Black Organic Clay - Moist, Some Rocks, Trace Silt Pockets, Low Plasticity, Some Wood Material.		0.3							0.5
1.0	Dark Grey to Black Clay - Moist, Medium Stiff, Medium Plasticity, Silt Pockets, Trace Rocks.		0.9		G				10 ppm	1.0
1.5					G				ND	1.5
2.0					G				ND	2.0
2.5	Light Brown Clayey Silt - High Plasticity, Soft, Wet, Some Rocks.		2.1		G				ND	2.5
3.0					G				ND	3.0

DILLON BH P&H BH LOGS.GPJ DILLON TEMPLATE.GDT 01-27-21

LITHOLOGY SYMBOLS

 Fill (made ground)
 Clayey Silt

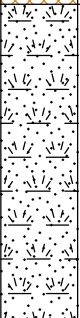
 Clay

SAMPLE TYPE

 Grab Sample



Client: Tervita Corporation Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725 Location: Laydown Area
Drilling Co.: Maple Leaf Drilling Drilling Method: Solid Stem Auger
Supervised by: MJT Date Started: 11-30-2020 Date Completed: 11-30-2020

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Notes	Sample					Depth Scale (m)
					Method	Number	N Value	Rec %	VOC (ppm or %LEL)	
	Gravel Fill									
0.5	Black to Brown Treated Wood Material mixed with gravel/Clay, Strong PAH Odour.		0.45							0.5
1.0					G				120 ppm	1.0
1.5	Dark Grey Clay - Stiff, Organic Odour, Some Silt Pockets, Moist, Medium Plasticity, Faint PAH odour up to 2.2m.		1.2		G				85 ppm	1.5
2.0					G				25 ppm	2.0
2.5										2.5
3.0					G				ND	3.0

DILLON BH P&H BH LOGS.GPJ DILLON TEMPLATE.GDT 01-27-21

LITHOLOGY SYMBOLS

 Fill (made ground)
 Clay

 Organics

SAMPLE TYPE

 Grab Sample



Client: Tervita Corporation Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725 Location: Laydown Area
Drilling Co.: Maple Leaf Drilling Drilling Method: Solid Stem Auger
Supervised by: MJT Date Started: 12-01-2020 Date Completed: 12-01-2020

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Notes	Sample					Depth Scale (m)
					Method	Number	N Value	Rec %	VOC (ppm or %LEL)	
	Gravel Fill									
0.5	Grey Clay - Stiff, Low Plasticity, Damp, Large Silt Pockets ~3cm wide, Some Cobbles.		0.45							0.5
1.0	Black Organics (Wood) + Clay/Sand - Strong PAH Odour, Some Sand, Some Gravel (Medium Grain Size), Moist to Wet, Refusal at 1.5m.		1							1.0
1.5			1.5							1.5

DILLON BH P&H BH LOGS.GPJ DILLON TEMPLATE.GDT 01-27-21

LITHOLOGY SYMBOLS

 Fill (made ground)
 Organics

 Clay

SAMPLE TYPE

 Grab Sample



Dillon Consulting Limited
1558 Willson Place
Winnipeg, Manitoba R3T 0Y4
Tel. 204-453-2301
Fax. 204-452-4412

Client: Tervita Corporation Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725 Location: Laydown Area
Drilling Co.: Maple Leaf Drilling Drilling Method: Solid Stem Auger
Supervised by: MJT Date Started: 12-01-2020 Date Completed: 12-01-2020

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Notes	Sample					Depth Scale (m)
					Method	Number	N Value	Rec %	VOC (ppm or %LEL)	
	Gravel Fill									
0.5	Grey Clay - Stiff, Medium Plasticity, PAH Odour, Damp, Trace ~2cm wide Silt Pockets.		0.3		G				15 ppm	0.5
	Black Organics Clay - Faint PAH Odour, Damp, Wood Material.		0.6		G				25 ppm	
1.0	Grey Clay - Pockets of Organics Clay (Black to Brown), Stiff, Medium Plasticity, Some Silt Pockets, Refusal at 1.5m.		0.9		G				10 ppm	1.0
1.5			1.5							1.5

DILLON BH P&H BH LOGS.GPJ DILLON TEMPLATE.GDT 01-27-21

LITHOLOGY SYMBOLS

Fill (made ground)
 Organics

Clay

SAMPLE TYPE

Grab Sample



Client: Tervita Corporation Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725 Location: Laydown Area
Drilling Co.: Maple Leaf Drilling Drilling Method: Solid Stem Auger
Supervised by: MJT Date Started: 12-01-2020 Date Completed: 12-01-2020

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Notes	Sample					Depth Scale (m)
					Method	Number	N Value	Rec %	VOC (ppm or %LEL)	
	Gravel Fill									
0.5	Grey Clay - Stiff, Low Plasticity, Damp, Some Cobbles ~2cm wide, Some Silt Pockets ~1cm wide, No Odour.		0.15							0.5
1.0	Black to Dark Brown Organics Clay - Sandy Clay from 1-1.2m, Wet, Strong Organic Odour, Some Cobbles + Gravel (Medium grain size).		0.76		G				10 ppm	1.0
1.5	Dark Grey Clay - Moist (Increased Moisture With Depth), Medium-High Plasticity, Some Pockets of Silt, Organic Odour.		1.5		G				5 ppm	1.5
2.0										2.0
2.5					G				ND	2.5
3.0					G				ND	3.0

DILLON BH P&H BH LOGS.GPJ DILLON TEMPLATE.GDT 01-27-21

LITHOLOGY SYMBOLS

 Fill (made ground)
 Organics

 Clay

SAMPLE TYPE

 Grab Sample



Dillon Consulting Limited
1558 Willson Place
Winnipeg, Manitoba R3T 0Y4
Tel. 204-453-2301
Fax. 204-452-4412

Client: <u>Tervita Corporation</u>	Project: <u>Phase II ESA 70 Roderick Street</u>
Project No.: <u>20-3725</u>	Location: <u>South Property line</u>
Drilling Co.: <u>Maple Leaf Drilling</u>	Drilling Method: <u>Solid Stem Auger</u>
Supervised by: <u>MJT</u>	Date Started: <u>12-01-2020</u> Date Completed: <u>12-01-2020</u>

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Notes	Sample					Depth Scale (m)
					Method	Number	N Value	Rec %	VOC (ppm or %LEL)	
	Top Soil									
0.5	Light Brown Sandy Gravel - Medium Grain Sand, Some Cobbles ~1-2cm wide.		0.3		G				45 ppm	0.5
1.0										1.0
1.5	Dark Grey Clay - Stiff, Damp, Pockets of Sand at 1.5m, Trace Pockets of Silt, Low-Medium Plasticity.		1.2		G				45 ppm	1.5
2.0	Light Brown Clay - Wet, High Plasticity starts at 4.5m, Trace Cobbles.		1.9		G				20 ppm	2.0
2.5										2.5
3.0					G				ND	3.0
3.5										3.5
4.0					G				ND	4.0
4.5					G				ND	4.5
5.0										5.0
5.5					G				ND	5.5
6.0			6		G				ND	6.0

DILLON BH P&H BH LOGS.GPJ DILLON TEMPLATE.GDT 01-27-21

LITHOLOGY SYMBOLS

Organics
 Clay

Sandy Gravel

SAMPLE TYPE

Grab Sample



Dillon Consulting Limited
1558 Willson Place
Winnipeg, Manitoba R3T 0Y4
Tel. 204-453-2301
Fax. 204-452-4412

Client: <u>Tervita Corporation</u>	Project: <u>Phase II ESA 70 Roderick Street</u>
Project No.: <u>20-3725</u>	Location: <u>West Property Line</u>
Drilling Co.: <u>Maple Leaf Drilling</u>	Drilling Method: <u>Solid Stem Auger</u>
Supervised by: <u>MJT</u>	Date Started: <u>12-01-2020</u> Date Completed: <u>12-01-2020</u>

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Notes	Sample					Depth Scale (m)
					Method	Number	N Value	Rec %	VOC (ppm or %LEL)	
0.5	Gravelly Clay - Moist, Medium Grain Size Gravel, Some Cobbles.									0.5
1.0	Dark Gray to Black Clay - Stiff, Low Plasticity, Some Silt Pockets ~1cm Wide, Damp.		0.6		G				15 ppm	1.0
1.5	Dark Gray Clay - Medium Plasticity, Damp-Moist (increased moisture with depth), Turns to Brown at 3m, Wet at 3.6m.		1.2		G				10 ppm	1.5
2.0					G				ND	2.0
2.5										2.5
3.0					G				ND	3.0
3.5										3.5
4.0					G				ND	4.0
4.5					G				ND	4.5
5.0										5.0
5.5					G				ND	5.5
6.0			6		G				ND	6.0

DILLON BH P&H BH LOGS.GPJ DILLON TEMPLATE.GDT 01-27-21

LITHOLOGY SYMBOLS

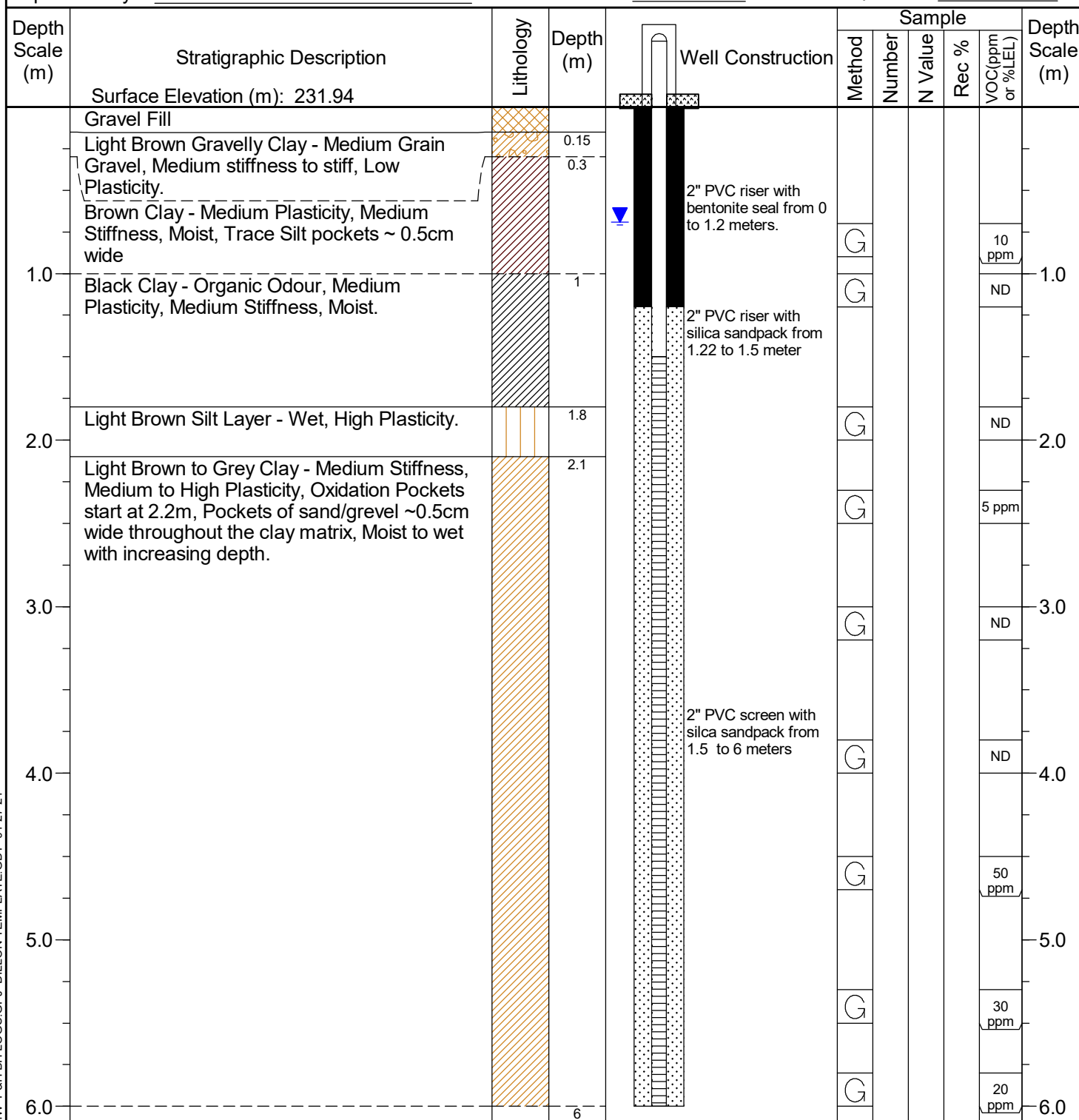
Gravelly Clay

Clay

SAMPLE TYPE

Grab Sample

Client: Tervita Corporation	Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725	Location: Next to Chemical Storage
Drilling Co.: Maple Leaf Drilling	Drilling Method: Solid Stem Auger
Supervised by: MJT	Date Started: 11-30-20 Date Completed: 11-30-20



DILLON MW P&H BH LOGS.GPJ DILLON TEMPLATE.GDT 01-27-21

Static Water Level (231.252m asl)

LITHOLOGY SYMBOLS

Fill (made ground)
 Gravelly Clay
 Clay

Silt

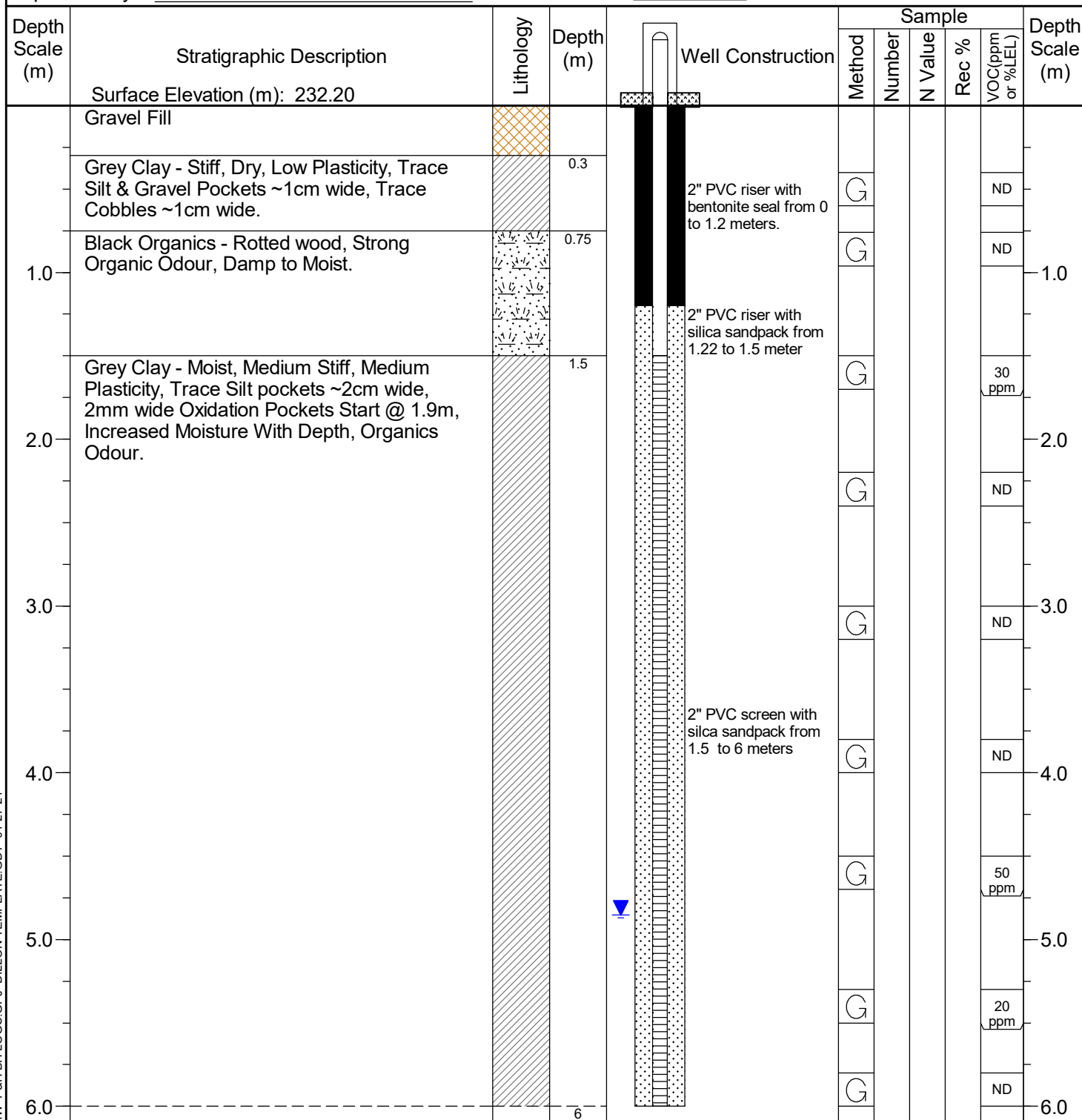
SAMPLE TYPE

Grab Sample



MW20-02

Client: Tervita Corporation Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725 Location: Next to Used Oil Area
Drilling Co.: Maple Leaf Drilling Drilling Method: Solid Stem Auger
Supervised by: MJT Date Started: 11-30-20 Date Completed: 11-30-20



Static Water Level (227.342m asl)

LITHOLOGY SYMBOLS

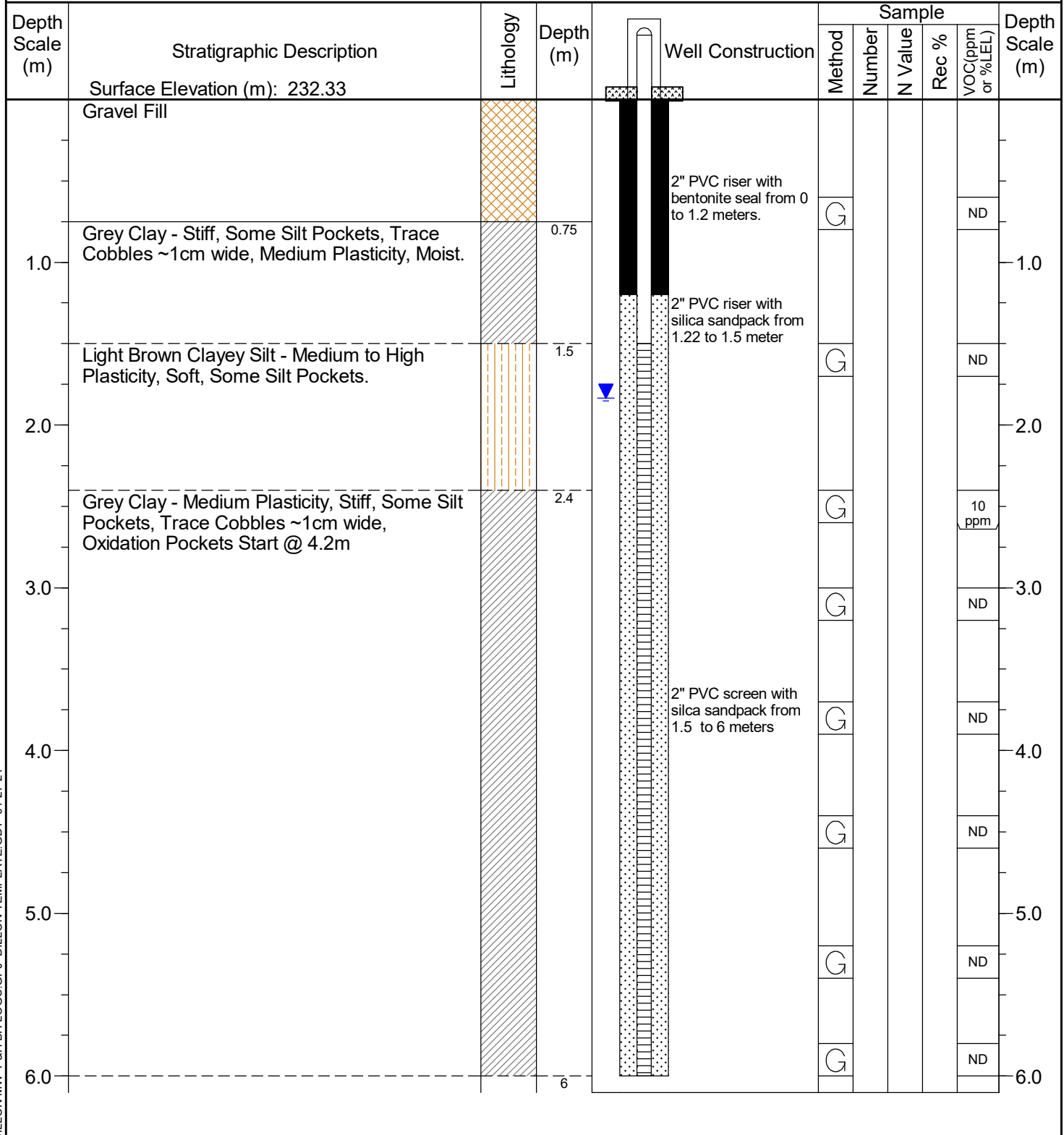
Fill (made ground)
 Organics

Clay

SAMPLE TYPE

Grab Sample

Client: Tervita Corporation	Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725	Location: Next to Timber Storage
Drilling Co.: Maple Leaf Drilling	Drilling Method: Solid Stem Auger
Supervised by: MJT	Date Started: 11-30-20 Date Completed: 11-30-20



Static Water Level (230.498m asl)

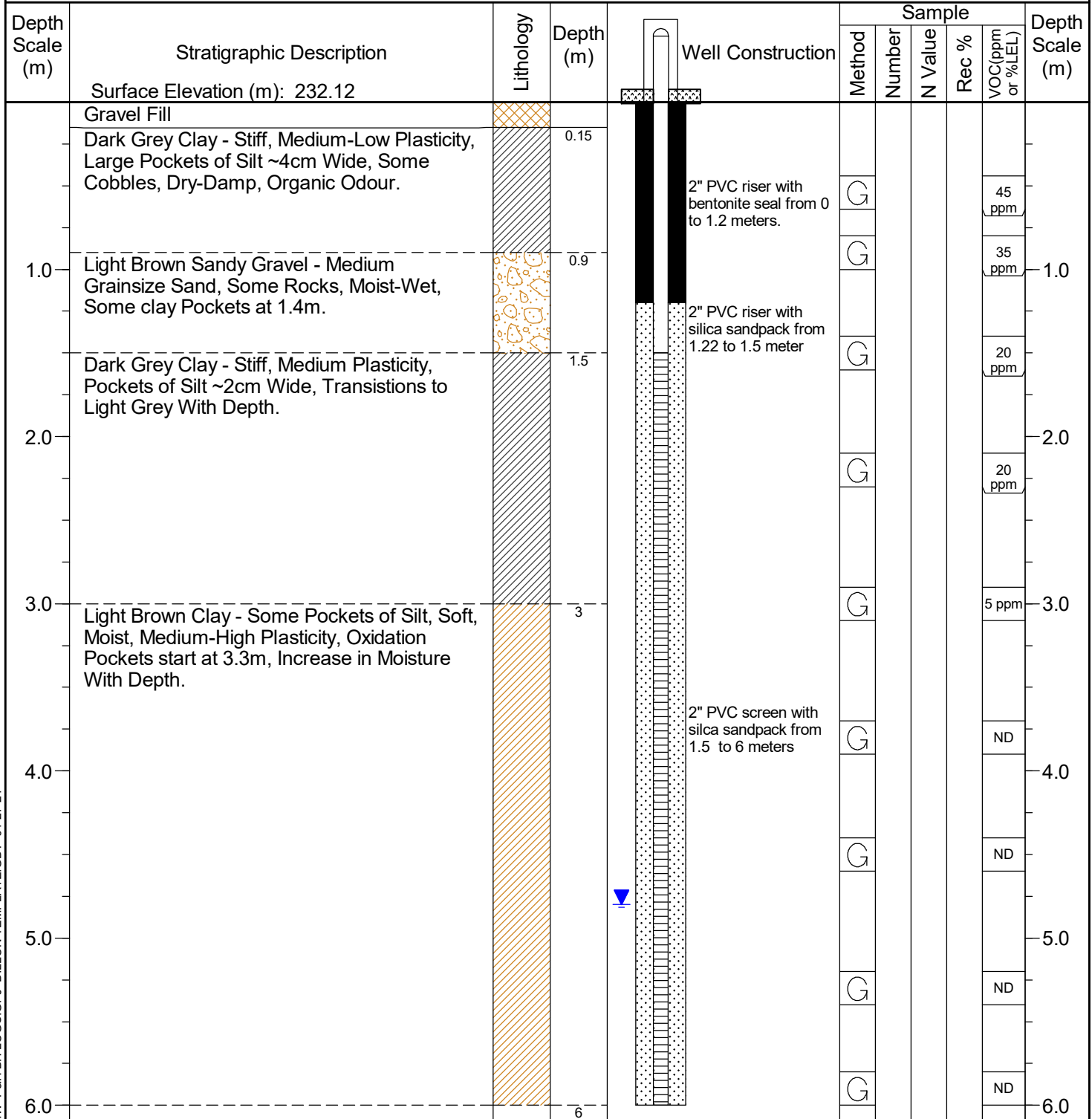
LITHOLOGY SYMBOLS

Fill (made ground)
 Clay
 Clayey Silt

SAMPLE TYPE

G Grab Sample

Client: Tervita Corporation	Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725	Location: Next to Diesel AST
Drilling Co.: Maple Leaf Drilling	Drilling Method: Solid Stem Auger
Supervised by: MJT	Date Started: 12-01-20 Date Completed: 12-01-20



Static Water Level (227.323m asl)

LITHOLOGY SYMBOLS

 Fill (made ground)
 Clay
 Sandy Gravel

SAMPLE TYPE

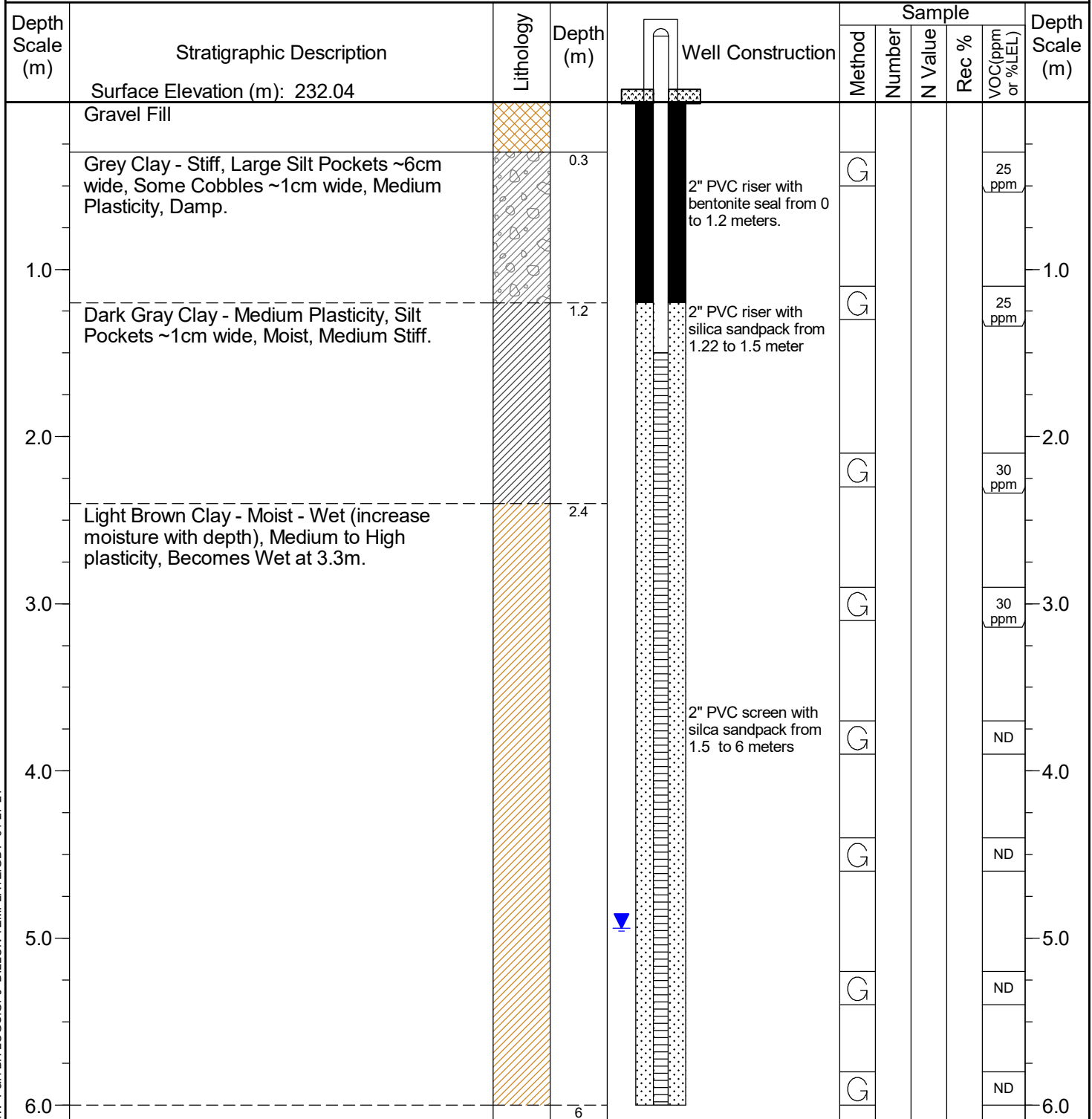
 Grab Sample

5532349.417m North 642554.437m East

* Indicates sample submitted for analysis

DILLON MW P&H BH LOGS.GPJ DILLON TEMPLATE.GDT 01-27-21

Client: Tervita Corporation Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725 Location: Next to Maintenance Shop
Drilling Co.: Maple Leaf Drilling Drilling Method: Solid Stem Auger
Supervised by: MJT Date Started: 12-01-20 Date Completed: 12-01-20



Static Water Level (227.1m asl)

LITHOLOGY SYMBOLS

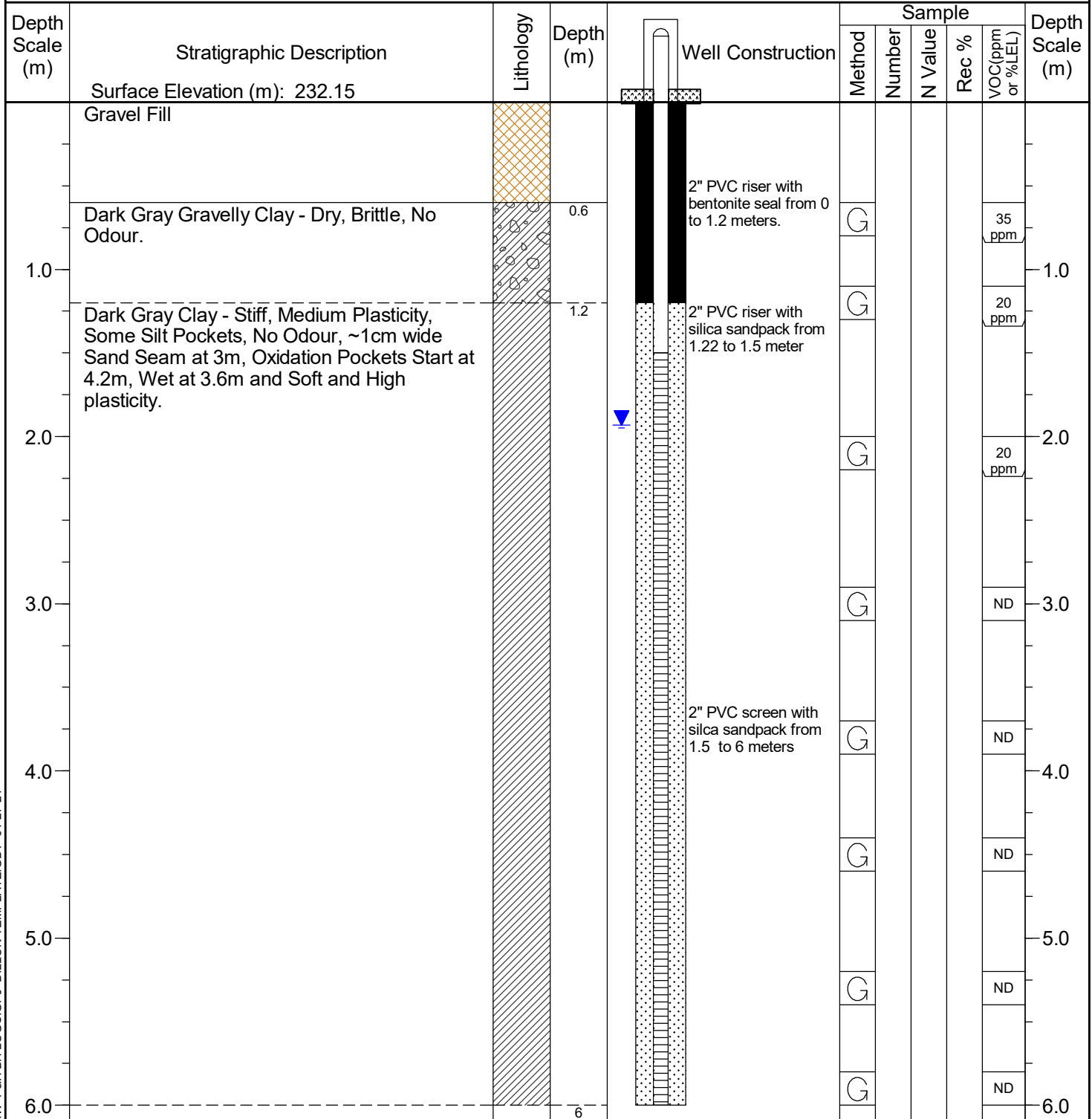
Fill (made ground)
Clay

Gravelly Clay

SAMPLE TYPE

G Grab Sample

Client: Tervita Corporation	Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725	Location: South West Property Line
Drilling Co.: Maple Leaf Drilling	Drilling Method: Solid Stem Auger
Supervised by: MJT	Date Started: 12-01-20 Date Completed: 12-01-20



Static Water Level (230.217m asl)

LITHOLOGY SYMBOLS

Fill (made ground)
Gravelly Clay
Clay

Gravelly Clay

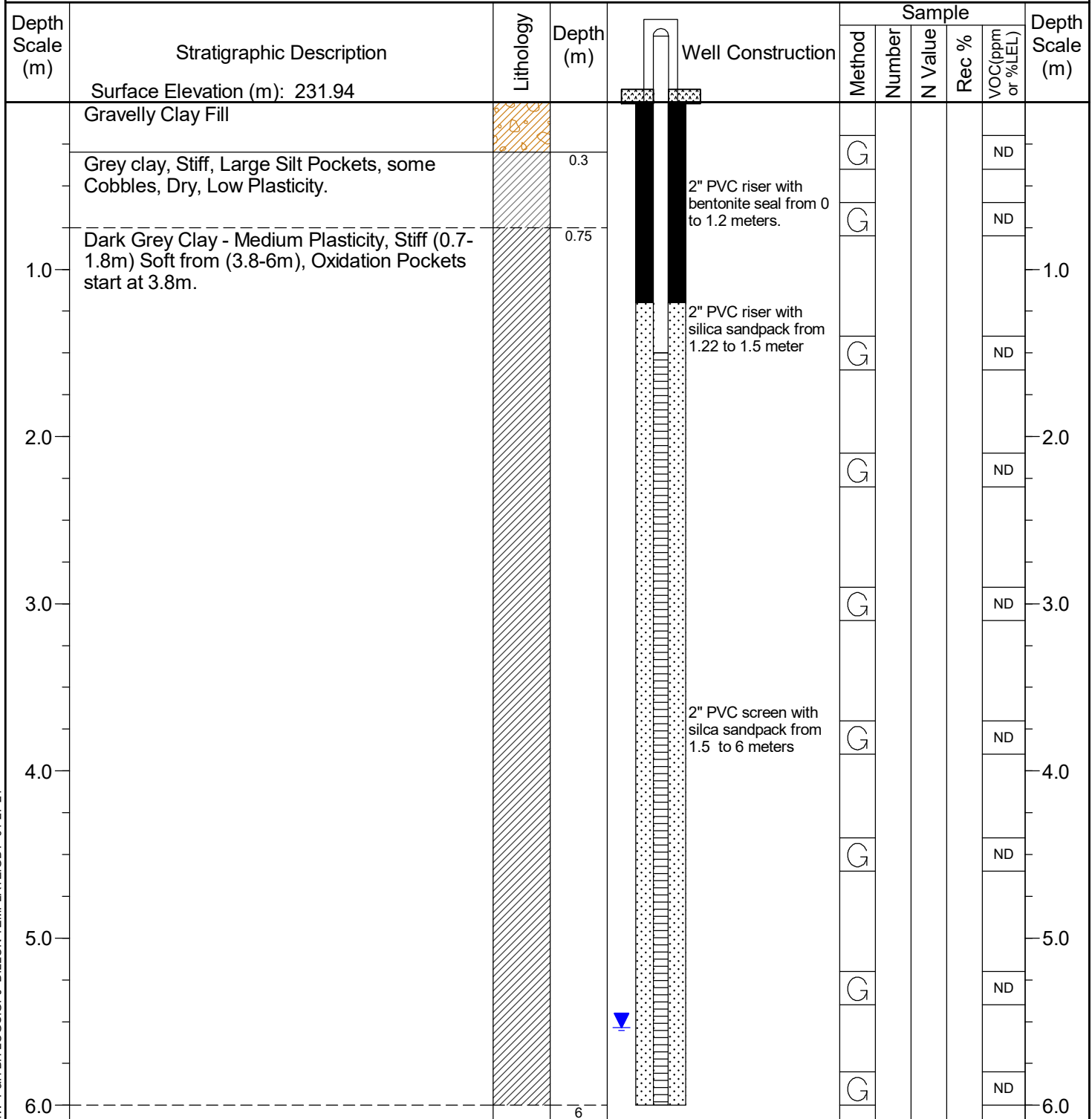
SAMPLE TYPE

G Grab Sample



MW20-07

Client: Tervita Corporation Project: Phase II ESA 70 Roderick Street
Project No.: 20-3725 Location: West Property Line
Drilling Co.: Maple Leaf Drilling Drilling Method: Solid Stem Auger
Supervised by: MJT Date Started: 12-01-20 Date Completed: 12-01-20



Static Water Level (226.403m asl)

LITHOLOGY SYMBOLS

Gravelly Clay

Clay

SAMPLE TYPE

G Grab Sample

Appendix B

Laboratory Certificates of Analysis



Your Project #: 20-3725

Attention: Shane Chapman

DILLON CONSULTING LTD.
1558 Willson Place
Winnipeg, MB
CANADA R3T 0Y4

Your C.O.C. #: 626198-01-01, 626198-02-01, 626198-03-01

Report Date: 2020/12/21

Report #: R2969777

Version: 3 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C089420

Received: 2020/12/02, 16:15

Sample Matrix: Soil
Samples Received: 26

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 3)	19	N/A	2020/12/10	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	18	N/A	2020/12/11		Auto Calc
F1-BTEX (1)	1	N/A	2020/12/17		Auto Calc
Cation/EC Ratio (1)	1	N/A	2020/12/15		Auto Calc
Cation/EC Ratio (1)	4	N/A	2020/12/17		Auto Calc
Chloride (Soluble) (1)	1	2020/12/13	2020/12/14	AB SOP-00033 / AB SOP-00020	SM 23-4500-Cl-E m
Chloride (Soluble) (1)	4	2020/12/15	2020/12/16	AB SOP-00033 / AB SOP-00020	SM 23-4500-Cl-E m
Conductivity @25C (Soluble) (1)	1	2020/12/14	2020/12/14	AB SOP-00033 / AB SOP-00004	SM 23 2510 B m
Conductivity @25C (Soluble) (1)	4	2020/12/16	2020/12/17	AB SOP-00033 / AB SOP-00004	SM 23 2510 B m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	10	2020/12/10	2020/12/11	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	7	2020/12/10	2020/12/12	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	2	2020/12/11	2020/12/11	AB SOP-00036	CCME PHC-CWS m
Elements by ICPMS - Soils (1)	7	2020/12/11	2020/12/12	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Soils (1)	3	2020/12/12	2020/12/12	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Soils (1)	1	2020/12/13	2020/12/14	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Soils (1)	3	2020/12/15	2020/12/15	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Sum of Cations, Anions (1)	1	N/A	2020/12/15		Auto Calc
Sum of Cations, Anions (1)	3	N/A	2020/12/16		Auto Calc
Sum of Cations, Anions (1)	1	N/A	2020/12/17		Auto Calc
Moisture (1)	8	N/A	2020/12/10	AB SOP-00002	CCME PHC-CWS m
Moisture (1)	14	N/A	2020/12/11	AB SOP-00002	CCME PHC-CWS m
Moisture (1)	1	N/A	2020/12/15	AB SOP-00002	CCME PHC-CWS m

Your Project #: 20-3725

Attention: Shane Chapman

DILLON CONSULTING LTD.
1558 Willson Place
Winnipeg, MB
CANADA R3T 0Y4

Your C.O.C. #: 626198-01-01, 626198-02-01, 626198-03-01

Report Date: 2020/12/21

Report #: R2969777

Version: 3 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C089420

Received: 2020/12/02, 16:15

Sample Matrix: Soil
Samples Received: 26

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Benzo[a]pyrene Equivalency (1)	8	N/A	2020/12/12		Auto Calc
Benzo[a]pyrene Equivalency (1)	1	N/A	2020/12/16		Auto Calc
PAH in Soil by GC/MS (1)	7	2020/12/10	2020/12/12	AB SOP-00036 / AB SOP-00003	EPA 3540C/8270E m
PAH in Soil by GC/MS (1)	1	2020/12/11	2020/12/11	AB SOP-00036 / AB SOP-00003	EPA 3540C/8270E m
PAH in Soil by GC/MS (1)	1	2020/12/11	2020/12/12	AB SOP-00036 / AB SOP-00003	EPA 3540C/8270E m
pH @25C (1:2 Calcium Chloride Extract) (1)	1	2020/12/14	2020/12/14	AB SOP-00033 / AB SOP-00006	SM 23 4500 H+B m
pH @25C (1:2 Calcium Chloride Extract) (1)	4	2020/12/16	2020/12/16	AB SOP-00033 / AB SOP-00006	SM 23 4500 H+B m
Particle Size by Sieve (75 micron) (1)	3	N/A	2020/12/12		Auto Calc
Particle Size by Sieve (1)	3	N/A	2020/12/12	AB SOP-00022	ASTM D6913-17 m
Sodium Adsorption Ratio (1)	1	N/A	2020/12/15		Auto Calc
Sodium Adsorption Ratio (1)	3	N/A	2020/12/16		Auto Calc
Sodium Adsorption Ratio (1)	1	N/A	2020/12/17		Auto Calc
Soluble Ions (1)	1	2020/12/13	2020/12/14	AB SOP-00033 / AB SOP-00042	EPA 6010d R5 m
Soluble Ions (1)	4	2020/12/15	2020/12/16	AB SOP-00033 / AB SOP-00042	EPA 6010d R5 m
Soluble Paste (1)	1	2020/12/13	2020/12/13	AB SOP-00033	Carter 2nd ed 15.2 m
Soluble Paste (1)	4	2020/12/15	2020/12/16	AB SOP-00033	Carter 2nd ed 15.2 m
Soluble Ions Calculation (1)	4	N/A	2020/12/11		Auto Calc
Soluble Ions Calculation (1)	1	N/A	2020/12/16		Auto Calc
Theoretical Gypsum Requirement (1, 5)	1	N/A	2020/12/15		Auto Calc
Theoretical Gypsum Requirement (1, 5)	3	N/A	2020/12/16		Auto Calc
Theoretical Gypsum Requirement (1, 5)	1	N/A	2020/12/17		Auto Calc
GC/MS Analysis of OP Pesticides (2)	2	2020/12/15	2020/12/17	CAM SOP-00301	EPA 8270 m



Your Project #: 20-3725

Attention: Shane Chapman

DILLON CONSULTING LTD.
1558 Willson Place
Winnipeg, MB
CANADA R3T 0Y4

Your C.O.C. #: 626198-01-01, 626198-02-01, 626198-03-01

Report Date: 2020/12/21

Report #: R2969777

Version: 3 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C089420

Received: 2020/12/02, 16:15

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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

(1) This test was performed by BV Labs Calgary Environmental

(2) This test was performed by BV Labs Ontario (From Calgary)

(3) No lab extraction date is given for F1BTX & VOC samples that are field preserved with methanol. Extraction date is date sampled unless otherwise stated.

(4) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(5) TGR calculation is based on a theoretical SAR of 4. Salt Contamination and Assessment and remediation guideline 2001 recommended SAR is ranging 4-8. TGR is reported in tonnes/ha.



Your Project #: 20-3725

Attention: Shane Chapman

DILLON CONSULTING LTD.
1558 Willson Place
Winnipeg, MB
CANADA R3T 0Y4

Your C.O.C. #: 626198-01-01, 626198-02-01, 626198-03-01

Report Date: 2020/12/21

Report #: R2969777

Version: 3 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C089420

Received: 2020/12/02, 16:15

Encryption Key

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

Janelle Kochan, B.Sc., Key Account Specialist

Email: Janelle.KOCHAN@bvlab.com

Phone# (204)259-0231

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BUREAU
VERITASBV Labs Job #: C089420
Report Date: 2020/12/21DILLON CONSULTING LTD.
Client Project #: 20-3725**RESULTS OF CHEMICAL ANALYSES OF SOIL**

BV Labs ID		YZ0761			YZ0762			YZ0767		
Sampling Date		2020/12/01 10:00			2020/12/01 11:00			2020/12/01 12:45		
COC Number		626198-01-01			626198-01-01			626198-01-01		
	UNITS	MW20-1@0-2.5	RDL	QC Batch	MW20-02@2.5	RDL	QC Batch	BH20-02@2.5	RDL	QC Batch

Calculated Parameters

Anion Sum	meq/L	11	N/A	A105056	84	N/A	A105056			
Cation Sum	meq/L	14	N/A	A105056	75	N/A	A105056			
Cation/EC Ratio	N/A	11	0.10	A105054	9.9	0.10	A105054			
Calculated Calcium (Ca)	mg/kg	92	0.89	A105058	200	1.1	A105058			
Calculated Magnesium (Mg)	mg/kg	32	0.59	A105058	220	0.76	A105058			
Calculated Sodium (Na)	mg/kg	20	1.5	A105058	440	1.9	A105058			
Calculated Potassium (K)	mg/kg	15	0.77	A105058	400	0.99	A105058			
Calculated Chloride (Cl)	mg/kg	16	5.9	A105058	860	38	A105058			
Calculated Sulphate (SO4)	mg/kg	300	3.0	A105058	1900	3.8	A105058			

Soluble Parameters

Soluble Chloride (Cl)	mg/L	26	10	A116205	1100 (1)	50	A116251			
Soluble Conductivity	dS/m	1.3	0.020	A117048	7.5	0.020	A116983			
Soluble (CaCl2) pH	pH	7.71	N/A	A113941	8.17	N/A	A113982			
Sodium Adsorption Ratio	N/A	0.58	0.10	A105057	5.9	0.10	A105057			
Soluble Calcium (Ca)	mg/L	160	1.5	A116164	260	1.5	A116226			
Soluble Magnesium (Mg)	mg/L	55	1.0	A116164	290	1.0	A116226			
Soluble Sodium (Na)	mg/L	33	2.5	A116164	580	2.5	A116226			
Soluble Potassium (K)	mg/L	25	1.3	A116164	520	1.3	A116226			
Saturation %	%	59	N/A	A113940	76	N/A	A113980			
Soluble Sulphate (SO4)	mg/L	510	5.0	A116164	2500	5.0	A116226			
Theoretical Gypsum Requirement	tonnes/ha	<0.20	0.20	A105059	5.4	0.20	A105059			

Physical Properties

Grain Size	N/A							FINE	N/A	A102968
Sieve - #10 (>2.00mm)	%							1.6 (2)	0.20	A112372
Sieve - #200 (>0.075mm)	%							9.2	0.20	A112372
Sieve - Pan	%							91	0.20	A112372

RDL = Reportable Detection Limit

N/A = Not Applicable

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

(2) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.



RESULTS OF CHEMICAL ANALYSES OF SOIL

BV Labs ID		YZ0767	YZ0767			YZ0884		
Sampling Date		2020/12/01 12:45	2020/12/01 12:45			2020/12/02 11:40		
COC Number		626198-01-01	626198-01-01			626198-02-01		
	UNITS	BH20-02@2.5 Lab-Dup	BH20-02@2.5 Lab-Dup 2	RDL	QC Batch	BH20-07@1	RDL	QC Batch
Physical Properties								
Grain Size	N/A					COARSE	N/A	A102968
Sieve - #10 (>2.00mm)	%	3.4 (1)	13 (1)	0.20	A112372	21	0.20	A112372
Sieve - #200 (>0.075mm)	%	10	19 (1)	0.20	A112372	58	0.20	A112372
Sieve - Pan	%	90	81	0.20	A112372	42	0.20	A112372
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.								

**RESULTS OF CHEMICAL ANALYSES OF SOIL**

BV Labs ID		YZ0886			YZ0887			YZ0911		
Sampling Date		2020/12/02 12:15			2020/12/02 12:20			2020/12/02 13:30		
COC Number		626198-02-01			626198-02-01			626198-03-01		
	UNITS	MW20-05@4	RDL	QC Batch	MW20-05@10	RDL	QC Batch	MW20-06@7	RDL	QC Batch

Calculated Parameters

Anion Sum	meq/L	4.3	N/A	A105056	15	N/A	A105056			
Cation Sum	meq/L	7.9	N/A	A105056	16	N/A	A105056			
Cation/EC Ratio	N/A	9.9	0.10	A105054	9.3	0.10	A105054			
Calculated Calcium (Ca)	mg/kg	33	1.4	A105058	47	1.7	A105058			
Calculated Magnesium (Mg)	mg/kg	18	0.96	A105058	45	1.1	A105058			
Calculated Sodium (Na)	mg/kg	94	2.4	A105058	270	2.8	A105058			
Calculated Potassium (K)	mg/kg	13	1.2	A105058	14	1.5	A105058			
Calculated Chloride (Cl)	mg/kg	48	9.6	A105058	350	11	A105058			
Calculated Sulphate (SO4)	mg/kg	130	4.8	A105058	330	5.6	A105058			

Soluble Parameters

Soluble Chloride (Cl)	mg/L	50	10	A113390	310	10	A116251			
Soluble Conductivity	dS/m	0.80	0.020	A113732	1.7	0.020	A116983			
Soluble (CaCl2) pH	pH	7.46	N/A	A112981	7.60	N/A	A113982			
Sodium Adsorption Ratio	N/A	3.4	0.10	A105057	6.3	0.10	A105057			
Soluble Calcium (Ca)	mg/L	34	1.5	A113714	41	1.5	A116226			
Soluble Magnesium (Mg)	mg/L	19	1.0	A113714	39	1.0	A116226			
Soluble Sodium (Na)	mg/L	98	2.5	A113714	240	2.5	A116226			
Soluble Potassium (K)	mg/L	14	1.3	A113714	13	1.3	A116226			
Saturation %	%	96	N/A	A112978	110	N/A	A113980			
Soluble Sulphate (SO4)	mg/L	140	5.0	A113714	290	5.0	A116226			
Theoretical Gypsum Requirement	tonnes/ha	<0.20	0.20	A105059	1.5	0.20	A105059			

Physical Properties

Grain Size	N/A							FINE	N/A	A102968
Sieve - #10 (>2.00mm)	%							<0.20	0.20	A112372
Sieve - #200 (>0.075mm)	%							1.9	0.20	A112372
Sieve - Pan	%							98	0.20	A112372

RDL = Reportable Detection Limit

N/A = Not Applicable

**RESULTS OF CHEMICAL ANALYSES OF SOIL**

BV Labs ID		YZ0914		
Sampling Date		2020/12/01		
COC Number		626198-03-01		
	UNITS	FD1	RDL	QC Batch
Calculated Parameters				
Anion Sum	meq/L	78	N/A	A105056
Cation Sum	meq/L	69	N/A	A105056
Cation/EC Ratio	N/A	9.6	0.10	A105054
Calculated Calcium (Ca)	mg/kg	140	1.1	A105058
Calculated Magnesium (Mg)	mg/kg	190	0.73	A105058
Calculated Sodium (Na)	mg/kg	420	1.8	A105058
Calculated Potassium (K)	mg/kg	380	0.95	A105058
Calculated Chloride (Cl)	mg/kg	800	37	A105058
Calculated Sulphate (SO ₄)	mg/kg	1700	3.7	A105058
Soluble Parameters				
Soluble Chloride (Cl)	mg/L	1100 (1)	50	A116251
Soluble Conductivity	dS/m	7.2	0.020	A116983
Soluble (CaCl ₂) pH	pH	7.92	N/A	A113982
Sodium Adsorption Ratio	N/A	6.3	0.10	A105057
Soluble Calcium (Ca)	mg/L	190	1.5	A116226
Soluble Magnesium (Mg)	mg/L	260	1.0	A116226
Soluble Sodium (Na)	mg/L	570	2.5	A116226
Soluble Potassium (K)	mg/L	520	1.3	A116226
Saturation %	%	73	N/A	A113980
Soluble Sulphate (SO ₄)	mg/L	2300	5.0	A116226
Theoretical Gypsum Requirement	tonnes/ha	5.6	0.20	A105059
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range.				

**PETROLEUM HYDROCARBONS (CCME)**

BV Labs ID		YZ0762	YZ0763		YZ0764		YZ0766		
Sampling Date		2020/12/01 11:00	2020/12/01 11:15		2020/12/01 12:00		2020/12/01 12:30		
COC Number		626198-01-01	626198-01-01		626198-01-01		626198-01-01		
	UNITS	MW20-02@2.5	MW20-02@15	QC Batch	MW20-03@2	QC Batch	BH20-01@1.5	RDL	QC Batch

Ext. Pet. Hydrocarbon

F2 (C10-C16 Hydrocarbons)	mg/kg	21	<10	A111117	<10	A110994	<10	10	A111117
F3 (C16-C34 Hydrocarbons)	mg/kg	790	54	A111117	330	A110994	94	50	A111117
F4 (C34-C50 Hydrocarbons)	mg/kg	130	<50	A111117	180	A110994	<50	50	A111117
Reached Baseline at C50	mg/kg	Yes	Yes	A111117	Yes	A110994	Yes		A111117

Surrogate Recovery (%)

O-TERPHENYL (sur.)	%	94	92	A111117	104	A110994	93		A111117
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RDL = Reportable Detection Limit

BV Labs ID		YZ0767		YZ0768		YZ0770		YZ0878		
Sampling Date		2020/12/01 12:45		2020/12/01 12:50		2020/12/02 09:15		2020/12/02 10:00		
COC Number		626198-01-01		626198-01-01		626198-01-01		626198-02-01		
	UNITS	BH20-02@2.5	QC Batch	BH20-03@3	QC Batch	BH20-04@4	QC Batch	BH20-05@2.5	RDL	QC Batch

Ext. Pet. Hydrocarbon

F2 (C10-C16 Hydrocarbons)	mg/kg	<10	A110994	210	A111544	60	A110994	24	10	A111544
F3 (C16-C34 Hydrocarbons)	mg/kg	150	A110994	1400	A111544	590	A110994	430	50	A111544
F4 (C34-C50 Hydrocarbons)	mg/kg	80	A110994	300	A111544	160	A110994	140	50	A111544
Reached Baseline at C50	mg/kg	Yes	A110994	Yes	A111544	Yes	A110994	Yes		A111544

Surrogate Recovery (%)

O-TERPHENYL (sur.)	%	99	A110994	105	A111544	110	A110994	114		A111544
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RDL = Reportable Detection Limit

BV Labs ID		YZ0880	YZ0881	YZ0882	YZ0883	YZ0884	YZ0885		
Sampling Date		2020/12/02 10:30	2020/12/02 10:45	2020/12/02 11:10	2020/12/02 11:15	2020/12/02 11:40	2020/12/02 11:45		
COC Number		626198-02-01	626198-02-01	626198-02-01	626198-02-01	626198-02-01	626198-02-01		
	UNITS	BH20-06@2.5	BH20-06@7.5	MW20-04@1.5	MW20-04@5	BH20-07@1	BH20-07@6.5	RDL	QC Batch

Ext. Pet. Hydrocarbon

F2 (C10-C16 Hydrocarbons)	mg/kg	34	<10	<10	<10	56	<10	10	A111117
F3 (C16-C34 Hydrocarbons)	mg/kg	200	98	81	<50	390	<50	50	A111117
F4 (C34-C50 Hydrocarbons)	mg/kg	66	<50	<50	<50	74	<50	50	A111117
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes		A111117

Surrogate Recovery (%)

O-TERPHENYL (sur.)	%	98	94	86	94	101	93		A111117
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RDL = Reportable Detection Limit



BUREAU
VERITAS

BV Labs Job #: C089420
Report Date: 2020/12/21

DILLON CONSULTING LTD.
Client Project #: 20-3725

PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		YZ0886	YZ0887	YZ0910	YZ0914	YZ0915		
Sampling Date		2020/12/02 12:15	2020/12/02 12:20	2020/12/02 13:00	2020/12/01	2020/12/02		
COC Number		626198-02-01	626198-02-01	626198-03-01	626198-03-01	626198-03-01		
	UNITS	MW20-05@4	MW20-05@10	MW20-06@2.5	FD1	FD2	RDL	QC Batch

Ext. Pet. Hydrocarbon

F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	31	11	10	A111117
F3 (C16-C34 Hydrocarbons)	mg/kg	58	<50	97	2000	120	50	A111117
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	<50	290	<50	50	A111117
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes		A111117

Surrogate Recovery (%)

O-TERPHENYL (sur.)	%	91	97	100	88	100		A111117
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RDL = Reportable Detection Limit

**PESTICIDES BY GC-MS (SOIL)**

BV Labs ID		YZ0761	YZ0761	YZ0886		
Sampling Date		2020/12/01 10:00	2020/12/01 10:00	2020/12/02 12:15		
COC Number		626198-01-01	626198-01-01	626198-02-01		
	UNITS	MW20-1@0-2.5	MW20-1@0-2.5 Lab-Dup	MW20-05@4	RDL	QC Batch
Pesticides & Herbicides						
Aldicarb	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Atrazine	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Bendiocarb	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Carbaryl	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Carbofuran	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Chlorpyrifos (Dursban)	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Cyanazine (Bladex)	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Demeton-S	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Diazinon	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Dichlorvos	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Dimethoate	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Ethion	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Fenchlorphos (Ronnel)	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Fenthion	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Fonofos	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Guthion (Azinphos-methyl)	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Malathion	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Metolachlor	ug/g	<10	<10	<10	10	A119907
Mevinphos (Phosdrin)	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Parathion Ethyl	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Parathion methyl	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Phorate (Thimet)	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Phosmet	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Prometryn	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Simazine	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Terbufos	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Triallate	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Trifluralin	ug/g	<5.0	<5.0	<5.0	5.0	A119907
Surrogate Recovery (%)						
2-Fluorobiphenyl	%	75	87	79		A119907
D14-Terphenyl (FS)	%	99	90	89		A119907
D5-NITROBENZENE (sur.)	%	61	85	72		A119907
RDL = Reportable Detection Limit						
Lab-Dup = Laboratory Initiated Duplicate						

BUREAU
VERITAS

BV Labs Job #: C089420

Report Date: 2020/12/21

DILLON CONSULTING LTD.

Client Project #: 20-3725

PHYSICAL TESTING (SOIL)

BV Labs ID		YZ0762	YZ0763		YZ0764	YZ0765		
Sampling Date		2020/12/01 11:00	2020/12/01 11:15		2020/12/01 12:00	2020/12/01 12:15		
COC Number		626198-01-01	626198-01-01		626198-01-01	626198-01-01		
	UNITS	MW20-02@2.5	MW20-02@15	QC Batch	MW20-03@2	MW20-03@8	RDL	QC Batch

Physical Properties

Moisture	%	29	36	A111051	16	23	0.30	A110910
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RDL = Reportable Detection Limit

BV Labs ID		YZ0766		YZ0767		YZ0768		YZ0769		
Sampling Date		2020/12/01 12:30		2020/12/01 12:45		2020/12/01 12:50		2020/12/01 12:55		
COC Number		626198-01-01		626198-01-01		626198-01-01		626198-01-01		
	UNITS	BH20-01@1.5	QC Batch	BH20-02@2.5	QC Batch	BH20-03@3	QC Batch	BH20-03@7	RDL	QC Batch

Physical Properties

Moisture	%	19	A111051	19	A110910	15	A111051	29	0.30	A110910
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RDL = Reportable Detection Limit

BV Labs ID		YZ0770	YZ0770		YZ0878		YZ0879	YZ0880		
Sampling Date		2020/12/02 09:15	2020/12/02 09:15		2020/12/02 10:00		2020/12/02 10:10	2020/12/02 10:30		
COC Number		626198-01-01	626198-01-01		626198-02-01		626198-02-01	626198-02-01		
	UNITS	BH20-04@4	BH20-04@4 Lab-Dup	QC Batch	BH20-05@2.5	QC Batch	BH20-05@4.5	BH20-06@2.5	RDL	QC Batch

Physical Properties

Moisture	%	36	35	A110910	36	A115031	29	23	0.30	A110910
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RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		YZ0881	YZ0882	YZ0883	YZ0884	YZ0885	YZ0886		
Sampling Date		2020/12/02 10:45	2020/12/02 11:10	2020/12/02 11:15	2020/12/02 11:40	2020/12/02 11:45	2020/12/02 12:15		
COC Number		626198-02-01	626198-02-01	626198-02-01	626198-02-01	626198-02-01	626198-02-01		
	UNITS	BH20-06@7.5	MW20-04@1.5	MW20-04@5	BH20-07@1	BH20-07@6.5	MW20-05@4	RDL	QC Batch

Physical Properties

Moisture	%	32	22	19	17	28	29	0.30	A110910
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RDL = Reportable Detection Limit

BV Labs ID		YZ0887		YZ0910		YZ0911		YZ0914		
Sampling Date		2020/12/02 12:20		2020/12/02 13:00		2020/12/02 13:30		2020/12/01		
COC Number		626198-02-01		626198-03-01		626198-03-01		626198-03-01		
	UNITS	MW20-05@10	QC Batch	MW20-06@2.5	QC Batch	MW20-06@7	QC Batch	FD1	RDL	QC Batch

Physical Properties

Moisture	%	31	A111051	21	A110910	28	A109578	28	0.30	A111051
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RDL = Reportable Detection Limit



PHYSICAL TESTING (SOIL)

BV Labs ID		YZ0915		
Sampling Date		2020/12/02		
COC Number		626198-03-01		
	UNITS	FD2	RDL	QC Batch
Physical Properties				
Moisture	%	15	0.30	A111051
RDL = Reportable Detection Limit				



SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		YZ0764		YZ0765		YZ0767		
Sampling Date		2020/12/01 12:00		2020/12/01 12:15		2020/12/01 12:45		
COC Number		626198-01-01		626198-01-01		626198-01-01		
	UNITS	MW20-03@2	QC Batch	MW20-03@8	QC Batch	BH20-02@2.5	RDL	QC Batch

Polycyclic Aromatics

Acenaphthene	mg/kg	0.050	A111005	<0.0050	A111120	<0.0050	0.0050	A111005
B[a]P TPE Total Potency Equivalents	mg/kg	0.52	A104458	<0.0071	A104458	0.11	0.0071	A104458
Acenaphthylene	mg/kg	0.034	A111005	<0.0050	A111120	0.010	0.0050	A111005
Acridine	mg/kg	<0.010	A111005	<0.010	A111120	<0.010	0.010	A111005
Anthracene	mg/kg	0.14	A111005	<0.0040	A111120	0.023	0.0040	A111005
Benzo(a)anthracene	mg/kg	0.34	A111005	<0.0050	A111120	0.060	0.0050	A111005
Benzo(b&j)fluoranthene	mg/kg	0.42	A111005	<0.0050	A111120	0.091	0.0050	A111005
Benzo(k)fluoranthene	mg/kg	0.15	A111005	<0.0050	A111120	0.032	0.0050	A111005
Benzo(g,h,i)perylene	mg/kg	0.25	A111005	<0.0050	A111120	0.058	0.0050	A111005
Benzo(c)phenanthrene	mg/kg	0.059 (1)	A111005	<0.0050	A111120	0.011 (1)	0.0050	A111005
Benzo(a)pyrene	mg/kg	0.34	A111005	<0.0050	A111120	0.070	0.0050	A111005
Benzo(e)pyrene	mg/kg	0.25	A111005	<0.0050	A111120	0.058	0.0050	A111005
Chrysene	mg/kg	0.29	A111005	<0.0050	A111120	0.054	0.0050	A111005
Dibenz(a,h)anthracene	mg/kg	0.056	A111005	<0.0050	A111120	0.012	0.0050	A111005
Fluoranthene	mg/kg	0.63	A111005	<0.0050	A111120	0.12	0.0050	A111005
Fluorene	mg/kg	0.051	A111005	<0.0050	A111120	0.0067	0.0050	A111005
Indeno(1,2,3-cd)pyrene	mg/kg	0.25	A111005	<0.0050	A111120	0.058	0.0050	A111005
1-Methylnaphthalene	mg/kg	0.036	A111005	<0.0050	A111120	0.0097	0.0050	A111005
2-Methylnaphthalene	mg/kg	0.042	A111005	<0.0050	A111120	0.015	0.0050	A111005
Naphthalene	mg/kg	0.035	A111005	<0.0050	A111120	0.0087	0.0050	A111005
Phenanthrene	mg/kg	0.49	A111005	<0.0050	A111120	0.063	0.0050	A111005
Perylene	mg/kg	0.11	A111005	<0.0050	A111120	0.031	0.0050	A111005
Pyrene	mg/kg	0.63	A111005	<0.0050	A111120	0.11	0.0050	A111005
Quinoline	mg/kg	<0.010	A111005	<0.010	A111120	<0.010	0.010	A111005

Surrogate Recovery (%)

D10-ANTHRACENE (sur.)	%	87	A111005	85	A111120	89		A111005
D8-ACENAPHTHYLENE (sur.)	%	87	A111005	94	A111120	88		A111005
D8-NAPHTHALENE (sur.)	%	84	A111005	86	A111120	80		A111005
TERPHENYL-D14 (sur.)	%	87	A111005	96	A111120	86		A111005

RDL = Reportable Detection Limit

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

BUREAU
VERITASBV Labs Job #: C089420
Report Date: 2020/12/21DILLON CONSULTING LTD.
Client Project #: 20-3725

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		YZ0768			YZ0769			YZ0770		
Sampling Date		2020/12/01 12:50			2020/12/01 12:55			2020/12/02 09:15		
COC Number		626198-01-01			626198-01-01			626198-01-01		
	UNITS	BH20-03@3	RDL	QC Batch	BH20-03@7	RDL	QC Batch	BH20-04@4	RDL	QC Batch

Polycyclic Aromatics

Acenaphthene	mg/kg	24 (1)	0.25	A111541	0.31	0.0050	A111120	6.9	0.0050	A111005
B[a]P TPE Total Potency Equivalents	mg/kg	18	0.25	A104458	0.60	0.0071	A104458	3.2	0.0071	A104458
Acenaphthylene	mg/kg	0.82	0.0050	A111541	0.019	0.0050	A111120	0.30	0.0050	A111005
Acridine	mg/kg	0.89	0.010	A111541	0.017	0.010	A111120	0.51	0.010	A111005
Anthracene	mg/kg	16 (1)	0.20	A111541	0.26	0.0040	A111120	4.5	0.0040	A111005
Benzo(a)anthracene	mg/kg	15 (1)	0.25	A111541	0.43	0.0050	A111120	3.1	0.0050	A111005
Benzo(b&j)fluoranthene	mg/kg	18 (1)	0.25	A111541	0.54	0.0050	A111120	2.8	0.0050	A111005
Benzo(k)fluoranthene	mg/kg	5.0	0.0050	A111541	0.17	0.0050	A111120	1.0	0.0050	A111005
Benzo(g,h,i)perylene	mg/kg	7.7 (1)	0.25	A111541	0.24	0.0050	A111120	1.1	0.0050	A111005
Benzo(c)phenanthrene	mg/kg	2.0	0.0050	A111541	0.078	0.0050	A111120	0.61	0.0050	A111005
Benzo(a)pyrene	mg/kg	12 (1)	0.25	A111541	0.41	0.0050	A111120	2.0	0.0050	A111005
Benzo(e)pyrene	mg/kg	10 (1)	0.25	A111541	0.32	0.0050	A111120	1.5	0.0050	A111005
Chrysene	mg/kg	13 (1)	0.25	A111541	0.37	0.0050	A111120	2.6	0.0050	A111005
Dibenz(a,h)anthracene	mg/kg	1.4	0.0050	A111541	0.051	0.0050	A111120	0.35	0.0050	A111005
Fluoranthene	mg/kg	66 (1)	0.25	A111541	1.3	0.0050	A111120	19 (1)	0.050	A111005
Fluorene	mg/kg	17 (1)	0.25	A111541	0.23	0.0050	A111120	5.2	0.0050	A111005
Indeno(1,2,3-cd)pyrene	mg/kg	7.4 (1)	0.25	A111541	0.24	0.0050	A111120	1.2	0.0050	A111005
1-Methylnaphthalene	mg/kg	3.5	0.0050	A111541	0.056	0.0050	A111120	1.6	0.0050	A111005
2-Methylnaphthalene	mg/kg	7.7 (1)	0.25	A111541	0.065	0.0050	A111120	1.5	0.0050	A111005
Naphthalene	mg/kg	13 (1)	0.25	A111541	0.16	0.0050	A111120	2.8	0.0050	A111005
Phenanthrene	mg/kg	69 (1)	0.25	A111541	1.2	0.0050	A111120	15 (1)	0.050	A111005
Perylene	mg/kg	2.8	0.0050	A111541	0.092	0.0050	A111120	0.49	0.0050	A111005
Pyrene	mg/kg	53 (1)	0.25	A111541	1.4	0.0050	A111120	13 (1)	0.050	A111005
Quinoline	mg/kg	0.49	0.010	A111541	<0.010	0.010	A111120	<0.010	0.010	A111005

Surrogate Recovery (%)

D10-ANTHRACENE (sur.)	%	94		A111541	81		A111120	91		A111005
D8-ACENAPHTHYLENE (sur.)	%	93		A111541	92		A111120	91		A111005
D8-NAPHTHALENE (sur.)	%	96		A111541	87		A111120	83		A111005
TERPHENYL-D14 (sur.)	%	83		A111541	94		A111120	87		A111005

RDL = Reportable Detection Limit

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

**SEMIVOLATILE ORGANICS BY GC-MS (SOIL)**

BV Labs ID		YZ0878		YZ0879	YZ0880		
Sampling Date		2020/12/02 10:00		2020/12/02 10:10	2020/12/02 10:30		
COC Number		626198-02-01		626198-02-01	626198-02-01		
	UNITS	BH20-05@2.5	QC Batch	BH20-05@4.5	BH20-06@2.5	RDL	QC Batch
Polycyclic Aromatics							
Acenaphthene	mg/kg	0.10	A111541	0.076	0.041	0.0050	A111120
B[a]P TPE Total Potency Equivalents	mg/kg	1.1	A104458	1.5	0.098	0.0071	A104458
Acenaphthylene	mg/kg	0.070	A111541	0.041	0.0081	0.0050	A111120
Acridine	mg/kg	0.012	A111541	0.019	<0.010	0.010	A111120
Anthracene	mg/kg	0.26	A111541	0.23	0.046	0.0040	A111120
Benzo(a)anthracene	mg/kg	0.84	A111541	0.98	0.073	0.0050	A111120
Benzo(b&j)fluoranthene	mg/kg	0.92	A111541	1.2	0.087	0.0050	A111120
Benzo(k)fluoranthene	mg/kg	0.33	A111541	0.43	0.030	0.0050	A111120
Benzo(g,h,i)perylene	mg/kg	0.38	A111541	0.59	0.037	0.0050	A111120
Benzo(c)phenanthrene	mg/kg	0.15	A111541	0.14	0.012 (1)	0.0050	A111120
Benzo(a)pyrene	mg/kg	0.72	A111541	0.98	0.065	0.0050	A111120
Benzo(e)pyrene	mg/kg	0.50	A111541	0.67	0.050	0.0050	A111120
Chrysene	mg/kg	0.77	A111541	0.83	0.065	0.0050	A111120
Dibenz(a,h)anthracene	mg/kg	0.11	A111541	0.15	0.0089	0.0050	A111120
Fluoranthene	mg/kg	1.8	A111541	1.8	0.22	0.0050	A111120
Fluorene	mg/kg	0.10	A111541	0.062	0.044	0.0050	A111120
Indeno(1,2,3-cd)pyrene	mg/kg	0.43	A111541	0.63	0.040	0.0050	A111120
1-Methylnaphthalene	mg/kg	0.28	A111541	0.12	0.046	0.0050	A111120
2-Methylnaphthalene	mg/kg	0.35	A111541	0.15	0.050	0.0050	A111120
Naphthalene	mg/kg	0.34	A111541	0.11	0.031	0.0050	A111120
Phenanthrene	mg/kg	1.2	A111541	0.78	0.20	0.0050	A111120
Perylene	mg/kg	0.14	A111541	0.22	0.039	0.0050	A111120
Pyrene	mg/kg	1.7	A111541	1.6	0.18	0.0050	A111120
Quinoline	mg/kg	<0.010	A111541	<0.010	<0.010	0.010	A111120
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	84	A111541	82	92		A111120
D8-ACENAPHTHYLENE (sur.)	%	88	A111541	87	95		A111120
D8-NAPHTHALENE (sur.)	%	82	A111541	81	90		A111120
TERPHENYL-D14 (sur.)	%	88	A111541	85	95		A111120
RDL = Reportable Detection Limit							
(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.							

BUREAU
VERITASBV Labs Job #: C089420
Report Date: 2020/12/21DILLON CONSULTING LTD.
Client Project #: 20-3725**SEMIVOLATILE ORGANICS BY GC-MS (SOIL)**

BV Labs ID		YZ0880		
Sampling Date		2020/12/02 10:30		
COC Number		626198-02-01		
	UNITS	BH20-06@2.5 Lab-Dup	RDL	QC Batch
Polycyclic Aromatics				
Acenaphthene	mg/kg	0.028	0.0050	A111120
Acenaphthylene	mg/kg	0.0069	0.0050	A111120
Acridine	mg/kg	<0.010	0.010	A111120
Anthracene	mg/kg	0.029	0.0040	A111120
Benzo(a)anthracene	mg/kg	0.050	0.0050	A111120
Benzo(b&j)fluoranthene	mg/kg	0.060	0.0050	A111120
Benzo(k)fluoranthene	mg/kg	0.020	0.0050	A111120
Benzo(g,h,i)perylene	mg/kg	0.026	0.0050	A111120
Benzo(c)phenanthrene	mg/kg	0.0090	0.0050	A111120
Benzo(a)pyrene	mg/kg	0.042	0.0050	A111120
Benzo(e)pyrene	mg/kg	0.035	0.0050	A111120
Chrysene	mg/kg	0.049	0.0050	A111120
Dibenz(a,h)anthracene	mg/kg	0.0071	0.0050	A111120
Fluoranthene	mg/kg	0.15	0.0050	A111120
Fluorene	mg/kg	0.030	0.0050	A111120
Indeno(1,2,3-cd)pyrene	mg/kg	0.029	0.0050	A111120
1-Methylnaphthalene	mg/kg	0.048	0.0050	A111120
2-Methylnaphthalene	mg/kg	0.051	0.0050	A111120
Naphthalene	mg/kg	0.035	0.0050	A111120
Phenanthrene	mg/kg	0.14	0.0050	A111120
Perylene	mg/kg	0.038	0.0050	A111120
Pyrene	mg/kg	0.13	0.0050	A111120
Quinoline	mg/kg	<0.010	0.010	A111120
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	101		A111120
D8-ACENAPHTHYLENE (sur.)	%	102		A111120
D8-NAPHTHALENE (sur.)	%	94		A111120
TERPHENYL-D14 (sur.)	%	105		A111120
RDL = Reportable Detection Limit				
Lab-Dup = Laboratory Initiated Duplicate				

BUREAU
VERITASBV Labs Job #: C089420
Report Date: 2020/12/21DILLON CONSULTING LTD.
Client Project #: 20-3725**ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)**

BV Labs ID		YZ0762			YZ0764		YZ0765	YZ0766		
Sampling Date		2020/12/01 11:00			2020/12/01 12:00		2020/12/01 12:15	2020/12/01 12:30		
COC Number		626198-01-01			626198-01-01		626198-01-01	626198-01-01		
	UNITS	MW20-02@2.5	RDL	QC Batch	MW20-03@2	RDL	MW20-03@8	BH20-01@1.5	RDL	QC Batch

Elements										
Total Antimony (Sb)	mg/kg	2.4	0.50	A114332	10	0.50	0.87	1.2	0.50	A112441
Total Arsenic (As)	mg/kg	9.1	1.0	A114332	12	1.0	8.2	7.7	1.0	A112441
Total Barium (Ba)	mg/kg	180	1.0	A114332	340	1.0	210	210	1.0	A112441
Total Beryllium (Be)	mg/kg	0.76	0.40	A114332	0.66	0.40	0.88	0.74	0.40	A112441
Total Cadmium (Cd)	mg/kg	1.2	0.050	A114332	5.7	0.050	0.65	1.0	0.050	A112441
Total Chromium (Cr)	mg/kg	39	1.0	A114332	65	1.0	40	52	1.0	A112441
Total Cobalt (Co)	mg/kg	9.7	0.50	A114332	17	0.50	11	9.9	0.50	A112441
Total Copper (Cu)	mg/kg	87	1.0	A114332	230	1.0	39	45	1.0	A112441
Total Lead (Pb)	mg/kg	91	0.50	A114332	710	0.50	50	71	0.50	A112441
Total Molybdenum (Mo)	mg/kg	3.3	0.40	A114332	4.7	0.40	0.90	1.5	0.40	A112441
Total Nickel (Ni)	mg/kg	72	1.0	A114332	98	1.0	34	30	1.0	A112441
Total Selenium (Se)	mg/kg	0.82	0.50	A114332	0.55	0.50	<0.50	<0.50	0.50	A112441
Total Silver (Ag)	mg/kg	<0.20	0.20	A114332	0.33	0.20	<0.20	<0.20	0.20	A112441
Total Thallium (Tl)	mg/kg	0.20	0.10	A114332	0.19	0.10	0.24	0.20	0.10	A112441
Total Tin (Sn)	mg/kg	6.7	1.0	A114332	300 (1)	5.0	4.3	3.9	1.0	A112441
Total Uranium (U)	mg/kg	3.0	0.20	A114332	1.7	0.20	1.2	1.6	0.20	A112441
Total Vanadium (V)	mg/kg	39	1.0	A114332	48	1.0	68	58	1.0	A112441
Total Zinc (Zn)	mg/kg	440	10	A114332	2200 (1)	50	420	350	10	A112441

RDL = Reportable Detection Limit

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

**ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)**

BV Labs ID		YZ0767			YZ0880			YZ0884		
Sampling Date		2020/12/01 12:45			2020/12/02 10:30			2020/12/02 11:40		
COC Number		626198-01-01			626198-02-01			626198-02-01		
	UNITS	BH20-02@2.5	RDL	QC Batch	BH20-06@2.5	RDL	QC Batch	BH20-07@1	RDL	QC Batch

Elements										
Total Antimony (Sb)	mg/kg	6.7	0.50	A112704	0.70	0.50	A112441	8.2	0.50	A112704
Total Arsenic (As)	mg/kg	16	1.0	A112704	8.8	1.0	A112441	11	1.0	A112704
Total Barium (Ba)	mg/kg	310	1.0	A112704	150	1.0	A112441	200	1.0	A112704
Total Beryllium (Be)	mg/kg	0.55	0.40	A112704	0.70	0.40	A112441	<0.40	0.40	A112704
Total Cadmium (Cd)	mg/kg	5.0	0.050	A112704	0.42	0.050	A112441	1.7	0.050	A112704
Total Chromium (Cr)	mg/kg	70	1.0	A112704	41	1.0	A112441	18	1.0	A112704
Total Cobalt (Co)	mg/kg	40	0.50	A112704	10	0.50	A112441	6.2	0.50	A112704
Total Copper (Cu)	mg/kg	370	1.0	A112704	38	1.0	A112441	930 (1)	5.0	A112704
Total Lead (Pb)	mg/kg	590	0.50	A112704	26	0.50	A112441	320	0.50	A112704
Total Molybdenum (Mo)	mg/kg	6.7	0.40	A112704	2.1	0.40	A112441	3.2	0.40	A112704
Total Nickel (Ni)	mg/kg	190	1.0	A112704	31	1.0	A112441	17	1.0	A112704
Total Selenium (Se)	mg/kg	0.87	0.50	A112704	0.51	0.50	A112441	1.3	0.50	A112704
Total Silver (Ag)	mg/kg	0.38	0.20	A112704	<0.20	0.20	A112441	<0.20	0.20	A112704
Total Thallium (Tl)	mg/kg	0.16	0.10	A112704	0.19	0.10	A112441	0.20	0.10	A112704
Total Tin (Sn)	mg/kg	34	1.0	A112704	1.8	1.0	A112441	28	1.0	A112704
Total Uranium (U)	mg/kg	1.7	0.20	A112704	1.6	0.20	A112441	0.64	0.20	A112704
Total Vanadium (V)	mg/kg	33	1.0	A112704	47	1.0	A112441	16	1.0	A112704
Total Zinc (Zn)	mg/kg	3500 (1)	50	A112704	130	10	A112441	990	10	A112704

RDL = Reportable Detection Limit

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

BUREAU
VERITASBV Labs Job #: C089420
Report Date: 2020/12/21DILLON CONSULTING LTD.
Client Project #: 20-3725**ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)**

BV Labs ID		YZ0886		YZ0910		YZ0911	YZ0911		
Sampling Date		2020/12/02 12:15		2020/12/02 13:00		2020/12/02 13:30	2020/12/02 13:30		
COC Number		626198-02-01		626198-03-01		626198-03-01	626198-03-01		
	UNITS	MW20-05@4	QC Batch	MW20-06@2.5	QC Batch	MW20-06@7	MW20-06@7 Lab-Dup	RDL	QC Batch

Elements									
Total Antimony (Sb)	mg/kg	0.52	A113078	<0.50	A112704	0.52	0.56	0.50	A114936
Total Arsenic (As)	mg/kg	8.4	A113078	1.8	A112704	10	11	1.0	A114936
Total Barium (Ba)	mg/kg	190	A113078	31	A112704	300	290	1.0	A114936
Total Beryllium (Be)	mg/kg	1.0	A113078	<0.40	A112704	1.1	1.2	0.40	A114936
Total Cadmium (Cd)	mg/kg	0.32	A113078	<0.050	A112704	0.30	0.32	0.050	A114936
Total Chromium (Cr)	mg/kg	41	A113078	8.6	A112704	48 (1)	56	1.0	A114936
Total Cobalt (Co)	mg/kg	14	A113078	2.7	A112704	15	16	0.50	A114936
Total Copper (Cu)	mg/kg	32	A113078	8.1	A112704	37	38	1.0	A114936
Total Lead (Pb)	mg/kg	15	A113078	13	A112704	15	15	0.50	A114936
Total Molybdenum (Mo)	mg/kg	1.4	A113078	0.55	A112704	1.1	1.1	0.40	A114936
Total Nickel (Ni)	mg/kg	41	A113078	6.6	A112704	44	49	1.0	A114936
Total Selenium (Se)	mg/kg	0.60	A113078	<0.50	A112704	<0.50	<0.50	0.50	A114936
Total Silver (Ag)	mg/kg	<0.20	A113078	<0.20	A112704	<0.20	<0.20	0.20	A114936
Total Thallium (Tl)	mg/kg	0.27	A113078	<0.10	A112704	0.31	0.31	0.10	A114936
Total Tin (Sn)	mg/kg	<1.0	A113078	<1.0	A112704	1.1	1.2	1.0	A114936
Total Uranium (U)	mg/kg	2.1	A113078	0.38	A112704	1.4	1.4	0.20	A114936
Total Vanadium (V)	mg/kg	61	A113078	12	A112704	75	80	1.0	A114936
Total Zinc (Zn)	mg/kg	84	A113078	21	A112704	94	96	10	A114936

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

(1) Matrix spike exceeds acceptance limits due to matrix interference.



BUREAU
VERITAS

BV Labs Job #: C089420
Report Date: 2020/12/21

DILLON CONSULTING LTD.
Client Project #: 20-3725

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

BV Labs ID		YZ0912	YZ0913		YZ0914		YZ0915		
Sampling Date		2020/12/02 15:00	2020/12/02 16:00		2020/12/01		2020/12/02		
COC Number		626198-03-01	626198-03-01		626198-03-01		626198-03-01		
	UNITS	BH20-08@4	MW20-07@5	QC Batch	FD1	QC Batch	FD2	RDL	QC Batch
Elements									
Total Antimony (Sb)	mg/kg	<0.50	0.58	A112441	2.6	A114329	<0.50	0.50	A112441
Total Arsenic (As)	mg/kg	7.1	7.9	A112441	11	A114329	2.6	1.0	A112441
Total Barium (Ba)	mg/kg	230	160	A112441	260	A114329	41	1.0	A112441
Total Beryllium (Be)	mg/kg	1.3	0.87	A112441	0.64	A114329	<0.40	0.40	A112441
Total Cadmium (Cd)	mg/kg	0.26	0.34	A112441	1.5	A114329	<0.050	0.050	A112441
Total Chromium (Cr)	mg/kg	57	33	A112441	39	A114329	17	1.0	A112441
Total Cobalt (Co)	mg/kg	16	10	A112441	9.6	A114329	3.0	0.50	A112441
Total Copper (Cu)	mg/kg	35	28	A112441	130	A114329	8.7	1.0	A112441
Total Lead (Pb)	mg/kg	17	17	A112441	230	A114329	14	0.50	A112441
Total Molybdenum (Mo)	mg/kg	<0.40	1.2	A112441	3.9	A114329	1.3	0.40	A112441
Total Nickel (Ni)	mg/kg	48	31	A112441	300	A114329	7.6	1.0	A112441
Total Selenium (Se)	mg/kg	<0.50	0.55	A112441	0.63	A114329	<0.50	0.50	A112441
Total Silver (Ag)	mg/kg	<0.20	<0.20	A112441	<0.20	A114329	<0.20	0.20	A112441
Total Thallium (Tl)	mg/kg	0.39	0.24	A112441	0.18	A114329	<0.10	0.10	A112441
Total Tin (Sn)	mg/kg	1.4	1.0	A112441	57	A114329	1.0	1.0	A112441
Total Uranium (U)	mg/kg	0.85	1.6	A112441	2.8	A114329	0.43	0.20	A112441
Total Vanadium (V)	mg/kg	89	56	A112441	37	A114329	15	1.0	A112441
Total Zinc (Zn)	mg/kg	120	91	A112441	570	A114329	24	10	A112441
RDL = Reportable Detection Limit									

**VOLATILE ORGANICS BY GC-MS (SOIL)**

BV Labs ID		YZ0762			YZ0762			YZ0763		
Sampling Date		2020/12/01 11:00			2020/12/01 11:00			2020/12/01 11:15		
COC Number		626198-01-01			626198-01-01			626198-01-01		
	UNITS	MW20-02@2.5	RDL	QC Batch	MW20-02@2.5 Lab-Dup	RDL	QC Batch	MW20-02@15	RDL	QC Batch

Volatiles

Xylenes (Total)	mg/kg	<0.045	0.045	A103503				<0.045	0.045	A103503
F1 (C6-C10) - BTEX	mg/kg	<10	10	A103503				<10	10	A103503

Field Preserved Volatiles

Benzene	mg/kg	0.024	0.0050	A109220	0.023	0.0050	A109220	<0.0050	0.0050	A109220
Toluene	mg/kg	<0.050	0.050	A109220	<0.050	0.050	A109220	<0.050	0.050	A109220
Ethylbenzene	mg/kg	0.018	0.010	A109220	0.017	0.010	A109220	<0.010	0.010	A109220
m & p-Xylene	mg/kg	<0.040	0.040	A109220	<0.040	0.040	A109220	<0.040	0.040	A109220
o-Xylene	mg/kg	<0.020	0.020	A109220	<0.020	0.020	A109220	<0.020	0.020	A109220
F1 (C6-C10)	mg/kg	<10	10	A109220	<10	10	A109220	<10	10	A109220

Surrogate Recovery (%)

1,4-Difluorobenzene (sur.)	%	99		A109220	99		A109220	98		A109220
4-Bromofluorobenzene (sur.)	%	92		A109220	95		A109220	90		A109220
D10-o-Xylene (sur.)	%	96		A109220	96		A109220	91		A109220
D4-1,2-Dichloroethane (sur.)	%	101		A109220	102		A109220	100		A109220

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

**VOLATILE ORGANICS BY GC-MS (SOIL)**

BV Labs ID		YZ0764	YZ0766	YZ0767	YZ0768	YZ0770	YZ0878		
Sampling Date		2020/12/01 12:00	2020/12/01 12:30	2020/12/01 12:45	2020/12/01 12:50	2020/12/02 09:15	2020/12/02 10:00		
COC Number		626198-01-01	626198-01-01	626198-01-01	626198-01-01	626198-01-01	626198-02-01		
	UNITS	MW20-03@2	BH20-01@1.5	BH20-02@2.5	BH20-03@3	BH20-04@4	BH20-05@2.5	RDL	QC Batch

Volatiles

Xylenes (Total)	mg/kg	0.19	<0.045	<0.045	0.12	0.12	0.58	0.045	A103503
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	30	<10	<10	10	A103503

Field Preserved Volatiles

Benzene	mg/kg	0.015	<0.0050	<0.0050	0.0091	0.0099 (1)	0.079	0.0050	A109220
Toluene	mg/kg	0.098	<0.050	<0.050	0.19	0.24	0.60	0.050	A109220
Ethylbenzene	mg/kg	0.024	<0.010	<0.010	0.054	0.040	0.095	0.010	A109220
m & p-Xylene	mg/kg	0.12	<0.040	<0.040	0.078	0.082	0.40	0.040	A109220
o-Xylene	mg/kg	0.064	<0.020	<0.020	0.045	0.042	0.18	0.020	A109220
F1 (C6-C10)	mg/kg	<10	<10	<10	30	<10	<10	10	A109220

Surrogate Recovery (%)

1,4-Difluorobenzene (sur.)	%	99	99	99	98	99	99		A109220
4-Bromofluorobenzene (sur.)	%	92	92	91	93	97	92		A109220
D10-o-Xylene (sur.)	%	94	92	97	88	109	110		A109220
D4-1,2-Dichloroethane (sur.)	%	101	100	101	100	101	102		A109220

RDL = Reportable Detection Limit

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

**VOLATILE ORGANICS BY GC-MS (SOIL)**

BV Labs ID		YZ0880		YZ0881	YZ0882	YZ0883		
Sampling Date		2020/12/02 10:30		2020/12/02 10:45	2020/12/02 11:10	2020/12/02 11:15		
COC Number		626198-02-01		626198-02-01	626198-02-01	626198-02-01		
	UNITS	BH20-06@2.5	QC Batch	BH20-06@7.5	MW20-04@1.5	MW20-04@5	RDL	QC Batch

Volatiles								
Xylenes (Total)	mg/kg	<0.045	A108703	<0.045	0.097	<0.045	0.045	A103503
F1 (C6-C10) - BTEX	mg/kg	<10	A108703	<10	<10	<10	10	A103503
Field Preserved Volatiles								
Benzene	mg/kg	<0.0050	A109220	0.013	0.0079	<0.0050	0.0050	A109220
Toluene	mg/kg	<0.050	A109220	<0.050	<0.050	<0.050	0.050	A109220
Ethylbenzene	mg/kg	<0.010	A109220	0.023	0.019	<0.010	0.010	A109220
m & p-Xylene	mg/kg	<0.040	A109220	<0.040	0.058	<0.040	0.040	A109220
o-Xylene	mg/kg	<0.020	A109220	<0.020	0.039	<0.020	0.020	A109220
F1 (C6-C10)	mg/kg	<10	A109220	<10	<10	<10	10	A109220
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	99	A109220	98	99	98		A109220
4-Bromofluorobenzene (sur.)	%	93	A109220	98	98	93		A109220
D10-o-Xylene (sur.)	%	103	A109220	106	109	96		A109220
D4-1,2-Dichloroethane (sur.)	%	100	A109220	101	102	103		A109220
RDL = Reportable Detection Limit								

BV Labs ID		YZ0884		YZ0885		YZ0886	YZ0887		
Sampling Date		2020/12/02 11:40		2020/12/02 11:45		2020/12/02 12:15	2020/12/02 12:20		
COC Number		626198-02-01		626198-02-01		626198-02-01	626198-02-01		
	UNITS	BH20-07@1	QC Batch	BH20-07@6.5	QC Batch	MW20-05@4	MW20-05@10	RDL	QC Batch

Volatiles									
Xylenes (Total)	mg/kg	6.8	A108703	<0.045	A103503	<0.045	<0.045	0.045	A108703
F1 (C6-C10) - BTEX	mg/kg	36	A108703	<10	A103503	<10	<10	10	A108703
Field Preserved Volatiles									
Benzene	mg/kg	0.71	A109220	<0.0050	A109220	<0.0050	<0.0050	0.0050	A109220
Toluene	mg/kg	3.7	A109220	<0.050	A109220	<0.050	<0.050	0.050	A109220
Ethylbenzene	mg/kg	0.81	A109220	<0.010	A109220	<0.010	<0.010	0.010	A109220
m & p-Xylene	mg/kg	4.5	A109220	<0.040	A109220	<0.040	<0.040	0.040	A109220
o-Xylene	mg/kg	2.3	A109220	<0.020	A109220	<0.020	<0.020	0.020	A109220
F1 (C6-C10)	mg/kg	48	A109220	<10	A109220	<10	<10	10	A109220
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	98	A109220	100	A109220	99	98		A109220
4-Bromofluorobenzene (sur.)	%	93	A109220	97	A109220	98	93		A109220
D10-o-Xylene (sur.)	%	95	A109220	99	A109220	105	104		A109220
D4-1,2-Dichloroethane (sur.)	%	104	A109220	104	A109220	102	100		A109220
RDL = Reportable Detection Limit									

**VOLATILE ORGANICS BY GC-MS (SOIL)**

BV Labs ID		YZ0910	YZ0914	YZ0915		
Sampling Date		2020/12/02 13:00	2020/12/01	2020/12/02		
COC Number		626198-03-01	626198-03-01	626198-03-01		
	UNITS	MW20-06@2.5	FD1	FD2	RDL	QC Batch
Volatiles						
Xylenes (Total)	mg/kg	0.089	0.18	<0.045	0.045	A108703
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	10	A108703
Field Preserved Volatiles						
Benzene	mg/kg	0.0092	0.043	0.0097	0.0050	A109220
Toluene	mg/kg	0.082	0.12	<0.050	0.050	A109220
Ethylbenzene	mg/kg	<0.010	0.029	<0.010	0.010	A109220
m & p-Xylene	mg/kg	0.057	0.11	<0.040	0.040	A109220
o-Xylene	mg/kg	0.032	0.069	<0.020	0.020	A109220
F1 (C6-C10)	mg/kg	<10	<10	<10	10	A109220
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	98	99	98		A109220
4-Bromofluorobenzene (sur.)	%	93	94	98		A109220
D10-o-Xylene (sur.)	%	100	98	96		A109220
D4-1,2-Dichloroethane (sur.)	%	101	102	103		A109220
RDL = Reportable Detection Limit						



GENERAL COMMENTS

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

Package 1	8.6°C
Package 2	4.7°C

Results relate only to the items tested.



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BV Labs Job #: C089420
Report Date: 2020/12/21

DILLON CONSULTING LTD.
Client Project #: 20-3725

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A109220	RSU	Matrix Spike [YZ0762-03]	1,4-Difluorobenzene (sur.)	2020/12/10		103	%	50 - 140
			4-Bromofluorobenzene (sur.)	2020/12/10		97	%	50 - 140
			D10-o-Xylene (sur.)	2020/12/10		98	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2020/12/10		101	%	50 - 140
			Benzene	2020/12/10		105	%	50 - 140
			Toluene	2020/12/10		104	%	50 - 140
			Ethylbenzene	2020/12/10		107	%	50 - 140
			m & p-Xylene	2020/12/10		111	%	50 - 140
			o-Xylene	2020/12/10		108	%	50 - 140
			F1 (C6-C10)	2020/12/10		85	%	60 - 140
A109220	RSU	Spiked Blank	1,4-Difluorobenzene (sur.)	2020/12/10		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2020/12/10		98	%	50 - 140
			D10-o-Xylene (sur.)	2020/12/10		93	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2020/12/10		100	%	50 - 140
			Benzene	2020/12/10		95	%	60 - 130
			Toluene	2020/12/10		92	%	60 - 130
			Ethylbenzene	2020/12/10		97	%	60 - 130
			m & p-Xylene	2020/12/10		97	%	60 - 130
			o-Xylene	2020/12/10		99	%	60 - 130
			F1 (C6-C10)	2020/12/10		118	%	60 - 140
A109220	RSU	Method Blank	1,4-Difluorobenzene (sur.)	2020/12/10		99	%	50 - 140
			4-Bromofluorobenzene (sur.)	2020/12/10		91	%	50 - 140
			D10-o-Xylene (sur.)	2020/12/10		93	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2020/12/10		100	%	50 - 140
			Benzene	2020/12/10	<0.0050		mg/kg	
			Toluene	2020/12/10	<0.050		mg/kg	
			Ethylbenzene	2020/12/10	<0.010		mg/kg	
			m & p-Xylene	2020/12/10	<0.040		mg/kg	
			o-Xylene	2020/12/10	<0.020		mg/kg	
			F1 (C6-C10)	2020/12/10	<10		mg/kg	
A109220	RSU	RPD [YZ0762-03]	Benzene	2020/12/10	6.2		%	50
			Toluene	2020/12/10	NC		%	50
			Ethylbenzene	2020/12/10	2.8		%	50
			m & p-Xylene	2020/12/10	NC		%	50
			o-Xylene	2020/12/10	NC		%	50
			F1 (C6-C10)	2020/12/10	NC		%	30
A109578	KLB	Method Blank	Moisture	2020/12/10	<0.30		%	
A109578	KLB	RPD	Moisture	2020/12/10	1.7		%	20
A110910	KLB	Method Blank	Moisture	2020/12/11	<0.30		%	
A110910	KLB	RPD [YZ0770-01]	Moisture	2020/12/11	2.3		%	20
A110994	VP4	Matrix Spike	O-TERPHENYL (sur.)	2020/12/11		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/11		100	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2020/12/11		99	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2020/12/11		97	%	60 - 140
A110994	VP4	Spiked Blank	O-TERPHENYL (sur.)	2020/12/11		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/11		102	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2020/12/11		102	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2020/12/11		100	%	60 - 140
A110994	VP4	Method Blank	O-TERPHENYL (sur.)	2020/12/11		109	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/11	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2020/12/11	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2020/12/11	<50		mg/kg	
A110994	VP4	RPD	F2 (C10-C16 Hydrocarbons)	2020/12/11	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2020/12/11	14		%	40
			F4 (C34-C50 Hydrocarbons)	2020/12/11	NC		%	40



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BV Labs Job #: C089420

Report Date: 2020/12/21

DILLON CONSULTING LTD.

Client Project #: 20-3725

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A111005	NK3	Matrix Spike	D10-ANTHRACENE (sur.)	2020/12/12		100	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/12		94	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/12		91	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/12		102	%	50 - 130
			Acenaphthene	2020/12/12		90	%	50 - 130
			Acenaphthylene	2020/12/12		82	%	50 - 130
			Acridine	2020/12/12		67	%	50 - 130
			Anthracene	2020/12/12		83	%	50 - 130
			Benzo(a)anthracene	2020/12/12		89	%	50 - 130
			Benzo(b&j)fluoranthene	2020/12/12		74	%	50 - 130
			Benzo(k)fluoranthene	2020/12/12		84	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/12		85	%	50 - 130
			Benzo(c)phenanthrene	2020/12/12		85	%	50 - 130
			Benzo(a)pyrene	2020/12/12		79	%	50 - 130
			Benzo(e)pyrene	2020/12/12		80	%	50 - 130
			Chrysene	2020/12/12		86	%	50 - 130
			Dibenz(a,h)anthracene	2020/12/12		92	%	50 - 130
			Fluoranthene	2020/12/12		89	%	50 - 130
			Fluorene	2020/12/12		93	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/12		90	%	50 - 130
			1-Methylnaphthalene	2020/12/12		88	%	50 - 130
			2-Methylnaphthalene	2020/12/12		84	%	50 - 130
			Naphthalene	2020/12/12		82	%	50 - 130
			Phenanthrene	2020/12/12		88	%	50 - 130
			Perylene	2020/12/12		83	%	50 - 130
			Pyrene	2020/12/12		88	%	50 - 130
			Quinoline	2020/12/12		98	%	50 - 130
A111005	NK3	Spiked Blank	D10-ANTHRACENE (sur.)	2020/12/12		90	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/12		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/12		87	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/12		95	%	50 - 130
			Acenaphthene	2020/12/12		88	%	50 - 130
			Acenaphthylene	2020/12/12		81	%	50 - 130
			Acridine	2020/12/12		67	%	50 - 130
			Anthracene	2020/12/12		81	%	50 - 130
			Benzo(a)anthracene	2020/12/12		92	%	50 - 130
			Benzo(b&j)fluoranthene	2020/12/12		82	%	50 - 130
			Benzo(k)fluoranthene	2020/12/12		87	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/12		92	%	50 - 130
			Benzo(c)phenanthrene	2020/12/12		91	%	50 - 130
			Benzo(a)pyrene	2020/12/12		83	%	50 - 130
			Benzo(e)pyrene	2020/12/12		86	%	50 - 130
			Chrysene	2020/12/12		91	%	50 - 130
			Dibenz(a,h)anthracene	2020/12/12		97	%	50 - 130
			Fluoranthene	2020/12/12		91	%	50 - 130
			Fluorene	2020/12/12		90	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/12		97	%	50 - 130
			1-Methylnaphthalene	2020/12/12		86	%	50 - 130
			2-Methylnaphthalene	2020/12/12		83	%	50 - 130
			Naphthalene	2020/12/12		82	%	50 - 130
A111005	NK3	Method Blank	Phenanthrene	2020/12/12		86	%	50 - 130
			Perylene	2020/12/12		89	%	50 - 130
			Pyrene	2020/12/12		89	%	50 - 130
			Quinoline	2020/12/12		103	%	50 - 130
			D10-ANTHRACENE (sur.)	2020/12/12		104	%	50 - 130



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BV Labs Job #: C089420
Report Date: 2020/12/21

DILLON CONSULTING LTD.
Client Project #: 20-3725

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A111005	NK3	RPD	D8-ACENAPHTHYLENE (sur.)	2020/12/12		98	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/12		96	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/12		114	%	50 - 130
			Acenaphthene	2020/12/12	<0.0050		mg/kg	
			Acenaphthylene	2020/12/12	<0.0050		mg/kg	
			Acridine	2020/12/12	<0.010		mg/kg	
			Anthracene	2020/12/12	<0.0040		mg/kg	
			Benzo(a)anthracene	2020/12/12	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2020/12/12	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2020/12/12	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2020/12/12	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2020/12/12	<0.0050		mg/kg	
			Benzo(a)pyrene	2020/12/12	<0.0050		mg/kg	
			Benzo(e)pyrene	2020/12/12	<0.0050		mg/kg	
			Chrysene	2020/12/12	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2020/12/12	<0.0050		mg/kg	
			Fluoranthene	2020/12/12	<0.0050		mg/kg	
			Fluorene	2020/12/12	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2020/12/12	<0.0050		mg/kg	
			1-Methylnaphthalene	2020/12/12	<0.0050		mg/kg	
			2-Methylnaphthalene	2020/12/12	<0.0050		mg/kg	
			Naphthalene	2020/12/12	<0.0050		mg/kg	
			Phenanthrene	2020/12/12	<0.0050		mg/kg	
			Perylene	2020/12/12	<0.0050		mg/kg	
			Pyrene	2020/12/12	<0.0050		mg/kg	
			Quinoline	2020/12/12	<0.010		mg/kg	
			Acenaphthene	2020/12/12	NC		%	50
			Acenaphthylene	2020/12/12	NC		%	50
			Acridine	2020/12/12	NC		%	50
			Anthracene	2020/12/12	NC		%	50
			Benzo(a)anthracene	2020/12/12	NC		%	50
			Benzo(b&j)fluoranthene	2020/12/12	12		%	50
			Benzo(k)fluoranthene	2020/12/12	NC		%	50
			Benzo(g,h,i)perylene	2020/12/12	NC		%	50
			Benzo(a)pyrene	2020/12/12	NC		%	50
			Chrysene	2020/12/12	NC		%	50
			Dibenz(a,h)anthracene	2020/12/12	NC		%	50
			Fluoranthene	2020/12/12	NC		%	50
			Fluorene	2020/12/12	NC		%	50
			Indeno(1,2,3-cd)pyrene	2020/12/12	22		%	50
			2-Methylnaphthalene	2020/12/12	NC		%	50
			Naphthalene	2020/12/12	NC		%	50
			Phenanthrene	2020/12/12	NC		%	50
			Pyrene	2020/12/12	NC		%	50
			Quinoline	2020/12/12	NC		%	50
A111051	TL0	Method Blank	Moisture	2020/12/11	<0.30		%	
A111051	TL0	RPD	Moisture	2020/12/10	2.8		%	20
A111117	LLO	Matrix Spike	O-TERPHENYL (sur.)	2020/12/11		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/11		94	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2020/12/11		87	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2020/12/11		94	%	60 - 140
	LLO	Spiked Blank	O-TERPHENYL (sur.)	2020/12/11		95	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/11		92	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2020/12/11		87	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2020/12/11		90	%	60 - 140



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A111117	LLO	Method Blank	O-TERPHENYL (sur.)	2020/12/11		105	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/11	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2020/12/11	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2020/12/11	<50		mg/kg	
A111117	LLO	RPD	F2 (C10-C16 Hydrocarbons)	2020/12/11	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2020/12/11	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2020/12/11	NC		%	40
A111120	NK3	Matrix Spike [YZ0880-01]	D10-ANTHRACENE (sur.)	2020/12/12		96	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/12		100	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/12		93	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/12		100	%	50 - 130
			Acenaphthene	2020/12/12		89	%	50 - 130
			Acenaphthylene	2020/12/12		88	%	50 - 130
			Acridine	2020/12/12		69	%	50 - 130
			Anthracene	2020/12/12		79	%	50 - 130
			Benzo(a)anthracene	2020/12/12		94	%	50 - 130
			Benzo(b&j)fluoranthene	2020/12/12		82	%	50 - 130
			Benzo(k)fluoranthene	2020/12/12		91	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/12		74	%	50 - 130
			Benzo(c)phenanthrene	2020/12/12		96	%	50 - 130
			Benzo(a)pyrene	2020/12/12		77	%	50 - 130
			Benzo(e)pyrene	2020/12/12		84	%	50 - 130
			Chrysene	2020/12/12		88	%	50 - 130
			Dibenz(a,h)anthracene	2020/12/12		85	%	50 - 130
			Fluoranthene	2020/12/12		81	%	50 - 130
			Fluorene	2020/12/12		95	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/12		79	%	50 - 130
			1-Methylnaphthalene	2020/12/12		88	%	50 - 130
			2-Methylnaphthalene	2020/12/12		85	%	50 - 130
			Naphthalene	2020/12/12		84	%	50 - 130
			Phenanthrene	2020/12/12		69	%	50 - 130
			Perylene	2020/12/12		79	%	50 - 130
			Pyrene	2020/12/12		87	%	50 - 130
			Quinoline	2020/12/12		100	%	50 - 130
A111120	NK3	Spiked Blank	D10-ANTHRACENE (sur.)	2020/12/12		93	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/12		96	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/12		89	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/12		101	%	50 - 130
			Acenaphthene	2020/12/12		88	%	50 - 130
			Acenaphthylene	2020/12/12		84	%	50 - 130
			Acridine	2020/12/12		68	%	50 - 130
			Anthracene	2020/12/12		81	%	50 - 130
			Benzo(a)anthracene	2020/12/12		102	%	50 - 130
			Benzo(b&j)fluoranthene	2020/12/12		91	%	50 - 130
			Benzo(k)fluoranthene	2020/12/12		97	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/12		87	%	50 - 130
			Benzo(c)phenanthrene	2020/12/12		96	%	50 - 130
			Benzo(a)pyrene	2020/12/12		89	%	50 - 130
			Benzo(e)pyrene	2020/12/12		93	%	50 - 130
			Chrysene	2020/12/12		100	%	50 - 130
			Dibenz(a,h)anthracene	2020/12/12		84	%	50 - 130
			Fluoranthene	2020/12/12		95	%	50 - 130
			Fluorene	2020/12/12		89	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/12		88	%	50 - 130
			1-Methylnaphthalene	2020/12/12		85	%	50 - 130



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A111120	NK3	Method Blank	2-Methylnaphthalene	2020/12/12		81	%	50 - 130
			Naphthalene	2020/12/12		79	%	50 - 130
			Phenanthrene	2020/12/12		83	%	50 - 130
			Perylene	2020/12/12		90	%	50 - 130
			Pyrene	2020/12/12		96	%	50 - 130
			Quinoline	2020/12/12		99	%	50 - 130
			D10-ANTHRACENE (sur.)	2020/12/12		98	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/12		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/12		92	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/12		106	%	50 - 130
			Acenaphthene	2020/12/12	<0.0050		mg/kg	
			Acenaphthylene	2020/12/12	<0.0050		mg/kg	
			Acridine	2020/12/12	<0.010		mg/kg	
			Anthracene	2020/12/12	<0.0040		mg/kg	
			Benzo(a)anthracene	2020/12/12	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2020/12/12	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2020/12/12	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2020/12/12	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2020/12/12	<0.0050		mg/kg	
			Benzo(a)pyrene	2020/12/12	<0.0050		mg/kg	
			Benzo(e)pyrene	2020/12/12	<0.0050		mg/kg	
			Chrysene	2020/12/12	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2020/12/12	<0.0050		mg/kg	
			Fluoranthene	2020/12/12	<0.0050		mg/kg	
			Fluorene	2020/12/12	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2020/12/12	<0.0050		mg/kg	
			1-Methylnaphthalene	2020/12/12	<0.0050		mg/kg	
			2-Methylnaphthalene	2020/12/12	<0.0050		mg/kg	
			Naphthalene	2020/12/12	<0.0050		mg/kg	
			Phenanthrene	2020/12/12	<0.0050		mg/kg	
			Perylene	2020/12/12	<0.0050		mg/kg	
			Pyrene	2020/12/12	<0.0050		mg/kg	
			Quinoline	2020/12/12	<0.010		mg/kg	
A111120	NK3	RPD [YZ0880-01]	Acenaphthene	2020/12/12	36		%	50
			Acenaphthylene	2020/12/12	17		%	50
			Acridine	2020/12/12	NC		%	50
			Anthracene	2020/12/12	46		%	50
			Benzo(a)anthracene	2020/12/12	37		%	50
			Benzo(b&j)fluoranthene	2020/12/12	38		%	50
			Benzo(k)fluoranthene	2020/12/12	42		%	50
			Benzo(g,h,i)perylene	2020/12/12	37		%	50
			Benzo(c)phenanthrene	2020/12/12	27		%	50
			Benzo(a)pyrene	2020/12/12	43		%	50
			Benzo(e)pyrene	2020/12/12	35		%	50
			Chrysene	2020/12/12	28		%	50
			Dibenz(a,h)anthracene	2020/12/12	22		%	50
			Fluoranthene	2020/12/12	38		%	50
			Fluorene	2020/12/12	36		%	50
			Indeno(1,2,3-cd)pyrene	2020/12/12	34		%	50
			1-Methylnaphthalene	2020/12/12	5.8		%	50
			2-Methylnaphthalene	2020/12/12	0.52		%	50
			Naphthalene	2020/12/12	12		%	50
			Phenanthrene	2020/12/12	34		%	50
			Perylene	2020/12/12	1.0		%	50
			Pyrene	2020/12/12	33		%	50



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A111541	NK3	Matrix Spike	Quinoline	2020/12/12	NC		%	50
			D10-ANTHRACENE (sur.)	2020/12/11		85	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/11		88	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/11		82	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/11		86	%	50 - 130
			Acenaphthene	2020/12/11		83	%	50 - 130
			Acenaphthylene	2020/12/11		81	%	50 - 130
			Acridine	2020/12/11		67	%	50 - 130
			Anthracene	2020/12/11		79	%	50 - 130
			Benzo(a)anthracene	2020/12/11		95	%	50 - 130
			Benzo(b&j)fluoranthene	2020/12/11		83	%	50 - 130
			Benzo(k)fluoranthene	2020/12/11		89	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/11		80	%	50 - 130
			Benzo(c)phenanthrene	2020/12/11		89	%	50 - 130
			Benzo(a)pyrene	2020/12/11		79	%	50 - 130
			Benzo(e)pyrene	2020/12/11		82	%	50 - 130
			Chrysene	2020/12/11		90	%	50 - 130
			Dibenz(a,h)anthracene	2020/12/11		80	%	50 - 130
			Fluoranthene	2020/12/11		96	%	50 - 130
			Fluorene	2020/12/11		88	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/11		83	%	50 - 130
			1-Methylnaphthalene	2020/12/11		83	%	50 - 130
			2-Methylnaphthalene	2020/12/11		80	%	50 - 130
			Naphthalene	2020/12/11		77	%	50 - 130
			Phenanthrene	2020/12/11		80	%	50 - 130
			Perylene	2020/12/11		78	%	50 - 130
			Pyrene	2020/12/11		97	%	50 - 130
			Quinoline	2020/12/11		101	%	50 - 130
A111541	NK3	Spiked Blank	D10-ANTHRACENE (sur.)	2020/12/11		87	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/11		91	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/11		82	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/11		91	%	50 - 130
			Acenaphthene	2020/12/11		85	%	50 - 130
			Acenaphthylene	2020/12/11		83	%	50 - 130
			Acridine	2020/12/11		69	%	50 - 130
			Anthracene	2020/12/11		79	%	50 - 130
			Benzo(a)anthracene	2020/12/11		99	%	50 - 130
			Benzo(b&j)fluoranthene	2020/12/11		88	%	50 - 130
			Benzo(k)fluoranthene	2020/12/11		93	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/11		85	%	50 - 130
			Benzo(c)phenanthrene	2020/12/11		93	%	50 - 130
			Benzo(a)pyrene	2020/12/11		87	%	50 - 130
			Benzo(e)pyrene	2020/12/11		90	%	50 - 130
			Chrysene	2020/12/11		95	%	50 - 130
			Dibenz(a,h)anthracene	2020/12/11		82	%	50 - 130
			Fluoranthene	2020/12/11		94	%	50 - 130
			Fluorene	2020/12/11		88	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/11		86	%	50 - 130
			1-Methylnaphthalene	2020/12/11		83	%	50 - 130
			2-Methylnaphthalene	2020/12/11		79	%	50 - 130
			Naphthalene	2020/12/11		76	%	50 - 130
			Phenanthrene	2020/12/11		80	%	50 - 130
			Perylene	2020/12/11		86	%	50 - 130
			Pyrene	2020/12/11		94	%	50 - 130
			Quinoline	2020/12/11		101	%	50 - 130



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A111541	NK3	Method Blank	D10-ANTHRACENE (sur.)	2020/12/11		87	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/11		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/11		82	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/11		91	%	50 - 130
			Acenaphthene	2020/12/11	<0.0050		mg/kg	
			Acenaphthylene	2020/12/11	<0.0050		mg/kg	
			Acridine	2020/12/11	<0.010		mg/kg	
			Anthracene	2020/12/11	<0.0040		mg/kg	
			Benzo(a)anthracene	2020/12/11	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2020/12/11	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2020/12/11	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2020/12/11	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2020/12/11	<0.0050		mg/kg	
			Benzo(a)pyrene	2020/12/11	<0.0050		mg/kg	
			Benzo(e)pyrene	2020/12/11	<0.0050		mg/kg	
			Chrysene	2020/12/11	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2020/12/11	<0.0050		mg/kg	
			Fluoranthene	2020/12/11	<0.0050		mg/kg	
			Fluorene	2020/12/11	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2020/12/11	<0.0050		mg/kg	
			1-Methylnaphthalene	2020/12/11	<0.0050		mg/kg	
			2-Methylnaphthalene	2020/12/11	<0.0050		mg/kg	
			Naphthalene	2020/12/11	<0.0050		mg/kg	
			Phenanthrene	2020/12/11	<0.0050		mg/kg	
			Perylene	2020/12/11	<0.0050		mg/kg	
			Pyrene	2020/12/11	<0.0050		mg/kg	
			Quinoline	2020/12/11	<0.010		mg/kg	
A111541	NK3	RPD	Acenaphthene	2020/12/11	NC		%	50
			Acenaphthylene	2020/12/11	NC		%	50
			Acridine	2020/12/11	NC		%	50
			Anthracene	2020/12/11	NC		%	50
			Benzo(a)anthracene	2020/12/11	NC		%	50
			Benzo(b&j)fluoranthene	2020/12/11	NC		%	50
			Benzo(k)fluoranthene	2020/12/11	NC		%	50
			Benzo(g,h,i)perylene	2020/12/11	NC		%	50
			Benzo(c)phenanthrene	2020/12/11	NC		%	50
			Benzo(a)pyrene	2020/12/11	NC		%	50
			Benzo(e)pyrene	2020/12/11	NC		%	50
			Chrysene	2020/12/11	NC		%	50
			Dibenz(a,h)anthracene	2020/12/11	NC		%	50
			Fluoranthene	2020/12/11	NC		%	50
			Fluorene	2020/12/11	NC		%	50
			Indeno(1,2,3-cd)pyrene	2020/12/11	NC		%	50
			1-Methylnaphthalene	2020/12/11	22		%	50
			2-Methylnaphthalene	2020/12/11	23		%	50
			Naphthalene	2020/12/11	14		%	50
			Phenanthrene	2020/12/11	NC		%	50
			Perylene	2020/12/11	NC		%	50
			Pyrene	2020/12/11	NC		%	50
			Quinoline	2020/12/11	NC		%	50
A111544	VP4	Matrix Spike	O-TERPHENYL (sur.)	2020/12/11		109	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/11		99	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2020/12/11		104	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2020/12/11		107	%	60 - 140
A111544	VP4	Spiked Blank	O-TERPHENYL (sur.)	2020/12/11		102	%	60 - 140



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A111544	VP4	Method Blank	F2 (C10-C16 Hydrocarbons)	2020/12/11		98	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2020/12/11		100	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2020/12/11		100	%	60 - 140
			O-TERPHENYL (sur.)	2020/12/11		110	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/11	<10		mg/kg	
A111544	VP4	RPD	F3 (C16-C34 Hydrocarbons)	2020/12/11	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2020/12/11	<50		mg/kg	
			F2 (C10-C16 Hydrocarbons)	2020/12/11	35		%	40
			F3 (C16-C34 Hydrocarbons)	2020/12/11	28		%	40
			F4 (C34-C50 Hydrocarbons)	2020/12/11	NC		%	40
A112372	EH2	QC Standard	Sieve - #200 (>0.075mm)	2020/12/12		100	%	75 - 125
A112372	EH2	RPD [YZ0767-01]	Sieve - Pan	2020/12/12		100	%	75 - 125
			Sieve - #10 (>2.00mm)	2020/12/12	72 (1)		%	30
			Sieve - #200 (>0.075mm)	2020/12/12	9.9		%	30
A112441	PC5	Matrix Spike	Sieve - Pan	2020/12/12	1.1		%	30
			Total Antimony (Sb)	2020/12/12		102	%	75 - 125
			Total Arsenic (As)	2020/12/12		110	%	75 - 125
			Total Barium (Ba)	2020/12/12		111	%	75 - 125
			Total Beryllium (Be)	2020/12/12		107	%	75 - 125
			Total Cadmium (Cd)	2020/12/12		109	%	75 - 125
			Total Chromium (Cr)	2020/12/12		103	%	75 - 125
			Total Cobalt (Co)	2020/12/12		103	%	75 - 125
			Total Copper (Cu)	2020/12/12		106	%	75 - 125
			Total Lead (Pb)	2020/12/12		104	%	75 - 125
			Total Molybdenum (Mo)	2020/12/12		108	%	75 - 125
			Total Nickel (Ni)	2020/12/12		103	%	75 - 125
			Total Selenium (Se)	2020/12/12		118	%	75 - 125
			Total Silver (Ag)	2020/12/12		106	%	75 - 125
			Total Thallium (Tl)	2020/12/12		104	%	75 - 125
			Total Tin (Sn)	2020/12/12		104	%	75 - 125
			Total Uranium (U)	2020/12/12		106	%	75 - 125
			Total Vanadium (V)	2020/12/12		105	%	75 - 125
			Total Zinc (Zn)	2020/12/12		112	%	75 - 125
A112441	PC5	QC Standard	Total Antimony (Sb)	2020/12/12		119	%	15 - 182
			Total Arsenic (As)	2020/12/12		113	%	53 - 147
			Total Barium (Ba)	2020/12/12		110	%	80 - 119
			Total Cadmium (Cd)	2020/12/12		104	%	72 - 128
			Total Chromium (Cr)	2020/12/12		106	%	59 - 141
			Total Cobalt (Co)	2020/12/12		101	%	58 - 142
			Total Copper (Cu)	2020/12/12		104	%	83 - 117
			Total Lead (Pb)	2020/12/12		111	%	79 - 121
			Total Molybdenum (Mo)	2020/12/12		122	%	67 - 133
			Total Nickel (Ni)	2020/12/12		109	%	79 - 121
			Total Silver (Ag)	2020/12/12		87	%	47 - 153
			Total Tin (Sn)	2020/12/12		105	%	67 - 133
			Total Uranium (U)	2020/12/12		106	%	77 - 123
			Total Vanadium (V)	2020/12/12		109	%	79 - 121
			Total Zinc (Zn)	2020/12/12		110	%	79 - 121
A112441	PC5	Spiked Blank	Total Antimony (Sb)	2020/12/12		98	%	80 - 120
			Total Arsenic (As)	2020/12/12		106	%	80 - 120
			Total Barium (Ba)	2020/12/12		107	%	80 - 120
			Total Beryllium (Be)	2020/12/12		102	%	80 - 120
			Total Cadmium (Cd)	2020/12/12		104	%	80 - 120
			Total Chromium (Cr)	2020/12/12		99	%	80 - 120
			Total Cobalt (Co)	2020/12/12		100	%	80 - 120



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A112441	PC5	Method Blank	Total Copper (Cu)	2020/12/12		102	%	80 - 120
			Total Lead (Pb)	2020/12/12		100	%	80 - 120
			Total Molybdenum (Mo)	2020/12/12		103	%	80 - 120
			Total Nickel (Ni)	2020/12/12		100	%	80 - 120
			Total Selenium (Se)	2020/12/12		114	%	80 - 120
			Total Silver (Ag)	2020/12/12		101	%	80 - 120
			Total Thallium (Tl)	2020/12/12		102	%	80 - 120
			Total Tin (Sn)	2020/12/12		101	%	80 - 120
			Total Uranium (U)	2020/12/12		102	%	80 - 120
			Total Vanadium (V)	2020/12/12		101	%	80 - 120
			Total Zinc (Zn)	2020/12/12		109	%	80 - 120
			Total Antimony (Sb)	2020/12/12	<0.50		mg/kg	
			Total Arsenic (As)	2020/12/12	<1.0		mg/kg	
			Total Barium (Ba)	2020/12/12	<1.0		mg/kg	
			Total Beryllium (Be)	2020/12/12	<0.40		mg/kg	
			Total Cadmium (Cd)	2020/12/12	<0.050		mg/kg	
			Total Chromium (Cr)	2020/12/12	<1.0		mg/kg	
			Total Cobalt (Co)	2020/12/12	<0.50		mg/kg	
			Total Copper (Cu)	2020/12/12	<1.0		mg/kg	
			Total Lead (Pb)	2020/12/12	<0.50		mg/kg	
			Total Molybdenum (Mo)	2020/12/12	<0.40		mg/kg	
			Total Nickel (Ni)	2020/12/12	<1.0		mg/kg	
			Total Selenium (Se)	2020/12/12	<0.50		mg/kg	
			Total Silver (Ag)	2020/12/12	<0.20		mg/kg	
			Total Thallium (Tl)	2020/12/12	<0.10		mg/kg	
			Total Tin (Sn)	2020/12/12	<1.0		mg/kg	
			Total Uranium (U)	2020/12/12	<0.20		mg/kg	
			Total Vanadium (V)	2020/12/12	<1.0		mg/kg	
			Total Zinc (Zn)	2020/12/12	<10		mg/kg	
A112441	PC5	RPD	Total Antimony (Sb)	2020/12/12	NC		%	30
			Total Arsenic (As)	2020/12/12	NC		%	30
			Total Barium (Ba)	2020/12/12	NC		%	35
			Total Beryllium (Be)	2020/12/12	NC		%	30
			Total Cadmium (Cd)	2020/12/12	NC		%	30
			Total Chromium (Cr)	2020/12/12	NC		%	30
			Total Cobalt (Co)	2020/12/12	NC		%	30
			Total Copper (Cu)	2020/12/12	NC		%	30
			Total Lead (Pb)	2020/12/12	NC		%	35
			Total Molybdenum (Mo)	2020/12/12	NC		%	35
			Total Nickel (Ni)	2020/12/12	NC		%	30
			Total Selenium (Se)	2020/12/12	NC		%	30
			Total Silver (Ag)	2020/12/12	NC		%	35
			Total Thallium (Tl)	2020/12/12	NC		%	30
			Total Tin (Sn)	2020/12/12	NC		%	35
			Total Uranium (U)	2020/12/12	NC		%	30
			Total Vanadium (V)	2020/12/12	NC		%	30
			Total Zinc (Zn)	2020/12/12	NC		%	30
A112704	PC5	Matrix Spike	Total Antimony (Sb)	2020/12/12		66 (1)	%	75 - 125
			Total Arsenic (As)	2020/12/12		92	%	75 - 125
			Total Barium (Ba)	2020/12/12		NC	%	75 - 125
			Total Beryllium (Be)	2020/12/12		92	%	75 - 125
			Total Cadmium (Cd)	2020/12/12		94	%	75 - 125
			Total Chromium (Cr)	2020/12/12		101	%	75 - 125
			Total Cobalt (Co)	2020/12/12		89	%	75 - 125
			Total Copper (Cu)	2020/12/12		86	%	75 - 125

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A112704	PC5	QC Standard	Total Lead (Pb)	2020/12/12		90	%	75 - 125
			Total Molybdenum (Mo)	2020/12/12		91	%	75 - 125
			Total Nickel (Ni)	2020/12/12		88	%	75 - 125
			Total Selenium (Se)	2020/12/12		97	%	75 - 125
			Total Silver (Ag)	2020/12/12		91	%	75 - 125
			Total Thallium (Tl)	2020/12/12		79	%	75 - 125
			Total Tin (Sn)	2020/12/12		92	%	75 - 125
			Total Uranium (U)	2020/12/12		92	%	75 - 125
			Total Vanadium (V)	2020/12/12		109	%	75 - 125
			Total Zinc (Zn)	2020/12/12		NC	%	75 - 125
			Total Antimony (Sb)	2020/12/12		107	%	15 - 182
			Total Arsenic (As)	2020/12/12		112	%	53 - 147
			Total Barium (Ba)	2020/12/12		105	%	80 - 119
			Total Cadmium (Cd)	2020/12/12		107	%	72 - 128
			Total Chromium (Cr)	2020/12/12		87	%	59 - 141
			Total Cobalt (Co)	2020/12/12		98	%	58 - 142
			Total Copper (Cu)	2020/12/12		104	%	83 - 117
			Total Lead (Pb)	2020/12/12		111	%	79 - 121
			Total Molybdenum (Mo)	2020/12/12		114	%	67 - 133
			Total Nickel (Ni)	2020/12/12		105	%	79 - 121
A112704	PC5	Spiked Blank	Total Silver (Ag)	2020/12/12		114	%	47 - 153
			Total Tin (Sn)	2020/12/12		101	%	67 - 133
			Total Uranium (U)	2020/12/12		95	%	77 - 123
			Total Vanadium (V)	2020/12/12		97	%	79 - 121
			Total Zinc (Zn)	2020/12/12		110	%	79 - 121
			Total Antimony (Sb)	2020/12/12		94	%	80 - 120
			Total Arsenic (As)	2020/12/12		104	%	80 - 120
			Total Barium (Ba)	2020/12/12		103	%	80 - 120
			Total Beryllium (Be)	2020/12/12		100	%	80 - 120
			Total Cadmium (Cd)	2020/12/12		101	%	80 - 120
			Total Chromium (Cr)	2020/12/12		97	%	80 - 120
			Total Cobalt (Co)	2020/12/12		99	%	80 - 120
			Total Copper (Cu)	2020/12/12		101	%	80 - 120
			Total Lead (Pb)	2020/12/12		97	%	80 - 120
			Total Molybdenum (Mo)	2020/12/12		101	%	80 - 120
			Total Nickel (Ni)	2020/12/12		100	%	80 - 120
			Total Selenium (Se)	2020/12/12		110	%	80 - 120
			Total Silver (Ag)	2020/12/12		99	%	80 - 120
			Total Thallium (Tl)	2020/12/12		98	%	80 - 120
			Total Tin (Sn)	2020/12/12		98	%	80 - 120
A112704	PC5	Method Blank	Total Uranium (U)	2020/12/12		100	%	80 - 120
			Total Vanadium (V)	2020/12/12		101	%	80 - 120
			Total Zinc (Zn)	2020/12/12		107	%	80 - 120
			Total Antimony (Sb)	2020/12/12	<0.50		mg/kg	
			Total Arsenic (As)	2020/12/12	<1.0		mg/kg	
			Total Barium (Ba)	2020/12/12	<1.0		mg/kg	
			Total Beryllium (Be)	2020/12/12	<0.40		mg/kg	
			Total Cadmium (Cd)	2020/12/12	<0.050		mg/kg	
			Total Chromium (Cr)	2020/12/12	<1.0		mg/kg	
			Total Cobalt (Co)	2020/12/12	<0.50		mg/kg	
			Total Copper (Cu)	2020/12/12	<1.0		mg/kg	
			Total Lead (Pb)	2020/12/12	<0.50		mg/kg	
			Total Molybdenum (Mo)	2020/12/12	<0.40		mg/kg	
			Total Nickel (Ni)	2020/12/12	<1.0		mg/kg	
			Total Selenium (Se)	2020/12/12	<0.50		mg/kg	

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A112978	JUM	QC Standard	Total Silver (Ag)	2020/12/12	<0.20		mg/kg	
			Total Thallium (Tl)	2020/12/12	<0.10		mg/kg	
			Total Tin (Sn)	2020/12/12	<1.0		mg/kg	
			Total Uranium (U)	2020/12/12	<0.20		mg/kg	
			Total Vanadium (V)	2020/12/12	<1.0		mg/kg	
			Total Zinc (Zn)	2020/12/12	<10		mg/kg	
			Saturation %	2020/12/13		100	%	75 - 125
			Saturation %	2020/12/13	6.4		%	12
			Soluble (CaCl ₂) pH	2020/12/14		100	%	98 - 102
			Soluble (CaCl ₂) pH	2020/12/14		100	%	97 - 103
			Soluble (CaCl ₂) pH	2020/12/14	0		%	N/A
			Total Antimony (Sb)	2020/12/14		85	%	75 - 125
			Total Arsenic (As)	2020/12/14		90	%	75 - 125
			Total Barium (Ba)	2020/12/14		NC	%	75 - 125
			Total Beryllium (Be)	2020/12/14		91	%	75 - 125
			Total Cadmium (Cd)	2020/12/14		94	%	75 - 125
			Total Chromium (Cr)	2020/12/14		96	%	75 - 125
			Total Cobalt (Co)	2020/12/14		92	%	75 - 125
			Total Copper (Cu)	2020/12/14		93	%	75 - 125
			Total Lead (Pb)	2020/12/14		92	%	75 - 125
A113078	KH2	Matrix Spike	Total Molybdenum (Mo)	2020/12/14		94	%	75 - 125
			Total Nickel (Ni)	2020/12/14		92	%	75 - 125
			Total Selenium (Se)	2020/12/14		94	%	75 - 125
			Total Silver (Ag)	2020/12/14		93	%	75 - 125
			Total Thallium (Tl)	2020/12/14		91	%	75 - 125
			Total Tin (Sn)	2020/12/14		95	%	75 - 125
			Total Uranium (U)	2020/12/14		93	%	75 - 125
			Total Vanadium (V)	2020/12/14		100	%	75 - 125
			Total Zinc (Zn)	2020/12/14		96	%	75 - 125
			Total Antimony (Sb)	2020/12/14		105	%	15 - 182
			Total Arsenic (As)	2020/12/14		99	%	53 - 147
			Total Barium (Ba)	2020/12/14		99	%	80 - 119
			Total Cadmium (Cd)	2020/12/14		105	%	72 - 128
			Total Chromium (Cr)	2020/12/14		98	%	59 - 141
			Total Cobalt (Co)	2020/12/14		98	%	58 - 142
			Total Copper (Cu)	2020/12/14		103	%	83 - 117
			Total Lead (Pb)	2020/12/14		108	%	79 - 121
			Total Molybdenum (Mo)	2020/12/14		106	%	67 - 133
			Total Nickel (Ni)	2020/12/14		109	%	79 - 121
			Total Silver (Ag)	2020/12/14		115	%	47 - 153
A113078	KH2	QC Standard	Total Tin (Sn)	2020/12/14		101	%	67 - 133
			Total Uranium (U)	2020/12/14		89	%	77 - 123
			Total Vanadium (V)	2020/12/14		103	%	79 - 121
			Total Zinc (Zn)	2020/12/14		105	%	79 - 121
			Total Antimony (Sb)	2020/12/14		94	%	80 - 120
			Total Arsenic (As)	2020/12/14		100	%	80 - 120
			Total Barium (Ba)	2020/12/14		101	%	80 - 120
			Total Beryllium (Be)	2020/12/14		96	%	80 - 120
			Total Cadmium (Cd)	2020/12/14		100	%	80 - 120
			Total Chromium (Cr)	2020/12/14		100	%	80 - 120
			Total Cobalt (Co)	2020/12/14		100	%	80 - 120
			Total Copper (Cu)	2020/12/14		101	%	80 - 120
			Total Lead (Pb)	2020/12/14		100	%	80 - 120
			Total Molybdenum (Mo)	2020/12/14		102	%	80 - 120
A113078	KH2	Spiked Blank	Total Nickel (Ni)	2020/12/14		101	%	80 - 120



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A113078	KH2	Method Blank	Total Selenium (Se)	2020/12/14		100	%	80 - 120
			Total Silver (Ag)	2020/12/14		99	%	80 - 120
			Total Thallium (Tl)	2020/12/14		100	%	80 - 120
			Total Tin (Sn)	2020/12/14		100	%	80 - 120
			Total Uranium (U)	2020/12/14		100	%	80 - 120
			Total Vanadium (V)	2020/12/14		101	%	80 - 120
			Total Zinc (Zn)	2020/12/14		96	%	80 - 120
			Total Antimony (Sb)	2020/12/14	<0.50		mg/kg	
			Total Arsenic (As)	2020/12/14	<1.0		mg/kg	
			Total Barium (Ba)	2020/12/14	<1.0		mg/kg	
			Total Beryllium (Be)	2020/12/14	<0.40		mg/kg	
			Total Cadmium (Cd)	2020/12/14	<0.050		mg/kg	
			Total Chromium (Cr)	2020/12/14	<1.0		mg/kg	
			Total Cobalt (Co)	2020/12/14	<0.50		mg/kg	
			Total Copper (Cu)	2020/12/14	<1.0		mg/kg	
			Total Lead (Pb)	2020/12/14	<0.50		mg/kg	
			Total Molybdenum (Mo)	2020/12/14	<0.40		mg/kg	
			Total Nickel (Ni)	2020/12/14	<1.0		mg/kg	
			Total Selenium (Se)	2020/12/14	<0.50		mg/kg	
			Total Silver (Ag)	2020/12/14	<0.20		mg/kg	
			Total Thallium (Tl)	2020/12/14	<0.10		mg/kg	
			Total Tin (Sn)	2020/12/14	<1.0		mg/kg	
			Total Uranium (U)	2020/12/14	<0.20		mg/kg	
			Total Vanadium (V)	2020/12/14	<1.0		mg/kg	
			Total Zinc (Zn)	2020/12/14	<10		mg/kg	
A113078	KH2	RPD	Total Antimony (Sb)	2020/12/14	NC		%	30
			Total Arsenic (As)	2020/12/14	9.9		%	30
			Total Barium (Ba)	2020/12/14	6.3		%	35
			Total Beryllium (Be)	2020/12/14	NC		%	30
			Total Cadmium (Cd)	2020/12/14	10		%	30
			Total Chromium (Cr)	2020/12/14	0.64		%	30
			Total Cobalt (Co)	2020/12/14	8.7		%	30
			Total Copper (Cu)	2020/12/14	2.0		%	30
			Total Lead (Pb)	2020/12/14	5.0		%	35
			Total Molybdenum (Mo)	2020/12/14	17		%	35
			Total Nickel (Ni)	2020/12/14	20		%	30
			Total Selenium (Se)	2020/12/14	NC		%	30
			Total Silver (Ag)	2020/12/14	NC		%	35
			Total Thallium (Tl)	2020/12/14	NC		%	30
			Total Tin (Sn)	2020/12/14	NC		%	35
			Total Uranium (U)	2020/12/14	10		%	30
			Total Vanadium (V)	2020/12/14	11		%	30
			Total Zinc (Zn)	2020/12/14	0.43		%	30
A113390	MB5	Matrix Spike	Soluble Chloride (Cl)	2020/12/14		78	%	75 - 125
A113390	MB5	QC Standard	Soluble Chloride (Cl)	2020/12/14		106	%	75 - 125
A113390	MB5	Spiked Blank	Soluble Chloride (Cl)	2020/12/14		108	%	80 - 120
A113390	MB5	Method Blank	Soluble Chloride (Cl)	2020/12/14	<10		mg/L	
A113390	MB5	RPD	Soluble Chloride (Cl)	2020/12/14	14		%	30
A113714	MAP	Matrix Spike	Soluble Calcium (Ca)	2020/12/14		90	%	75 - 125
			Soluble Magnesium (Mg)	2020/12/14		96	%	75 - 125
			Soluble Sodium (Na)	2020/12/14		94	%	75 - 125
			Soluble Potassium (K)	2020/12/14		97	%	75 - 125
			Soluble Calcium (Ca)	2020/12/15		96	%	75 - 125
			Soluble Magnesium (Mg)	2020/12/15		98	%	75 - 125
			Soluble Sodium (Na)	2020/12/15		96	%	75 - 125



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A113714	MAP	Spiked Blank	Soluble Potassium (K)	2020/12/15		100	%	75 - 125
			Soluble Sulphate (SO ₄)	2020/12/15		81	%	75 - 125
			Soluble Calcium (Ca)	2020/12/14		98	%	80 - 120
			Soluble Magnesium (Mg)	2020/12/14		98	%	80 - 120
			Soluble Sodium (Na)	2020/12/14		94	%	80 - 120
			Soluble Potassium (K)	2020/12/14		98	%	80 - 120
A113714	MAP	Method Blank	Soluble Calcium (Ca)	2020/12/14	<1.5		mg/L	
			Soluble Magnesium (Mg)	2020/12/14	<1.0		mg/L	
			Soluble Sodium (Na)	2020/12/14	<2.5		mg/L	
			Soluble Potassium (K)	2020/12/14	<1.3		mg/L	
			Soluble Sulphate (SO ₄)	2020/12/14	<5.0		mg/L	
			Soluble Calcium (Ca)	2020/12/14	1.3		%	30
A113714	MAP	RPD	Soluble Magnesium (Mg)	2020/12/14	2.1		%	30
			Soluble Sodium (Na)	2020/12/14	1.5		%	30
			Soluble Potassium (K)	2020/12/14	0.78		%	30
			Soluble Sulphate (SO ₄)	2020/12/14	2.7		%	30
			Soluble Conductivity	2020/12/14		115	%	75 - 125
			Soluble Conductivity	2020/12/14		99	%	90 - 110
A113732	NSW	QC Standard	Soluble Conductivity	2020/12/14				
A113732	NSW	Spiked Blank	Soluble Conductivity	2020/12/14				
A113732	NSW	Method Blank	Soluble Conductivity	2020/12/14	<0.020		dS/m	
A113732	NSW	RPD	Soluble Conductivity	2020/12/14	1.8		%	20
A113940	LQ1	QC Standard	Saturation %	2020/12/16		102	%	75 - 125
A113940	LQ1	RPD	Saturation %	2020/12/16	0.27		%	12
A113941	JHC	QC Standard	Soluble (CaCl ₂) pH	2020/12/16		100	%	98 - 102
A113941	JHC	Spiked Blank	Soluble (CaCl ₂) pH	2020/12/16		99	%	97 - 103
A113941	JHC	RPD	Soluble (CaCl ₂) pH	2020/12/16	0.26		%	N/A
A113980	LQ1	QC Standard	Saturation %	2020/12/16		102	%	75 - 125
A113980	LQ1	RPD	Saturation %	2020/12/16	3.9		%	12
A113982	JHC	QC Standard	Soluble (CaCl ₂) pH	2020/12/16		99	%	98 - 102
A113982	JHC	Spiked Blank	Soluble (CaCl ₂) pH	2020/12/16		100	%	97 - 103
A113982	JHC	RPD	Soluble (CaCl ₂) pH	2020/12/16	0.39		%	N/A
A114329	KH2	Matrix Spike	Total Antimony (Sb)	2020/12/15		84	%	75 - 125
			Total Arsenic (As)	2020/12/15		107	%	75 - 125
			Total Barium (Ba)	2020/12/15		NC	%	75 - 125
			Total Beryllium (Be)	2020/12/15		92	%	75 - 125
			Total Cadmium (Cd)	2020/12/15		93	%	75 - 125
			Total Chromium (Cr)	2020/12/15		117	%	75 - 125
			Total Cobalt (Co)	2020/12/15		100	%	75 - 125
			Total Copper (Cu)	2020/12/15		102	%	75 - 125
			Total Lead (Pb)	2020/12/15		98	%	75 - 125
			Total Molybdenum (Mo)	2020/12/15		95	%	75 - 125
			Total Nickel (Ni)	2020/12/15		105	%	75 - 125
			Total Selenium (Se)	2020/12/15		99	%	75 - 125
			Total Silver (Ag)	2020/12/15		92	%	75 - 125
			Total Thallium (Tl)	2020/12/15		90	%	75 - 125
			Total Tin (Sn)	2020/12/15		92	%	75 - 125
			Total Uranium (U)	2020/12/15		93	%	75 - 125
			Total Vanadium (V)	2020/12/15		141 (1)	%	75 - 125
			Total Zinc (Zn)	2020/12/15		114	%	75 - 125
			Total Antimony (Sb)	2020/12/15		123	%	15 - 182
			Total Arsenic (As)	2020/12/15		119	%	53 - 147
			Total Barium (Ba)	2020/12/15		105	%	80 - 119
			Total Cadmium (Cd)	2020/12/15		101	%	72 - 128
			Total Chromium (Cr)	2020/12/15		100	%	59 - 141
			Total Cobalt (Co)	2020/12/15		106	%	58 - 142
			Total Copper (Cu)	2020/12/15		117	%	83 - 117
A114329	KH2	QC Standard	Total Antimony (Sb)	2020/12/15				
			Total Arsenic (As)	2020/12/15				
			Total Barium (Ba)	2020/12/15				
			Total Cadmium (Cd)	2020/12/15				
			Total Chromium (Cr)	2020/12/15				
			Total Cobalt (Co)	2020/12/15				
			Total Copper (Cu)	2020/12/15				



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A114329	KH2	Spiked Blank	Total Lead (Pb)	2020/12/15		109	%	79 - 121
			Total Molybdenum (Mo)	2020/12/15		112	%	67 - 133
			Total Nickel (Ni)	2020/12/15		113	%	79 - 121
			Total Silver (Ag)	2020/12/15		123	%	47 - 153
			Total Tin (Sn)	2020/12/15		103	%	67 - 133
			Total Uranium (U)	2020/12/15		96	%	77 - 123
			Total Vanadium (V)	2020/12/15		108	%	79 - 121
			Total Zinc (Zn)	2020/12/15		113	%	79 - 121
			Total Antimony (Sb)	2020/12/15		91	%	80 - 120
			Total Arsenic (As)	2020/12/15		103	%	80 - 120
			Total Barium (Ba)	2020/12/15		100	%	80 - 120
			Total Beryllium (Be)	2020/12/15		94	%	80 - 120
			Total Cadmium (Cd)	2020/12/15		98	%	80 - 120
			Total Chromium (Cr)	2020/12/15		100	%	80 - 120
			Total Cobalt (Co)	2020/12/15		101	%	80 - 120
			Total Copper (Cu)	2020/12/15		102	%	80 - 120
			Total Lead (Pb)	2020/12/15		96	%	80 - 120
			Total Molybdenum (Mo)	2020/12/15		100	%	80 - 120
			Total Nickel (Ni)	2020/12/15		101	%	80 - 120
			Total Selenium (Se)	2020/12/15		103	%	80 - 120
			Total Silver (Ag)	2020/12/15		98	%	80 - 120
			Total Thallium (Tl)	2020/12/15		98	%	80 - 120
			Total Tin (Sn)	2020/12/15		97	%	80 - 120
			Total Uranium (U)	2020/12/15		100	%	80 - 120
			Total Vanadium (V)	2020/12/15		101	%	80 - 120
			Total Zinc (Zn)	2020/12/15		103	%	80 - 120
A114329	KH2	Method Blank	Total Antimony (Sb)	2020/12/15	<0.50		mg/kg	
			Total Arsenic (As)	2020/12/15	<1.0		mg/kg	
			Total Barium (Ba)	2020/12/15	<1.0		mg/kg	
			Total Beryllium (Be)	2020/12/15	<0.40		mg/kg	
			Total Cadmium (Cd)	2020/12/15	<0.050		mg/kg	
			Total Chromium (Cr)	2020/12/15	<1.0		mg/kg	
			Total Cobalt (Co)	2020/12/15	<0.50		mg/kg	
			Total Copper (Cu)	2020/12/15	<1.0		mg/kg	
			Total Lead (Pb)	2020/12/15	<0.50		mg/kg	
			Total Molybdenum (Mo)	2020/12/15	<0.40		mg/kg	
			Total Nickel (Ni)	2020/12/15	<1.0		mg/kg	
			Total Selenium (Se)	2020/12/15	<0.50		mg/kg	
			Total Silver (Ag)	2020/12/15	<0.20		mg/kg	
			Total Thallium (Tl)	2020/12/15	<0.10		mg/kg	
			Total Tin (Sn)	2020/12/15	<1.0		mg/kg	
			Total Uranium (U)	2020/12/15	<0.20		mg/kg	
			Total Vanadium (V)	2020/12/15	<1.0		mg/kg	
			Total Zinc (Zn)	2020/12/15	<10		mg/kg	
A114329	KH2	RPD	Total Antimony (Sb)	2020/12/15	NC		%	30
			Total Arsenic (As)	2020/12/15	14		%	30
			Total Barium (Ba)	2020/12/15	4.4		%	35
			Total Beryllium (Be)	2020/12/15	NC		%	30
			Total Cadmium (Cd)	2020/12/15	13		%	30
			Total Chromium (Cr)	2020/12/15	5.7		%	30
			Total Cobalt (Co)	2020/12/15	4.0		%	30
			Total Copper (Cu)	2020/12/15	8.1		%	30
			Total Lead (Pb)	2020/12/15	5.7		%	35
			Total Molybdenum (Mo)	2020/12/15	5.7		%	35
			Total Nickel (Ni)	2020/12/15	3.7		%	30

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A114332	KH2	Matrix Spike	Total Selenium (Se)	2020/12/15	NC		%	30
			Total Silver (Ag)	2020/12/15	NC		%	35
			Total Thallium (Tl)	2020/12/15	13		%	30
			Total Tin (Sn)	2020/12/15	NC		%	35
			Total Uranium (U)	2020/12/15	5.8		%	30
			Total Vanadium (V)	2020/12/15	8.8		%	30
			Total Zinc (Zn)	2020/12/15	2.5		%	30
			Total Antimony (Sb)	2020/12/15		86	%	75 - 125
			Total Arsenic (As)	2020/12/15		95	%	75 - 125
			Total Barium (Ba)	2020/12/15		NC	%	75 - 125
			Total Beryllium (Be)	2020/12/15		98	%	75 - 125
			Total Cadmium (Cd)	2020/12/15		95	%	75 - 125
			Total Chromium (Cr)	2020/12/15		100	%	75 - 125
			Total Cobalt (Co)	2020/12/15		96	%	75 - 125
			Total Copper (Cu)	2020/12/15		95	%	75 - 125
			Total Lead (Pb)	2020/12/15		92	%	75 - 125
			Total Molybdenum (Mo)	2020/12/15		96	%	75 - 125
			Total Nickel (Ni)	2020/12/15		94	%	75 - 125
			Total Selenium (Se)	2020/12/15		97	%	75 - 125
			Total Silver (Ag)	2020/12/15		94	%	75 - 125
			Total Thallium (Tl)	2020/12/15		91	%	75 - 125
			Total Tin (Sn)	2020/12/15		97	%	75 - 125
			Total Uranium (U)	2020/12/15		93	%	75 - 125
			Total Vanadium (V)	2020/12/15		104	%	75 - 125
			Total Zinc (Zn)	2020/12/15		94	%	75 - 125
A114332	KH2	QC Standard	Total Antimony (Sb)	2020/12/15		109	%	15 - 182
			Total Arsenic (As)	2020/12/15		112	%	53 - 147
			Total Barium (Ba)	2020/12/15		103	%	80 - 119
			Total Cadmium (Cd)	2020/12/15		103	%	72 - 128
			Total Chromium (Cr)	2020/12/15		98	%	59 - 141
			Total Cobalt (Co)	2020/12/15		99	%	58 - 142
			Total Copper (Cu)	2020/12/15		110	%	83 - 117
			Total Lead (Pb)	2020/12/15		111	%	79 - 121
			Total Molybdenum (Mo)	2020/12/15		108	%	67 - 133
			Total Nickel (Ni)	2020/12/15		110	%	79 - 121
			Total Silver (Ag)	2020/12/15		105	%	47 - 153
			Total Tin (Sn)	2020/12/15		108	%	67 - 133
			Total Uranium (U)	2020/12/15		99	%	77 - 123
			Total Vanadium (V)	2020/12/15		104	%	79 - 121
			Total Zinc (Zn)	2020/12/15		107	%	79 - 121
A114332	KH2	Spiked Blank	Total Antimony (Sb)	2020/12/15		94	%	80 - 120
			Total Arsenic (As)	2020/12/15		102	%	80 - 120
			Total Barium (Ba)	2020/12/15		102	%	80 - 120
			Total Beryllium (Be)	2020/12/15		104	%	80 - 120
			Total Cadmium (Cd)	2020/12/15		101	%	80 - 120
			Total Chromium (Cr)	2020/12/15		100	%	80 - 120
			Total Cobalt (Co)	2020/12/15		101	%	80 - 120
			Total Copper (Cu)	2020/12/15		102	%	80 - 120
			Total Lead (Pb)	2020/12/15		99	%	80 - 120
			Total Molybdenum (Mo)	2020/12/15		101	%	80 - 120
			Total Nickel (Ni)	2020/12/15		101	%	80 - 120
			Total Selenium (Se)	2020/12/15		104	%	80 - 120
			Total Silver (Ag)	2020/12/15		100	%	80 - 120
			Total Thallium (Tl)	2020/12/15		98	%	80 - 120
			Total Tin (Sn)	2020/12/15		101	%	80 - 120

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A114332	KH2	Method Blank	Total Uranium (U)	2020/12/15		100	%	80 - 120
			Total Vanadium (V)	2020/12/15		100	%	80 - 120
			Total Zinc (Zn)	2020/12/15		102	%	80 - 120
			Total Antimony (Sb)	2020/12/15	<0.50		mg/kg	
			Total Arsenic (As)	2020/12/15	<1.0		mg/kg	
			Total Barium (Ba)	2020/12/15	<1.0		mg/kg	
			Total Beryllium (Be)	2020/12/15	<0.40		mg/kg	
			Total Cadmium (Cd)	2020/12/15	<0.050		mg/kg	
			Total Chromium (Cr)	2020/12/15	<1.0		mg/kg	
			Total Cobalt (Co)	2020/12/15	<0.50		mg/kg	
			Total Copper (Cu)	2020/12/15	<1.0		mg/kg	
			Total Lead (Pb)	2020/12/15	<0.50		mg/kg	
			Total Molybdenum (Mo)	2020/12/15	<0.40		mg/kg	
			Total Nickel (Ni)	2020/12/15	<1.0		mg/kg	
			Total Selenium (Se)	2020/12/15	<0.50		mg/kg	
			Total Silver (Ag)	2020/12/15	<0.20		mg/kg	
			Total Thallium (Tl)	2020/12/15	<0.10		mg/kg	
			Total Tin (Sn)	2020/12/15	<1.0		mg/kg	
			Total Uranium (U)	2020/12/15	<0.20		mg/kg	
			Total Vanadium (V)	2020/12/15	<1.0		mg/kg	
A114332	KH2	RPD	Total Zinc (Zn)	2020/12/15	<10		mg/kg	
			Total Antimony (Sb)	2020/12/15	NC		%	30
			Total Arsenic (As)	2020/12/15	3.2		%	30
			Total Barium (Ba)	2020/12/15	3.1		%	35
			Total Beryllium (Be)	2020/12/15	NC		%	30
			Total Cadmium (Cd)	2020/12/15	4.2		%	30
			Total Chromium (Cr)	2020/12/15	4.8		%	30
			Total Cobalt (Co)	2020/12/15	8.8		%	30
			Total Copper (Cu)	2020/12/15	6.9		%	30
			Total Lead (Pb)	2020/12/15	3.4		%	35
			Total Molybdenum (Mo)	2020/12/15	NC		%	35
			Total Nickel (Ni)	2020/12/15	7.2		%	30
			Total Selenium (Se)	2020/12/15	NC		%	30
			Total Silver (Ag)	2020/12/15	NC		%	35
			Total Thallium (Tl)	2020/12/15	NC		%	30
			Total Tin (Sn)	2020/12/15	NC		%	35
			Total Uranium (U)	2020/12/15	2.4		%	30
			Total Vanadium (V)	2020/12/15	1.5		%	30
			Total Zinc (Zn)	2020/12/15	3.5		%	30
A114936	KH2	Matrix Spike [YZ0911-01]	Total Antimony (Sb)	2020/12/15		85	%	75 - 125
			Total Arsenic (As)	2020/12/15		118	%	75 - 125
			Total Barium (Ba)	2020/12/15		NC	%	75 - 125
			Total Beryllium (Be)	2020/12/15		111	%	75 - 125
			Total Cadmium (Cd)	2020/12/15		109	%	75 - 125
			Total Chromium (Cr)	2020/12/15		136 (1)	%	75 - 125
			Total Cobalt (Co)	2020/12/15		112	%	75 - 125
			Total Copper (Cu)	2020/12/15		117	%	75 - 125
			Total Lead (Pb)	2020/12/15		103	%	75 - 125
			Total Molybdenum (Mo)	2020/12/15		109	%	75 - 125
			Total Nickel (Ni)	2020/12/15		114	%	75 - 125
			Total Selenium (Se)	2020/12/15		117	%	75 - 125
			Total Silver (Ag)	2020/12/15		105	%	75 - 125
			Total Thallium (Tl)	2020/12/15		102	%	75 - 125
			Total Tin (Sn)	2020/12/15		109	%	75 - 125
			Total Uranium (U)	2020/12/15		107	%	75 - 125



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A114936	KH2	QC Standard	Total Vanadium (V)	2020/12/15		NC	%	75 - 125
			Total Zinc (Zn)	2020/12/15		NC	%	75 - 125
			Total Antimony (Sb)	2020/12/15		117	%	15 - 182
			Total Arsenic (As)	2020/12/15		121	%	53 - 147
			Total Barium (Ba)	2020/12/15		107	%	80 - 119
			Total Cadmium (Cd)	2020/12/15		111	%	72 - 128
			Total Chromium (Cr)	2020/12/15		100	%	59 - 141
			Total Cobalt (Co)	2020/12/15		105	%	58 - 142
			Total Copper (Cu)	2020/12/15		108	%	83 - 117
			Total Lead (Pb)	2020/12/15		110	%	79 - 121
			Total Molybdenum (Mo)	2020/12/15		119	%	67 - 133
			Total Nickel (Ni)	2020/12/15		114	%	79 - 121
			Total Silver (Ag)	2020/12/15		110	%	47 - 153
			Total Tin (Sn)	2020/12/15		107	%	67 - 133
			Total Uranium (U)	2020/12/15		90	%	77 - 123
			Total Vanadium (V)	2020/12/15		109	%	79 - 121
A114936	KH2	Spiked Blank	Total Zinc (Zn)	2020/12/15		116	%	79 - 121
			Total Antimony (Sb)	2020/12/15		95	%	80 - 120
			Total Arsenic (As)	2020/12/15		112	%	80 - 120
			Total Barium (Ba)	2020/12/15		104	%	80 - 120
			Total Beryllium (Be)	2020/12/15		97	%	80 - 120
			Total Cadmium (Cd)	2020/12/15		101	%	80 - 120
			Total Chromium (Cr)	2020/12/15		104	%	80 - 120
			Total Cobalt (Co)	2020/12/15		105	%	80 - 120
			Total Copper (Cu)	2020/12/15		106	%	80 - 120
			Total Lead (Pb)	2020/12/15		96	%	80 - 120
			Total Molybdenum (Mo)	2020/12/15		99	%	80 - 120
			Total Nickel (Ni)	2020/12/15		105	%	80 - 120
			Total Selenium (Se)	2020/12/15		115	%	80 - 120
			Total Silver (Ag)	2020/12/15		98	%	80 - 120
			Total Thallium (Tl)	2020/12/15		99	%	80 - 120
			Total Tin (Sn)	2020/12/15		97	%	80 - 120
A114936	KH2	Method Blank	Total Uranium (U)	2020/12/15		100	%	80 - 120
			Total Vanadium (V)	2020/12/15		106	%	80 - 120
			Total Zinc (Zn)	2020/12/15		112	%	80 - 120
			Total Antimony (Sb)	2020/12/15	<0.50		mg/kg	
			Total Arsenic (As)	2020/12/15	<1.0		mg/kg	
			Total Barium (Ba)	2020/12/15	<1.0		mg/kg	
			Total Beryllium (Be)	2020/12/15	<0.40		mg/kg	
			Total Cadmium (Cd)	2020/12/15	<0.050		mg/kg	
			Total Chromium (Cr)	2020/12/15	<1.0		mg/kg	
			Total Cobalt (Co)	2020/12/15	<0.50		mg/kg	
			Total Copper (Cu)	2020/12/15	<1.0		mg/kg	
			Total Lead (Pb)	2020/12/15	<0.50		mg/kg	
			Total Molybdenum (Mo)	2020/12/15	<0.40		mg/kg	
			Total Nickel (Ni)	2020/12/15	<1.0		mg/kg	
			Total Selenium (Se)	2020/12/15	<0.50		mg/kg	
			Total Silver (Ag)	2020/12/15	<0.20		mg/kg	
A114936	KH2	RPD [YZ0911-01]	Total Thallium (Tl)	2020/12/15	<0.10		mg/kg	
			Total Tin (Sn)	2020/12/15	<1.0		mg/kg	
			Total Uranium (U)	2020/12/15	<0.20		mg/kg	
			Total Vanadium (V)	2020/12/15	<1.0		mg/kg	
			Total Zinc (Zn)	2020/12/15	<10		mg/kg	
			Total Antimony (Sb)	2020/12/15	6.2		%	30
			Total Arsenic (As)	2020/12/15	4.7		%	30



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			Total Barium (Ba)	2020/12/15	4.3		%	35
			Total Beryllium (Be)	2020/12/15	7.4		%	30
			Total Cadmium (Cd)	2020/12/15	8.4		%	30
			Total Chromium (Cr)	2020/12/15	15		%	30
			Total Cobalt (Co)	2020/12/15	5.6		%	30
			Total Copper (Cu)	2020/12/15	2.3		%	30
			Total Lead (Pb)	2020/12/15	2.4		%	35
			Total Molybdenum (Mo)	2020/12/15	4.2		%	35
			Total Nickel (Ni)	2020/12/15	9.8		%	30
			Total Selenium (Se)	2020/12/15	NC		%	30
			Total Silver (Ag)	2020/12/15	NC		%	35
			Total Thallium (Tl)	2020/12/15	1.1		%	30
			Total Tin (Sn)	2020/12/15	7.5		%	35
			Total Uranium (U)	2020/12/15	1.2		%	30
			Total Vanadium (V)	2020/12/15	6.6		%	30
			Total Zinc (Zn)	2020/12/15	2.4		%	30
A115031	ETS	Method Blank	Moisture	2020/12/16	<0.30		%	
A115031	ETS	RPD	Moisture	2020/12/15	4.2		%	20
A116164	PL	Matrix Spike	Soluble Calcium (Ca)	2020/12/16		93	%	75 - 125
			Soluble Magnesium (Mg)	2020/12/16		100	%	75 - 125
			Soluble Sodium (Na)	2020/12/16		91	%	75 - 125
			Soluble Potassium (K)	2020/12/16		101	%	75 - 125
A116164	PL	QC Standard	Soluble Calcium (Ca)	2020/12/16		108	%	75 - 125
			Soluble Magnesium (Mg)	2020/12/16		110	%	75 - 125
			Soluble Sodium (Na)	2020/12/16		101	%	75 - 125
			Soluble Potassium (K)	2020/12/16		86	%	75 - 125
			Soluble Sulphate (SO4)	2020/12/16		111	%	75 - 125
A116164	PL	Spiked Blank	Soluble Calcium (Ca)	2020/12/16		95	%	80 - 120
			Soluble Magnesium (Mg)	2020/12/16		102	%	80 - 120
			Soluble Sodium (Na)	2020/12/16		95	%	80 - 120
			Soluble Potassium (K)	2020/12/16		100	%	80 - 120
A116164	PL	Method Blank	Soluble Calcium (Ca)	2020/12/16	<1.5		mg/L	
			Soluble Magnesium (Mg)	2020/12/16	<1.0		mg/L	
			Soluble Sodium (Na)	2020/12/16	<2.5		mg/L	
			Soluble Potassium (K)	2020/12/16	<1.3		mg/L	
			Soluble Sulphate (SO4)	2020/12/16	<5.0		mg/L	
A116164	PL	RPD	Soluble Calcium (Ca)	2020/12/16	3.1		%	30
			Soluble Magnesium (Mg)	2020/12/16	3.4		%	30
			Soluble Sodium (Na)	2020/12/16	2.6		%	30
			Soluble Potassium (K)	2020/12/16	1.5		%	30
			Soluble Sulphate (SO4)	2020/12/16	2.8		%	30
A116205	STI	Matrix Spike	Soluble Chloride (Cl)	2020/12/16		113	%	75 - 125
A116205	STI	QC Standard	Soluble Chloride (Cl)	2020/12/16		107	%	75 - 125
A116205	STI	Spiked Blank	Soluble Chloride (Cl)	2020/12/16		108	%	80 - 120
A116205	STI	Method Blank	Soluble Chloride (Cl)	2020/12/16	<10		mg/L	
A116205	STI	RPD	Soluble Chloride (Cl)	2020/12/16	12		%	30
A116226	JAB	Matrix Spike	Soluble Calcium (Ca)	2020/12/16		95	%	75 - 125
			Soluble Magnesium (Mg)	2020/12/16		97	%	75 - 125
			Soluble Sodium (Na)	2020/12/16		97	%	75 - 125
			Soluble Potassium (K)	2020/12/16		97	%	75 - 125
A116226	JAB	QC Standard	Soluble Calcium (Ca)	2020/12/16		119	%	75 - 125
			Soluble Magnesium (Mg)	2020/12/16		114	%	75 - 125
			Soluble Sodium (Na)	2020/12/16		110	%	75 - 125
			Soluble Potassium (K)	2020/12/16		98	%	75 - 125
			Soluble Sulphate (SO4)	2020/12/16		114	%	75 - 125



QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A116226	JAB	Spiked Blank	Soluble Calcium (Ca)	2020/12/16		99	%	80 - 120
			Soluble Magnesium (Mg)	2020/12/16		100	%	80 - 120
			Soluble Sodium (Na)	2020/12/16		97	%	80 - 120
			Soluble Potassium (K)	2020/12/16		97	%	80 - 120
A116226	JAB	Method Blank	Soluble Calcium (Ca)	2020/12/16	<1.5		mg/L	
			Soluble Magnesium (Mg)	2020/12/16	<1.0		mg/L	
			Soluble Sodium (Na)	2020/12/16	<2.5		mg/L	
			Soluble Potassium (K)	2020/12/16	<1.3		mg/L	
			Soluble Sulphate (SO4)	2020/12/16	<5.0		mg/L	
A116226	JAB	RPD	Soluble Calcium (Ca)	2020/12/16	2.6		%	30
			Soluble Magnesium (Mg)	2020/12/16	0.76		%	30
			Soluble Sodium (Na)	2020/12/16	0.72		%	30
			Soluble Potassium (K)	2020/12/16	3.2		%	30
			Soluble Sulphate (SO4)	2020/12/16	1.0		%	30
A116251	STI	Matrix Spike	Soluble Chloride (Cl)	2020/12/16		114	%	75 - 125
A116251	STI	QC Standard	Soluble Chloride (Cl)	2020/12/16		107	%	75 - 125
A116251	STI	Spiked Blank	Soluble Chloride (Cl)	2020/12/16		112	%	80 - 120
A116251	STI	Method Blank	Soluble Chloride (Cl)	2020/12/16	<10		mg/L	
A116251	STI	RPD	Soluble Chloride (Cl)	2020/12/16	NC		%	30
A116983	ZI	QC Standard	Soluble Conductivity	2020/12/17		114	%	75 - 125
A116983	ZI	Spiked Blank	Soluble Conductivity	2020/12/17		101	%	90 - 110
A116983	ZI	Method Blank	Soluble Conductivity	2020/12/17	<0.020		dS/m	
A116983	ZI	RPD	Soluble Conductivity	2020/12/17	3.5		%	20
A117048	ZI	QC Standard	Soluble Conductivity	2020/12/17		113	%	75 - 125
A117048	ZI	Spiked Blank	Soluble Conductivity	2020/12/17		100	%	90 - 110
A117048	ZI	Method Blank	Soluble Conductivity	2020/12/17	<0.020		dS/m	
A117048	ZI	RPD	Soluble Conductivity	2020/12/17	5.1		%	20
A119907	MYI	RPD [YZ0761-02]	Aldicarb	2020/12/17	NC		%	50
			Atrazine	2020/12/17	NC		%	50
			Bendiocarb	2020/12/17	NC		%	50
			Carbaryl	2020/12/17	NC		%	50
			Carbofuran	2020/12/17	NC		%	50
			Chlorpyrifos (Dursban)	2020/12/17	NC		%	50
			Cyanazine (Bladex)	2020/12/17	NC		%	50
			Demeton-S	2020/12/17	NC		%	50
			Diazinon	2020/12/17	NC		%	50
			Dichlorvos	2020/12/17	NC		%	50
			Dimethoate	2020/12/17	NC		%	50
			Ethion	2020/12/17	NC		%	50
			Fenchlorphos (Ronnel)	2020/12/17	NC		%	50
			Fenthion	2020/12/17	NC		%	50
			Fonofos	2020/12/17	NC		%	50
			Guthion (Azinphos-methyl)	2020/12/17	NC		%	50
			Malathion	2020/12/17	NC		%	50
			Mevinphos (Phosdrin)	2020/12/17	NC		%	50
			Parathion Ethyl	2020/12/17	NC		%	50
			Parathion methyl	2020/12/17	NC		%	50
			Phorate (Thimet)	2020/12/17	NC		%	50
			Phosmet	2020/12/17	NC		%	50
			Prometryn	2020/12/17	NC		%	50
			Simazine	2020/12/17	NC		%	50
			Terbufos	2020/12/17	NC		%	50
			Triallate	2020/12/17	NC		%	50
			Trifluralin	2020/12/17	NC		%	50



QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
				Metolachlor	2020/12/17	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 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 spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration) NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$). (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.									

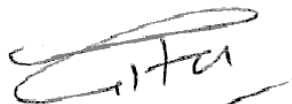


VALIDATION SIGNATURE PAGE

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



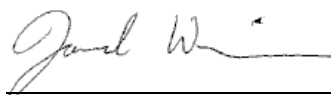
Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist



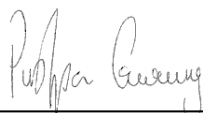
Gita Pokhrel, Laboratory Supervisor



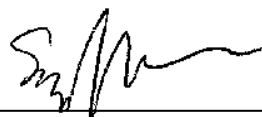
Janet Gao, B.Sc., QP, Supervisor, Organics



Jared Wiseman, B.Sc., P.Chem., QP, Senior Analyst, Organics



Pushpa Gurung, Lab Manager



Sandy (Wei) Yuan, M.Sc., QP, Scientific Specialist



Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BUREAU VENTILAS		INVOICE TO:		Report Information				Project Information				Laboratory Use Only											
Company Name		#8815 DILLON CONSULTING LTD.		Company Name				Quotation #		C00154		BV Labs Job #		Bottle Order #:									
Contact Name		ACCOUNTS PAYABLE		Contact Name		Shane Chapman		P.O. #				C089420											
Address		1558 Willson Place		Address				Project #		20-3725		Chain Of Custody Record		Project Manager									
		Winnipeg MB R3T 0Y4						Project Name						Janelle Kochan									
Phone		(204) 453-2301		Fax:		(204) 452-4412		Site #				C#626198-01-01											
Email		apwinnipeg@dillon.ca		Phone		(204) 453-2353 Ext: 4029		Fax:		(204) 452-4412													
				Email		schapman@dillon.ca		Sampled By															
Regulatory Criteria				Special Instructions				Analysis Requested				Turnaround Time (TAT) Required											
												Please provide advance notice for rush projects											
Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form				Regulated Drinking Water ? (Y / N)				Metals Field Filtered ? (Y / N)				Regular (Standard) TAT											
												Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.											
Samples must be kept cool (< 10°C) from time of sampling until delivery to BV Labs												Job Specific Rush TAT (if applies to entire submission)											
												Date Required: _____ Time Required: _____											
												Rush Confirmation Number _____ (call lab for #)											
Sample Barcode Label		Sample (Location) Identification		Date Sampled		Time Sampled		Matrix				# of Bottles		Comments									
1		MW20-100-Z.5		20/12/01		10:00		Soil				3											
2		MW20-02@ 2.5		11:00								3											
3		MW20-02@ 1.5		11:15								2											
4		MW20-03@ 2		12:00								4											
5		MW20-03@ 8		12:15								2											
6		BH20-01@ 1.5		12:30								3											
7		BH20-02@ 2.5		12:45								4											
8		BH20-03@ 3		12:50								3											
9		BH20-03@ 7		12:55								1											
10		BH20-04@ 4		20/12/02		9:15						3											
* RELINQUISHED BY: (Signature/Print)				Date: (YY/MM/DD)		Time		RECEIVED BY: (Signature/Print)				Date: (YY/MM/DD)		Time		# Jars used and not submitted		Lab Use Only					
MST				20/12/03		16:00		A. Brooklin				20/12/02		11:15				Time Sensitive		Custody Seal Intact on Cooler?			
								Stanley P Thomas				20/12/03		08:45				Temperature (°C) on Receipt		Yes ☐ No ☐			
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.																				White: BV Labs		Yellow: Client	



Bureau Veritas Laboratories
D-675 Berry Street, Winnipeg, Manitoba Canada R3H 1A7 Tel: (204) 772-7276 Toll-free: 800-563-6266 Fax: (204) 772-2386 www.bvlabs.com

Chain Of Custody Record

Page 2 of 3

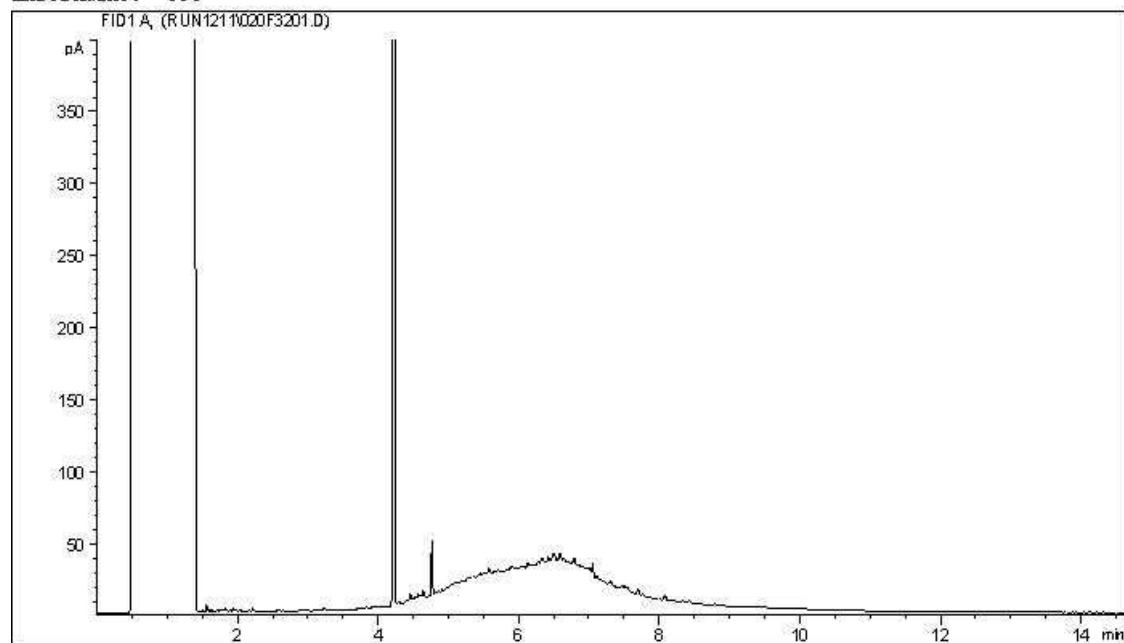
INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#8815 DILLON CONSULTING LTD.	Company Name		Quotation #	C00154	BV Labs Job #	Bottle Order #:
Contact Name	ACCOUNTS PAYABLE	Contact Name	Shane Chapman	P.O. #		C089420	626198
Address	1558 Willson Place	Address		Project #	20-3725		
	Winnipeg MB R3T 0Y4			Project Name		Chain Of Custody Record	Project Manager
Phone	(204) 453-2301	Phone	(204) 453-2353 Ext: 4029	Site #		C#626198-02-01	Janelle Kochan
Email	apwinnipeg@dillon.ca	Email	schapman@dillon.ca	Sampled By			
Regulatory Criteria		Special Instructions		Analysis Requested		Turnaround Time (TAT) Required	
				Regulated Drinking Water ? (Y/N) Metals Field Filtered ? (Y/N) BTEX and F1-F4 in Soil (Vials) PAH in Soil by GC/MS SOIL SALINITY 4 Elements by ICPMS - Soils Granite +/- FSP Pesticide/herbicide		Please provide advance notice for rush projects Regular (Standard) TAT (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number _____ (call lab for #)	
Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form							
Samples must be kept cool (< 10°C) from time of sampling until delivery to BV Labs							
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix		# of Bottles	Comments
1	BH20-05@ 2.5	20/12/02	10:00	Soil	X X	3	
2	BH20-05@ 4.5		10:10		X	1	
3	BH20-06@ 2.5		10:30		X X	4	
4	BH20-06@ 7.5		10:45		X	2	
5	MW20-04@ 1.5		11:10		X	2	
6	MW20-04@ 5		11:15		X	2	
7	BH20-07@ 1		11:40		X X	3	
8	BH20-07@ 6.5		11:45		X	2	
9	MW20-05@ 4		12:15		X X X	5	
10	MW20-05@ 10		12:20		X X	3	
* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time
MST		20/12/03	10:00	BH BROOKLYN H		20/12/02	10:15
				Stanley P Thomas		20/12/03	08:45
						# Jars used and not submitted	
						Time Sensitive	Temperature (°C) on Receipt
						☐	8.8 7.2 9.8
						Custody Seal Intact on Cooler?	
						☐ Yes ☐ No	
						White: BV Labs Yellow: Client	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

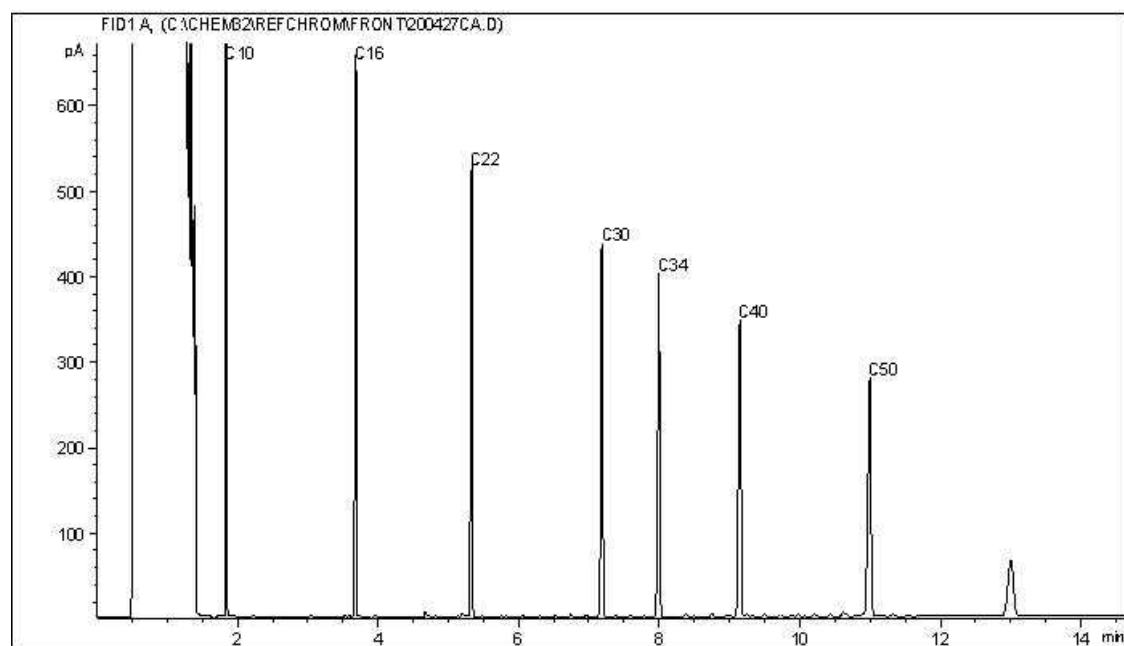
MCAL - SEE ACTR

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



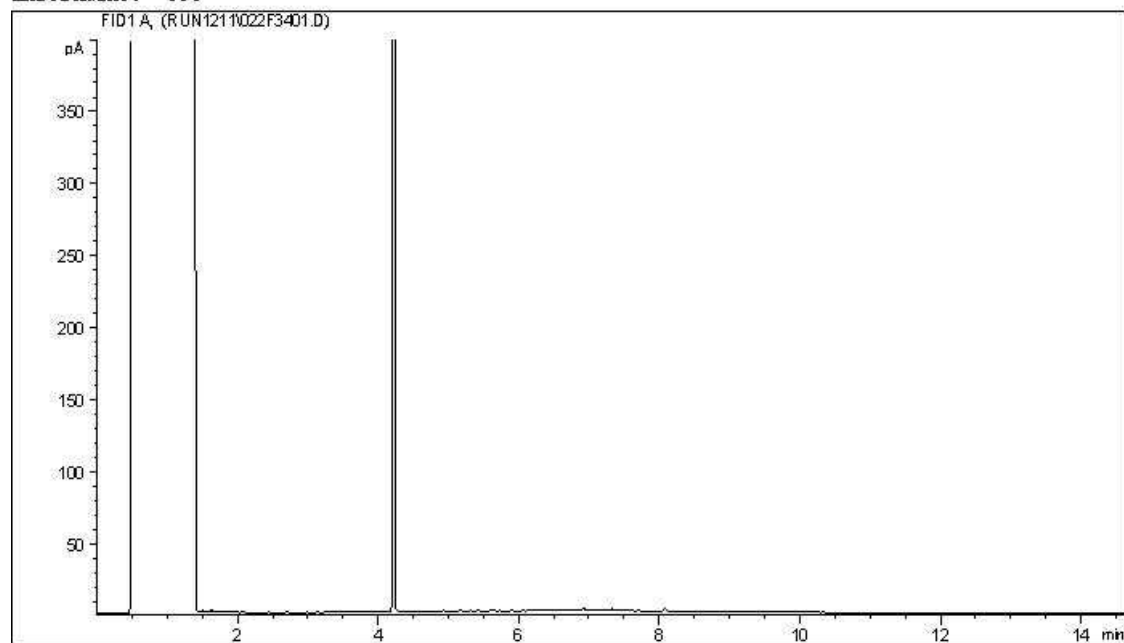
TYPICAL PRODUCT CARBON NUMBER RANGES

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

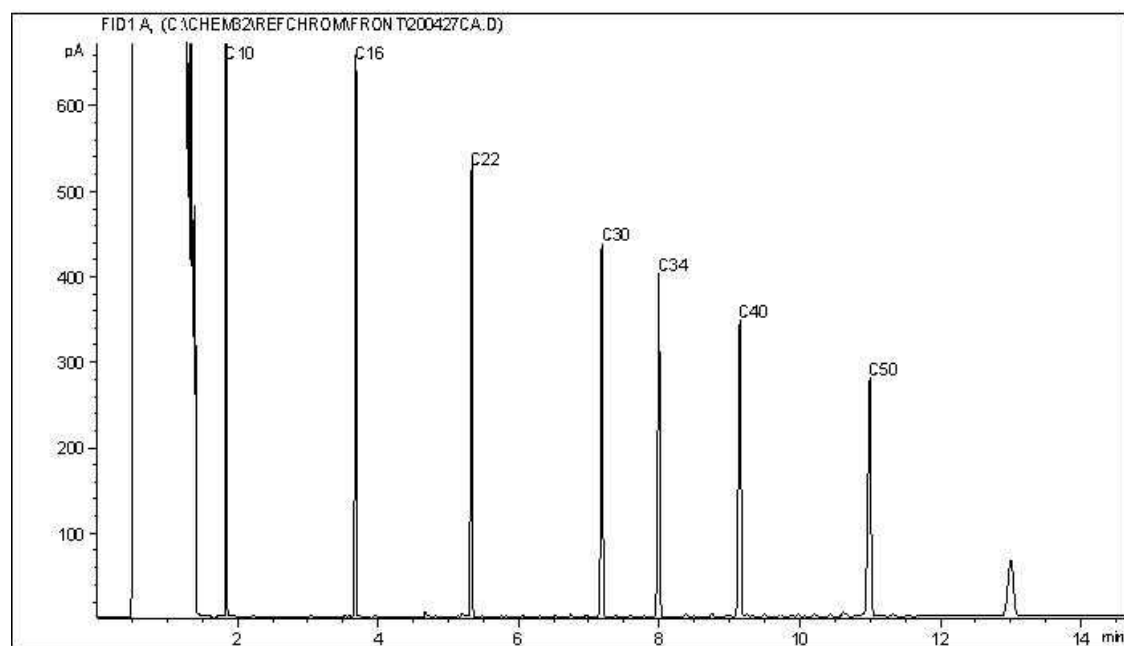
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



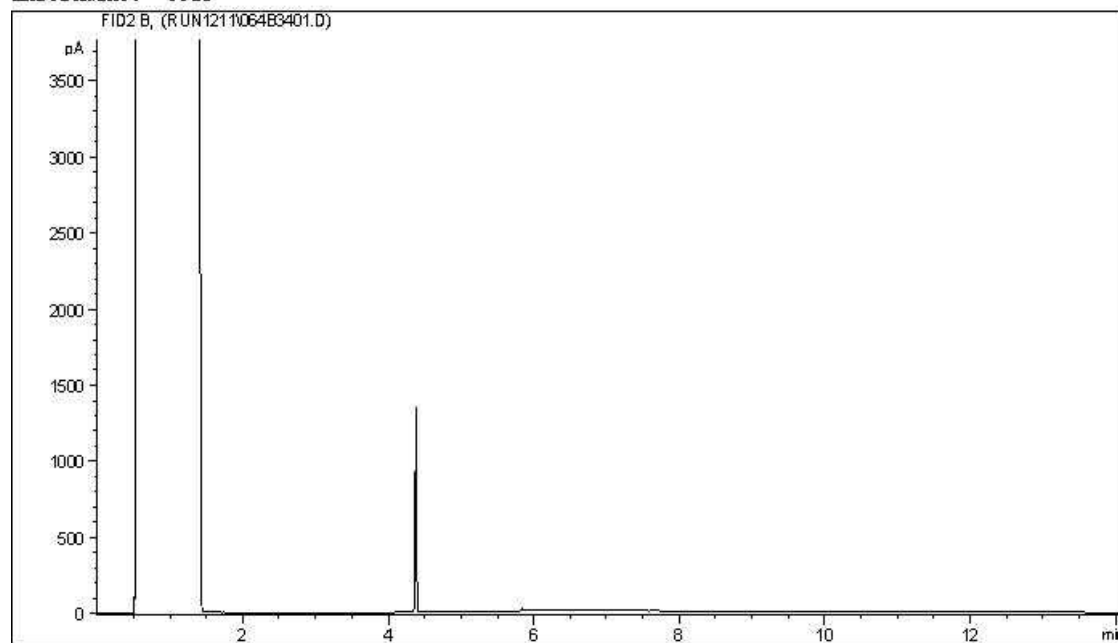
TYPICAL PRODUCT CARBON NUMBER RANGES

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

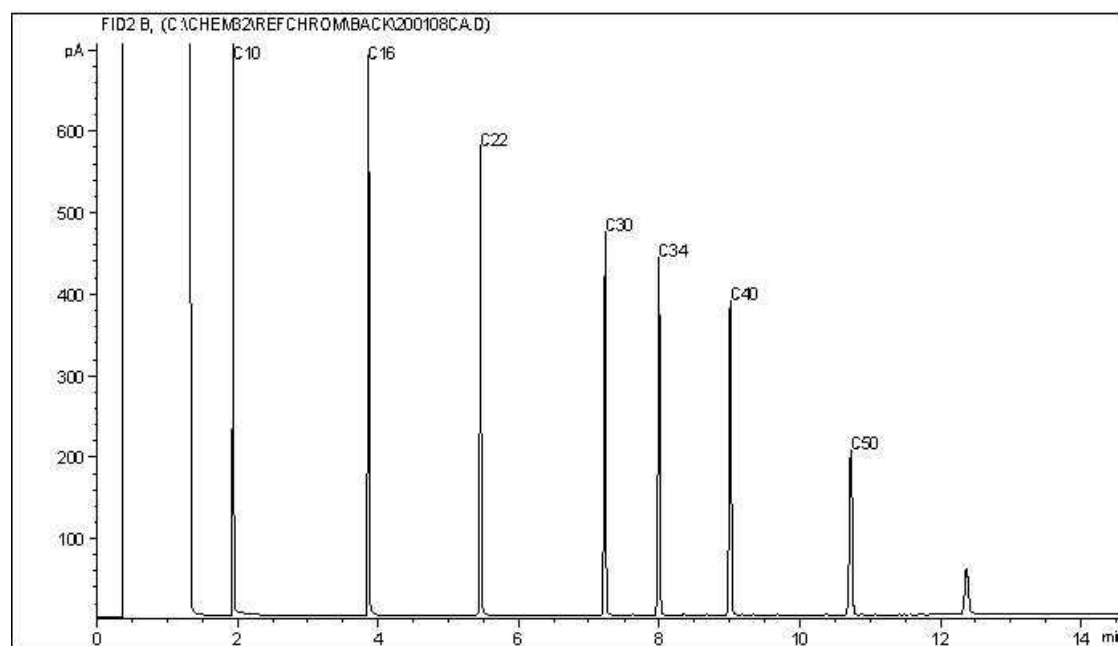
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



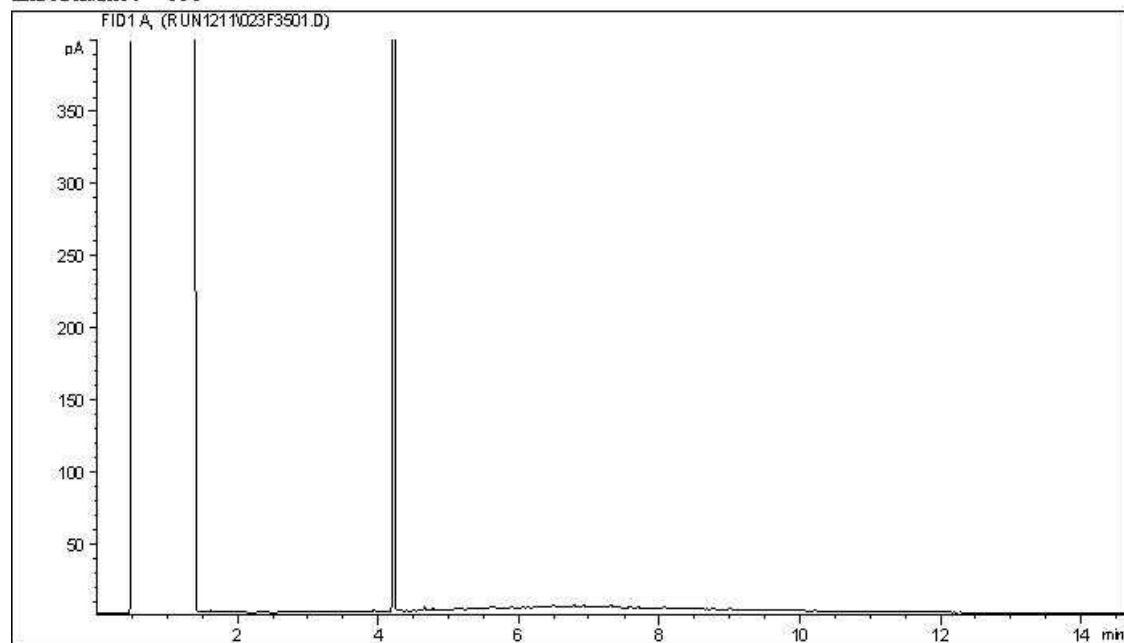
TYPICAL PRODUCT CARBON NUMBER RANGES

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

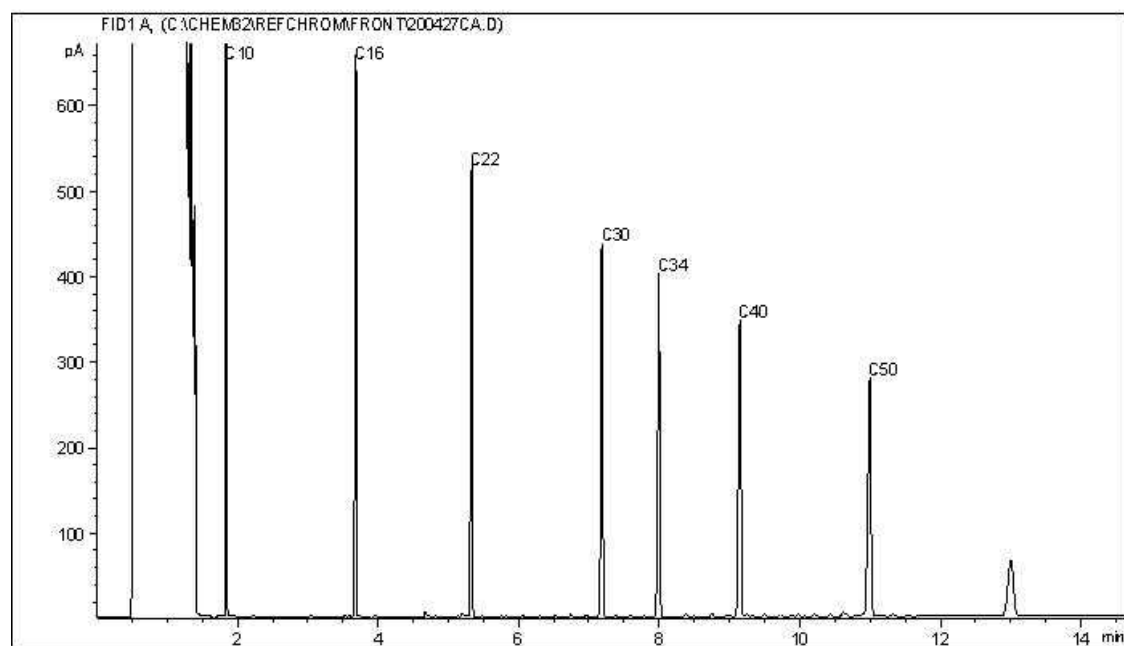
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



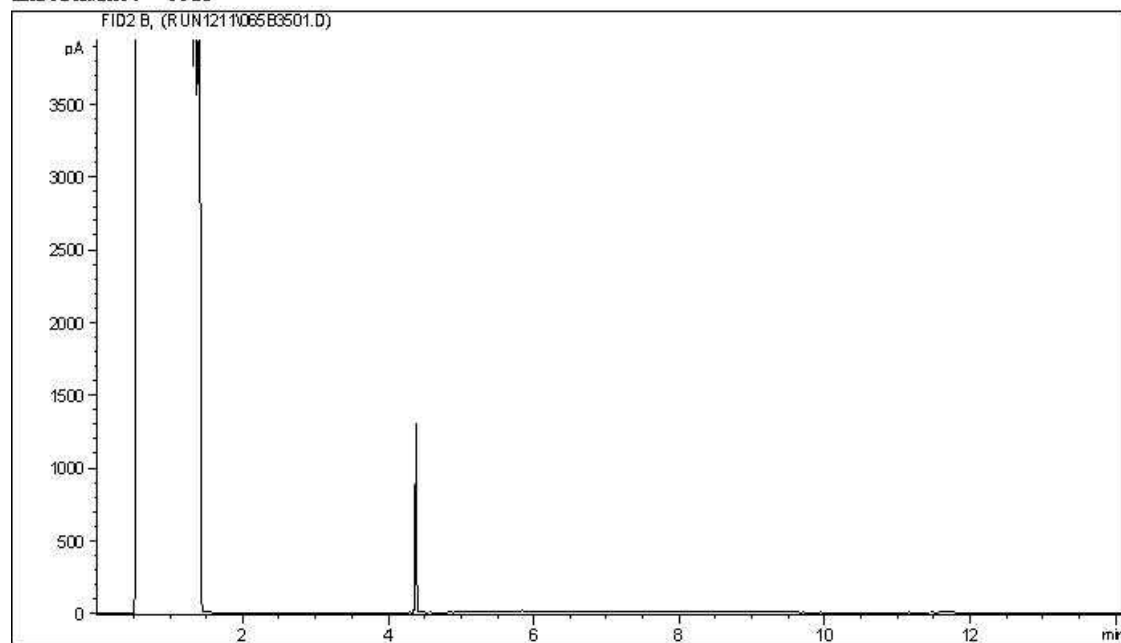
TYPICAL PRODUCT CARBON NUMBER RANGES

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

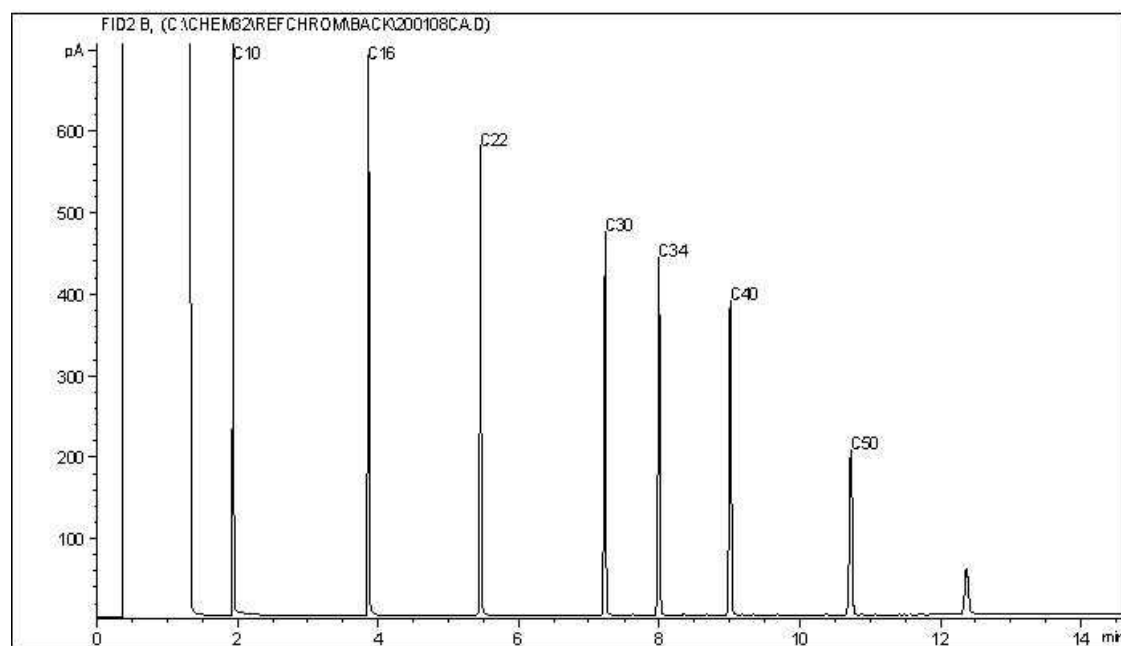
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



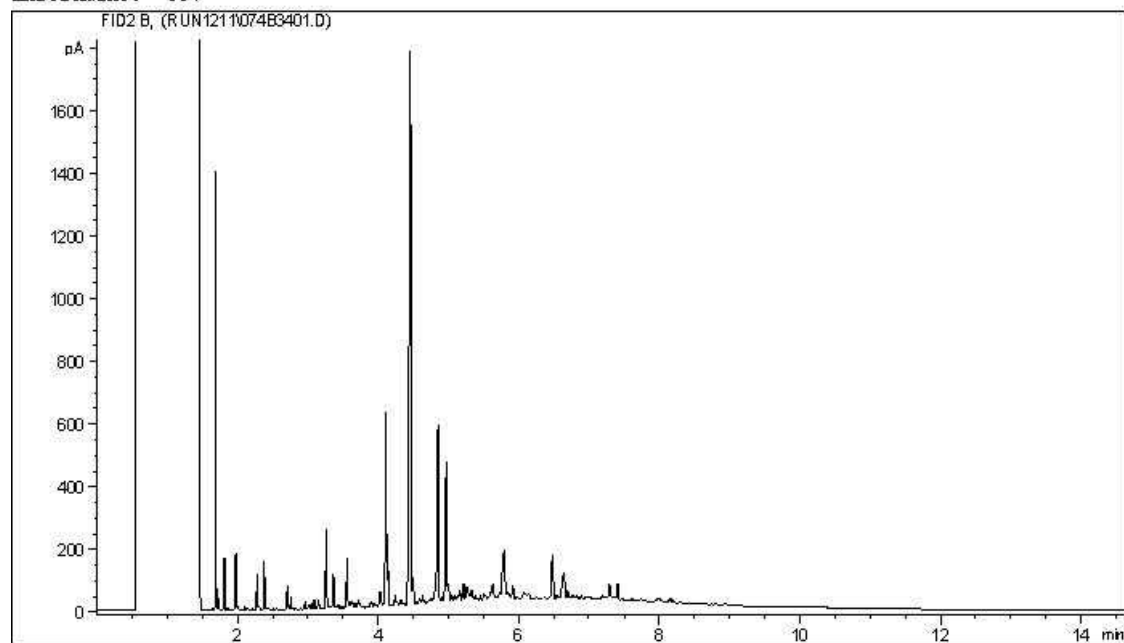
TYPICAL PRODUCT CARBON NUMBER RANGES

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

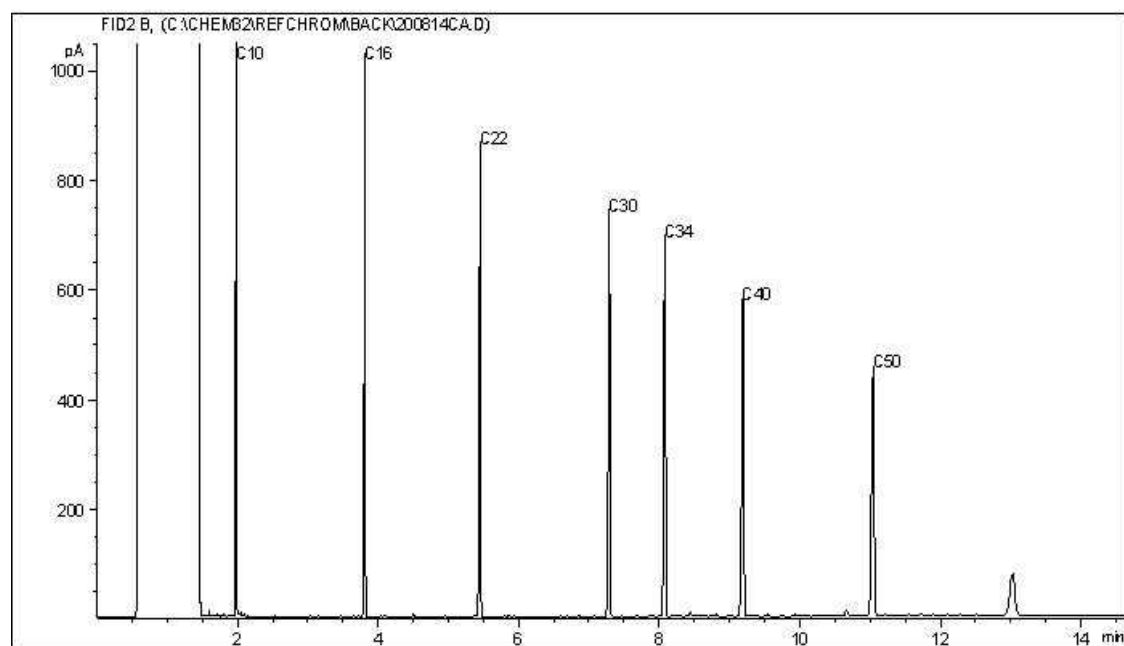
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



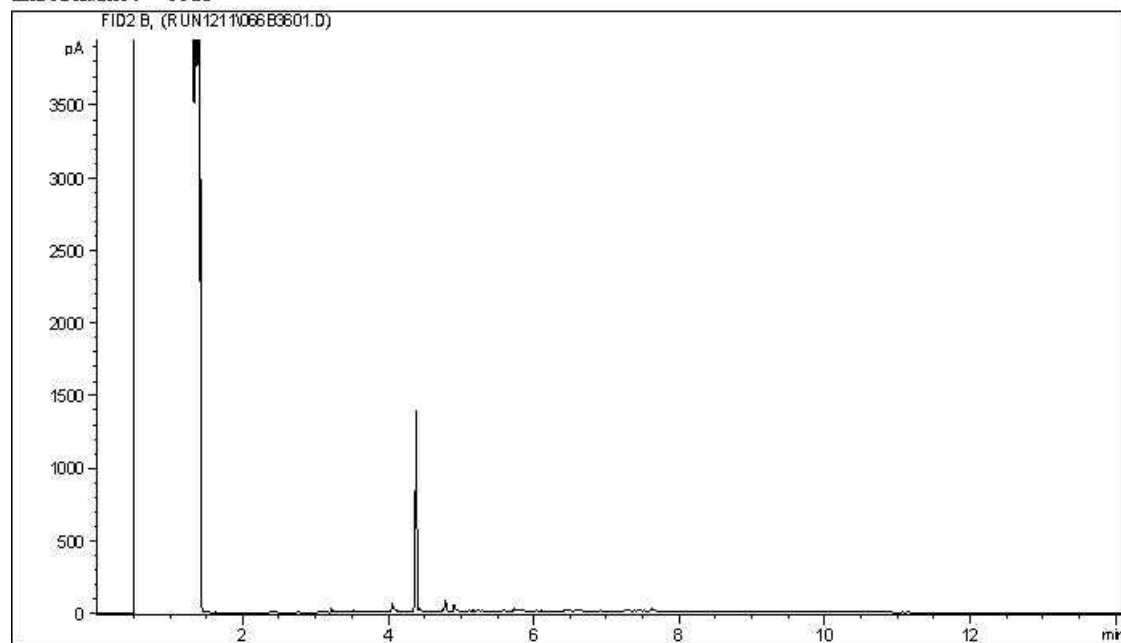
TYPICAL PRODUCT CARBON NUMBER RANGES

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

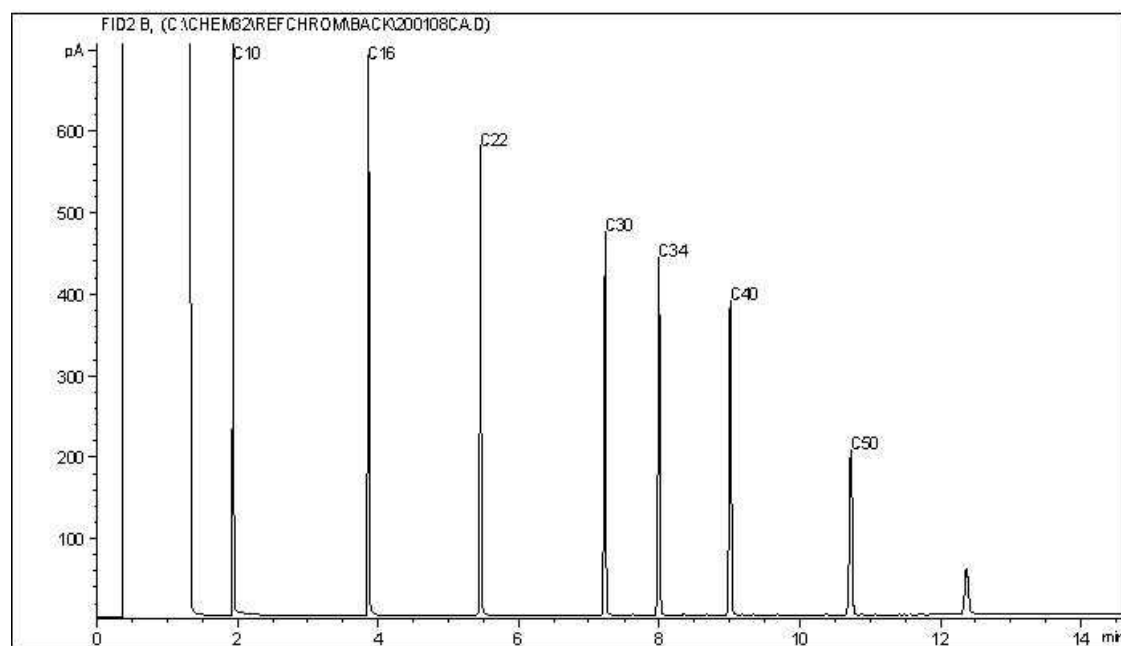
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



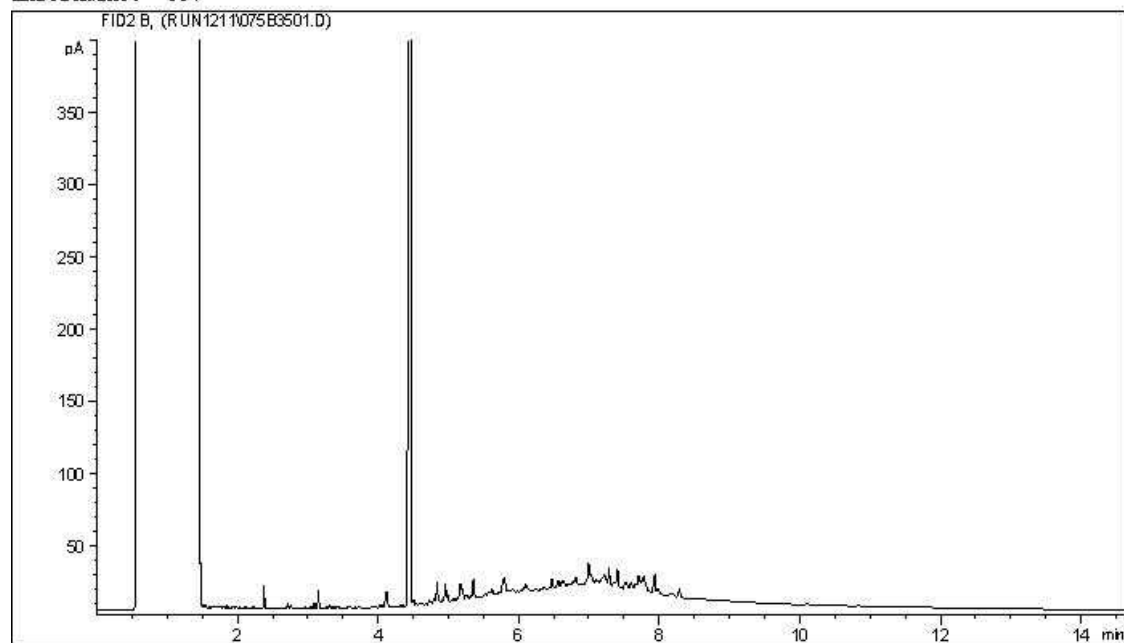
TYPICAL PRODUCT CARBON NUMBER RANGES

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

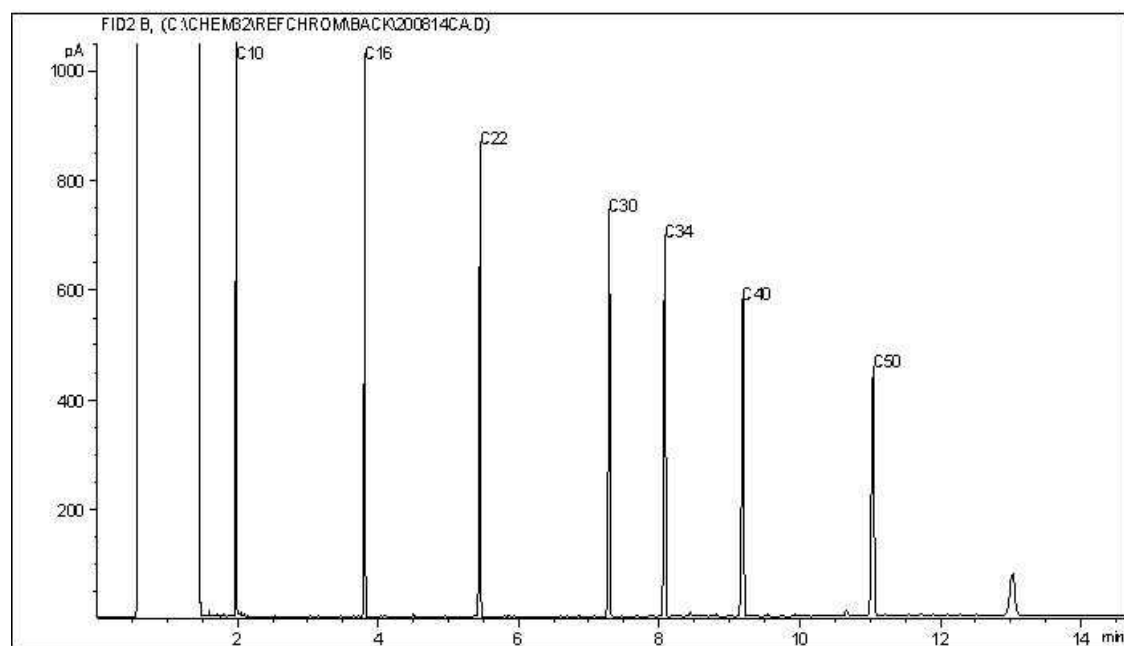
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



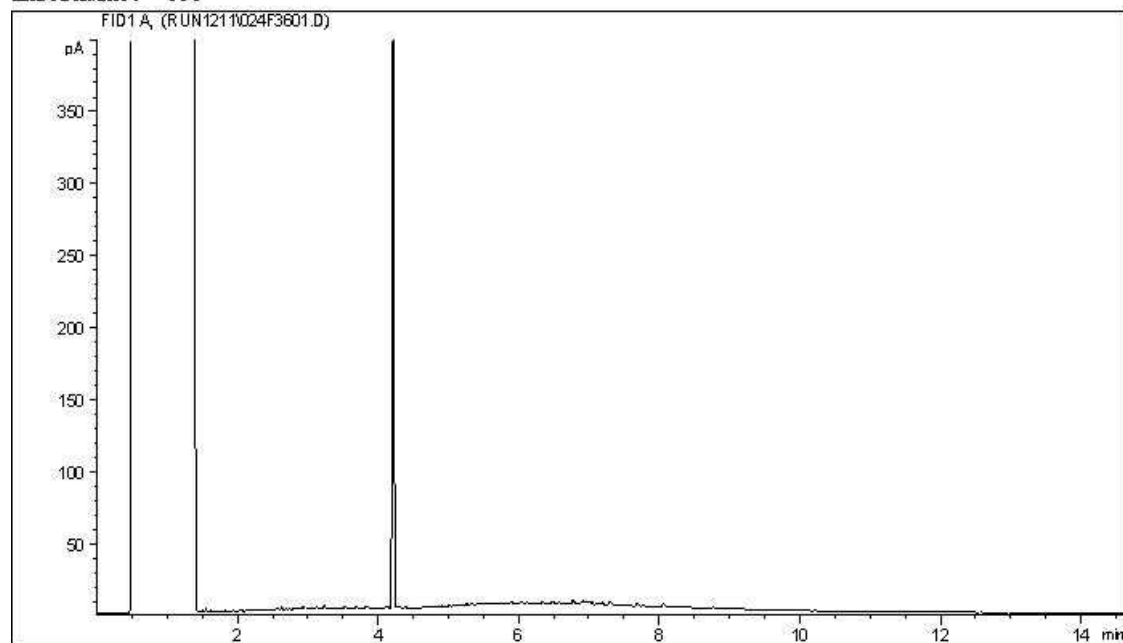
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

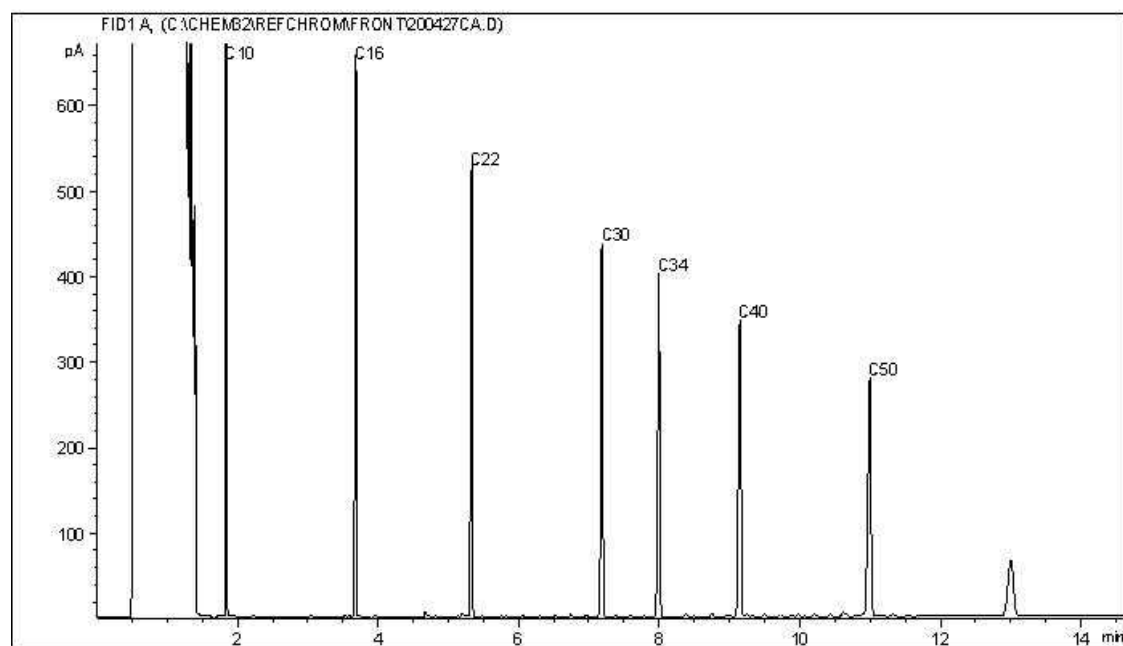
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



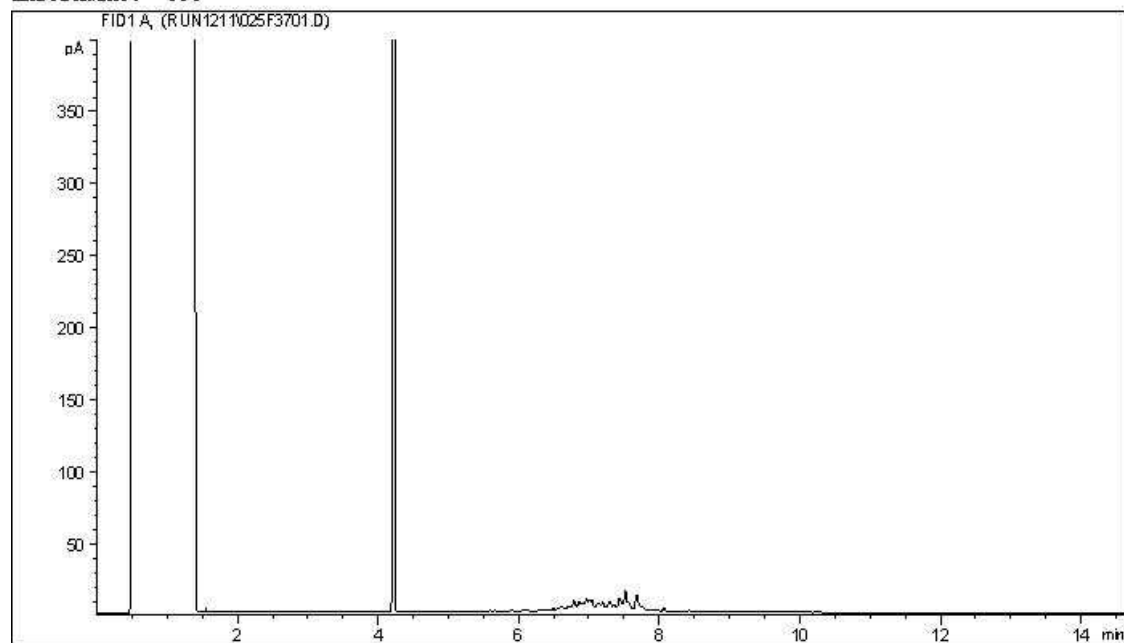
TYPICAL PRODUCT CARBON NUMBER RANGES

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

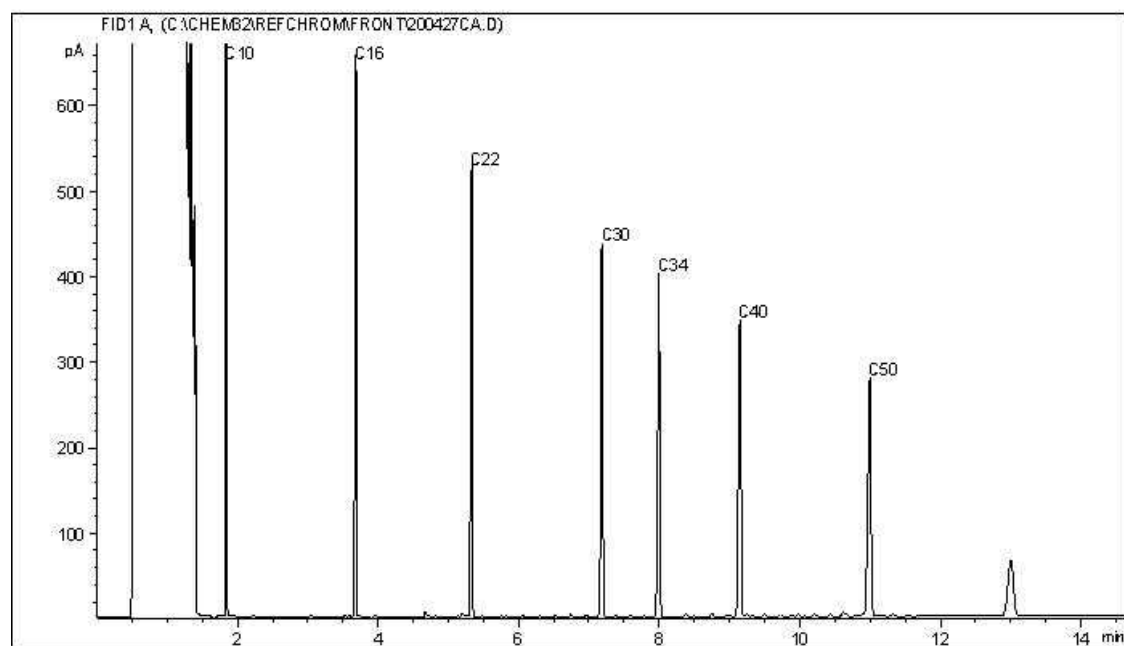
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



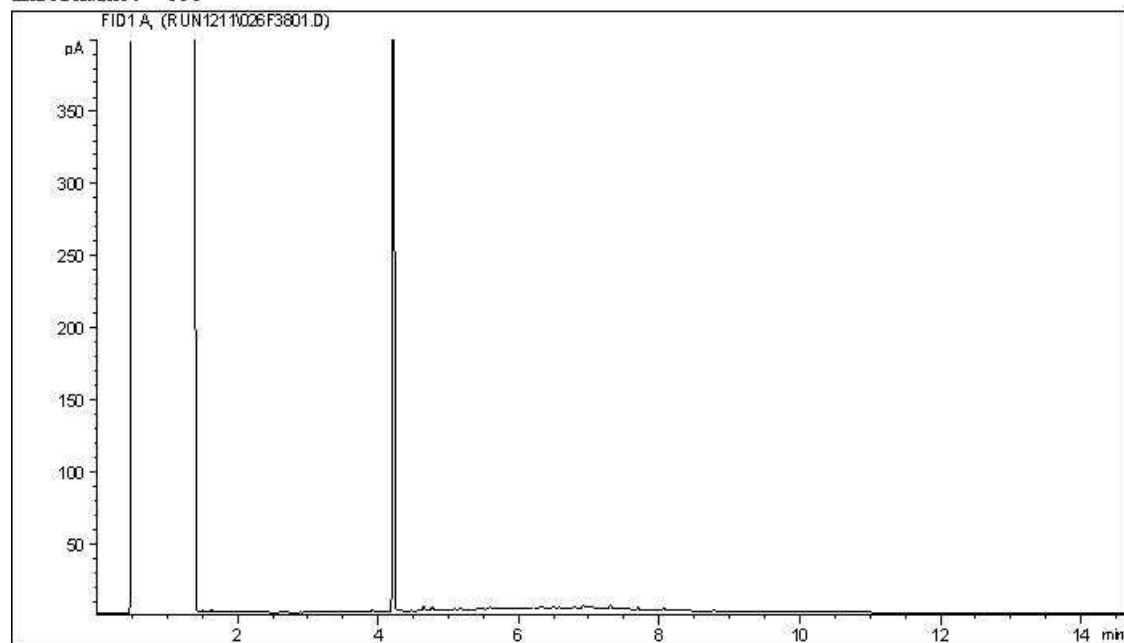
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

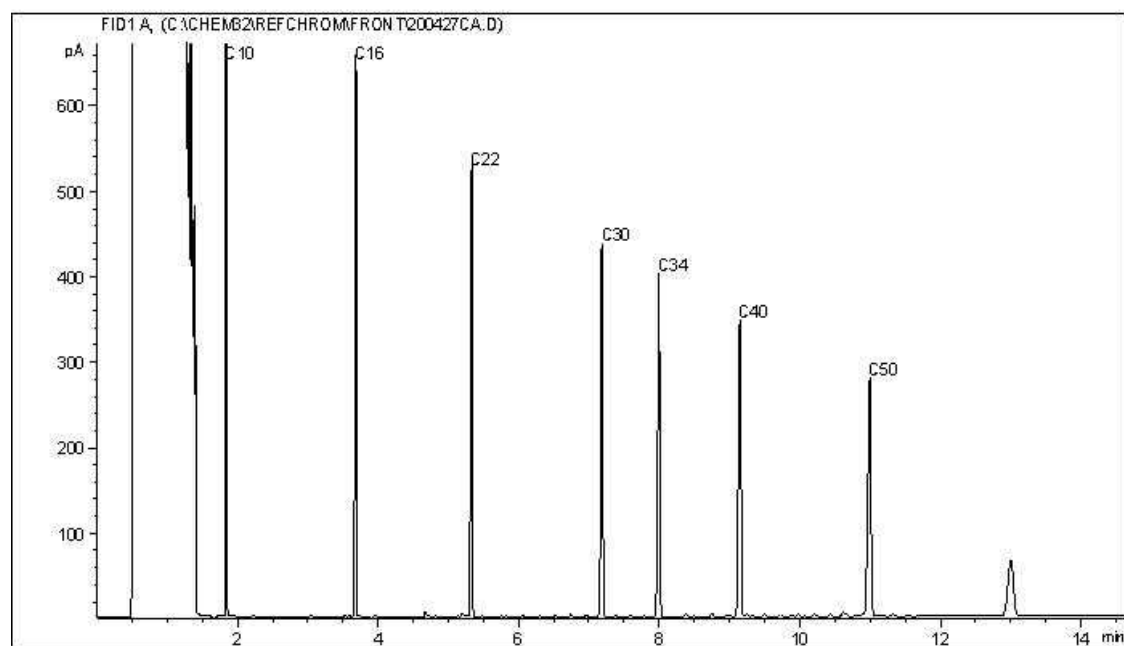
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



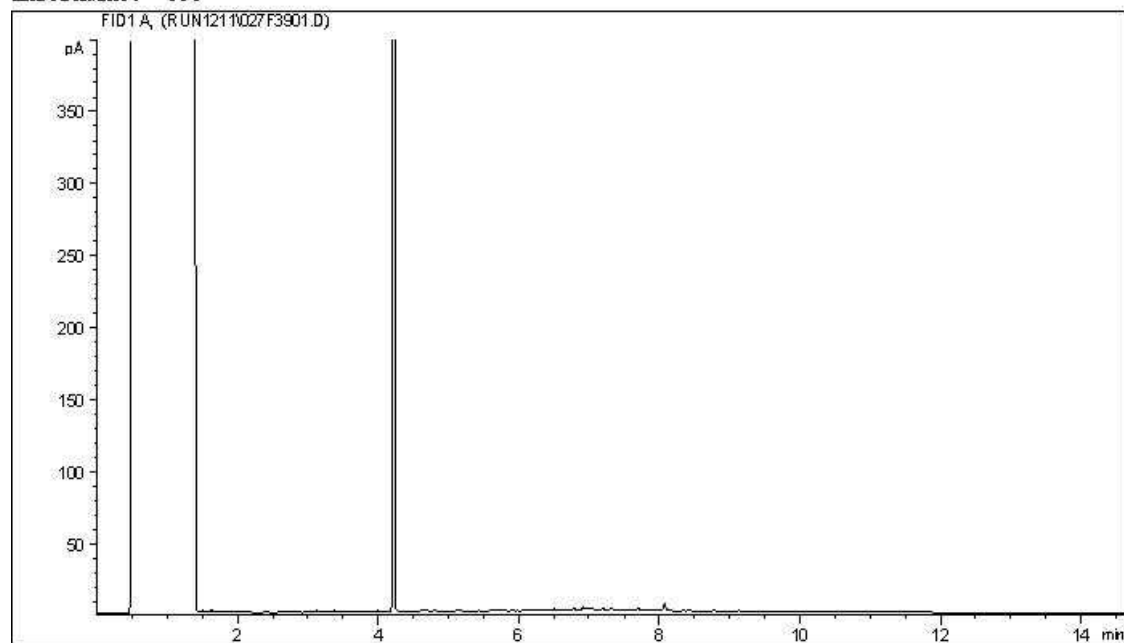
TYPICAL PRODUCT CARBON NUMBER RANGES

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

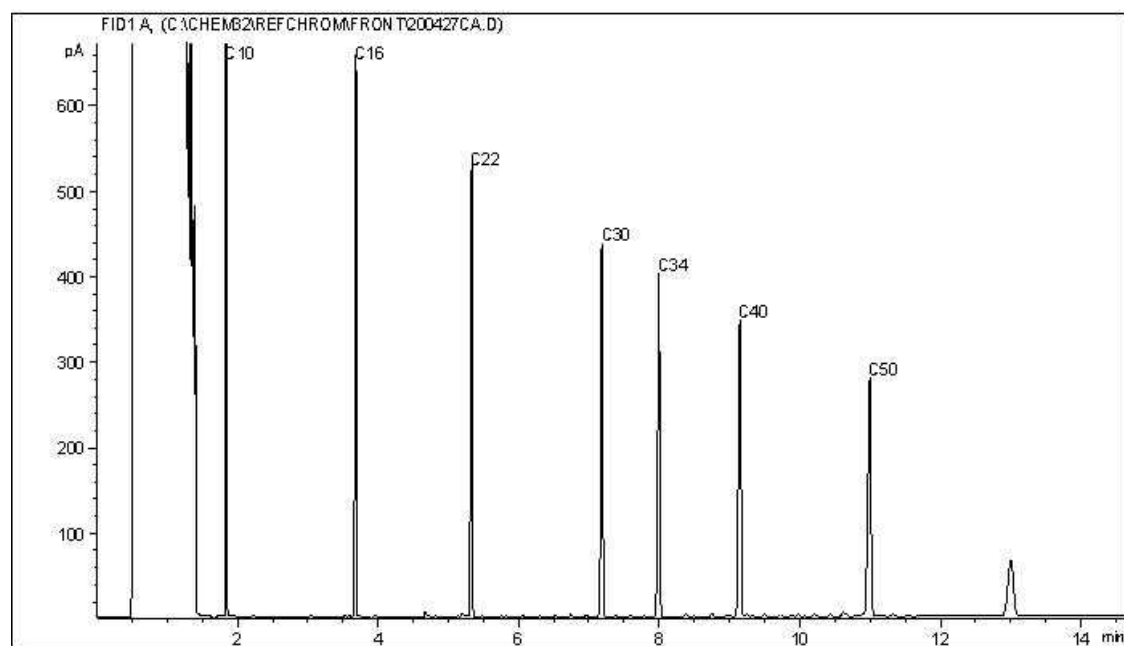
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



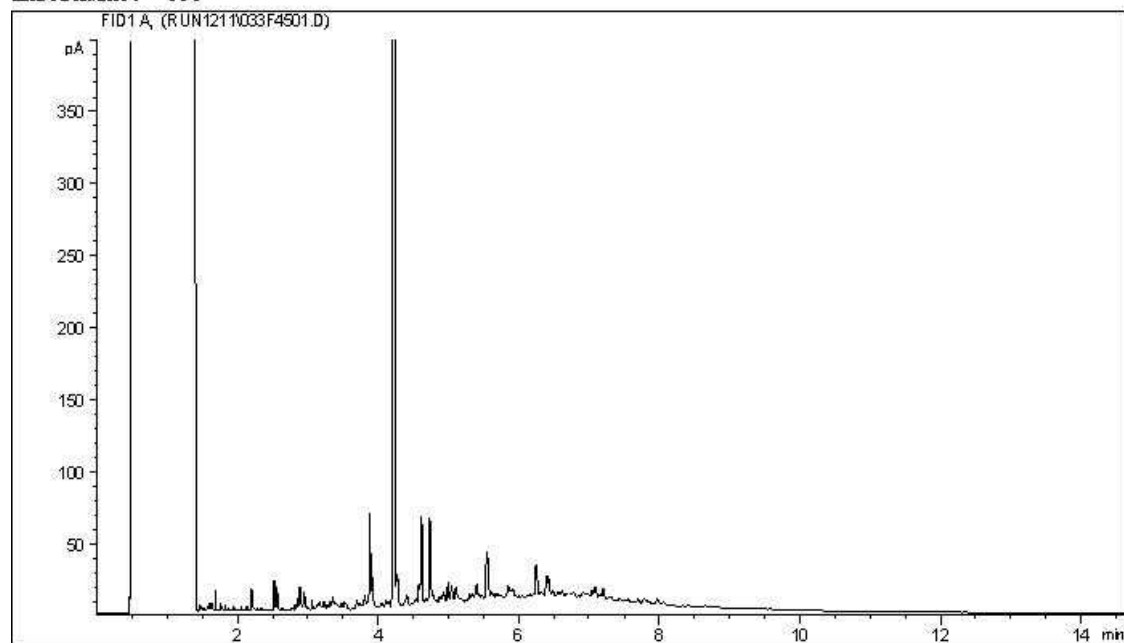
TYPICAL PRODUCT CARBON NUMBER RANGES

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

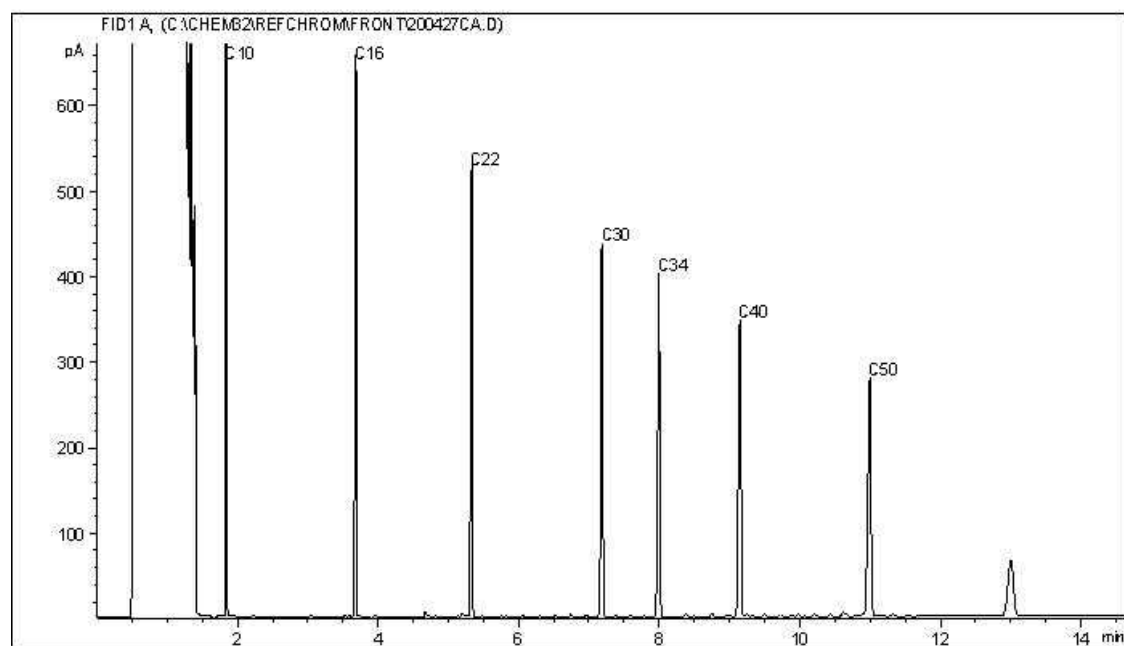
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



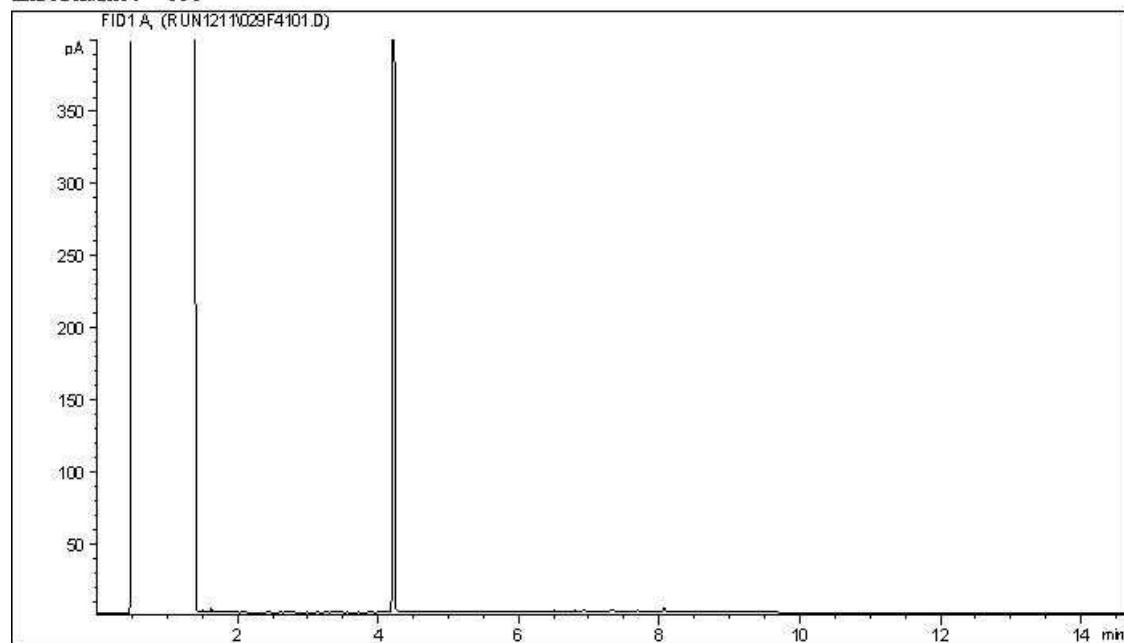
TYPICAL PRODUCT CARBON NUMBER RANGES

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

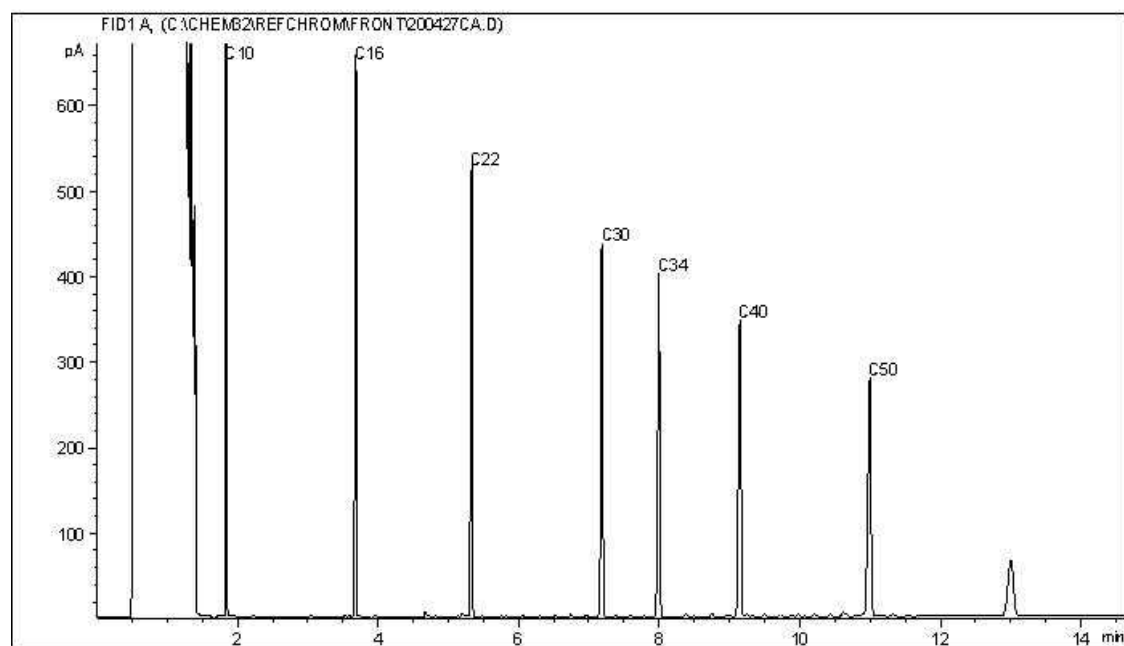
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



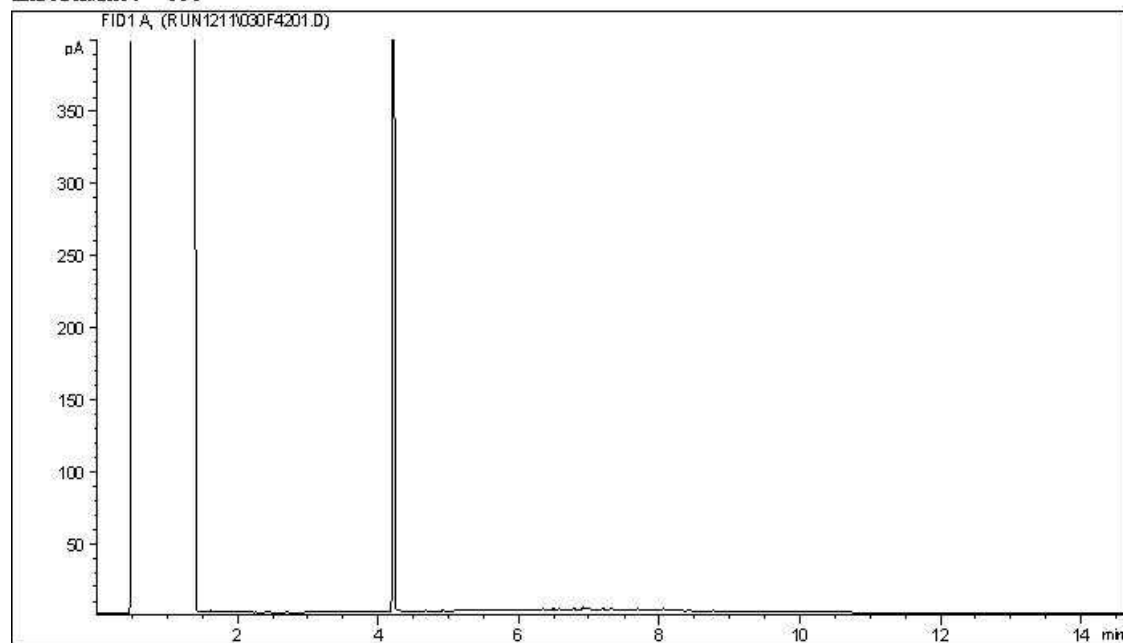
TYPICAL PRODUCT CARBON NUMBER RANGES

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

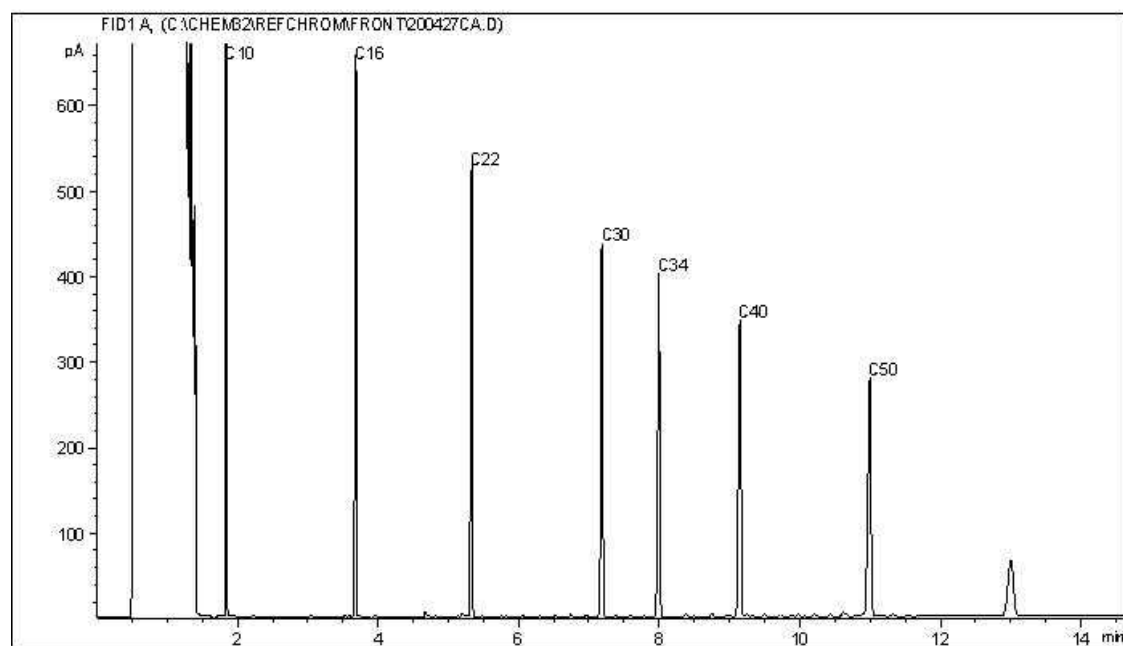
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



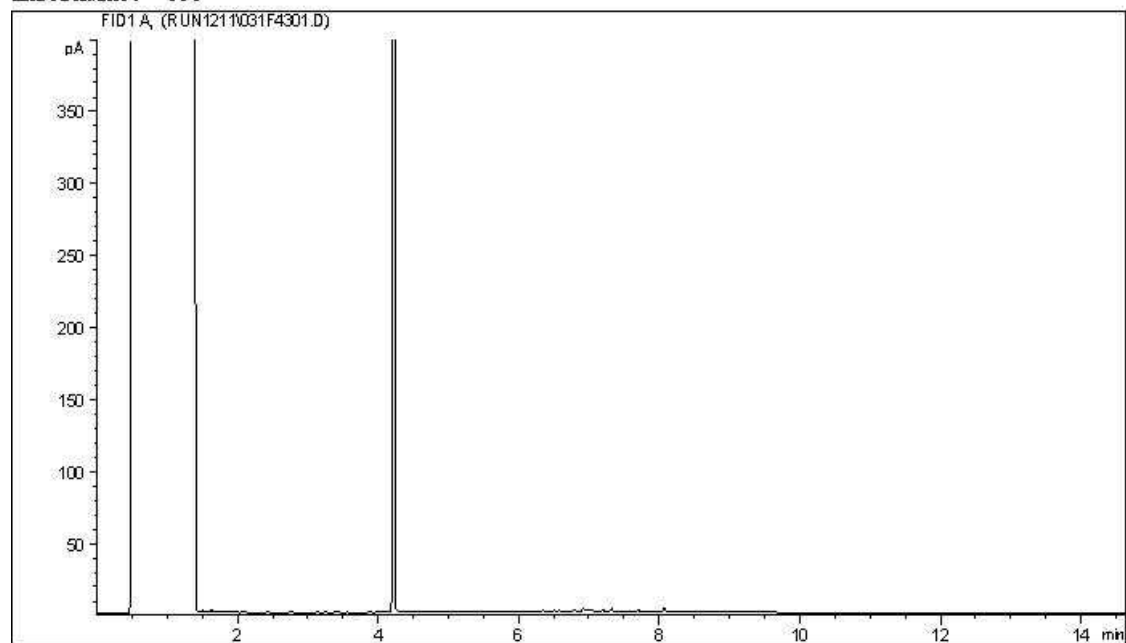
TYPICAL PRODUCT CARBON NUMBER RANGES

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

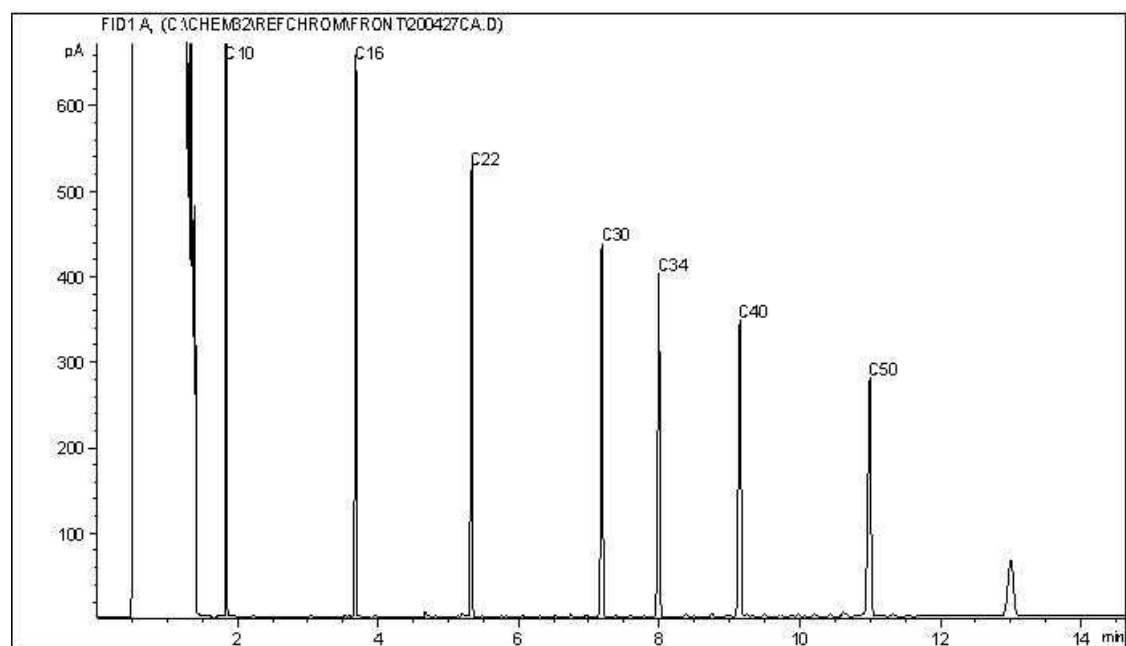
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



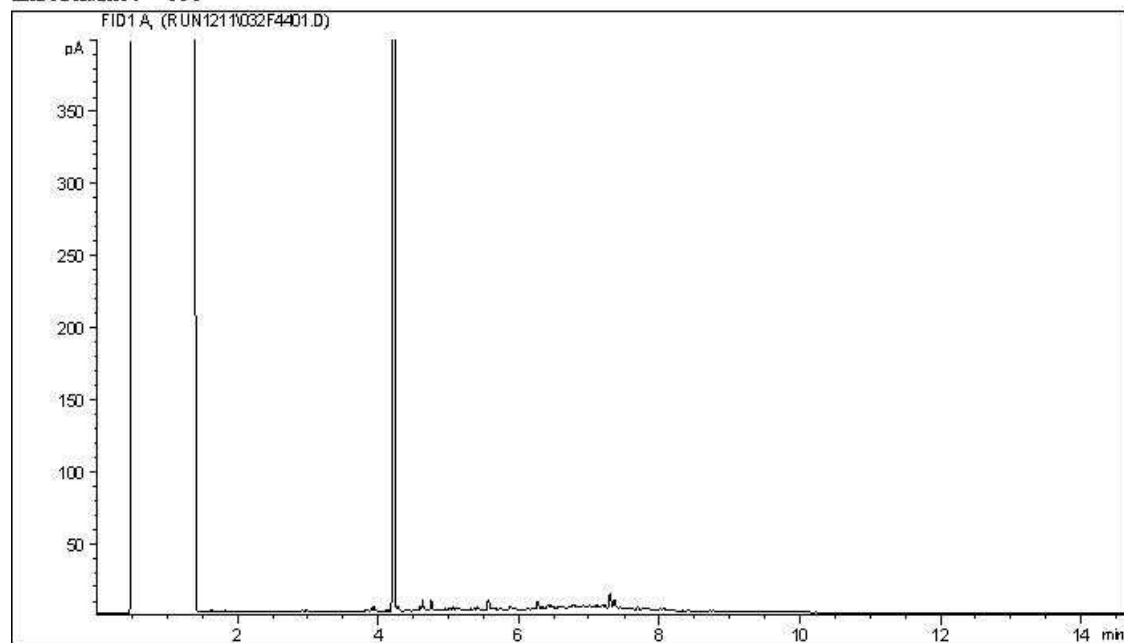
TYPICAL PRODUCT CARBON NUMBER RANGES

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

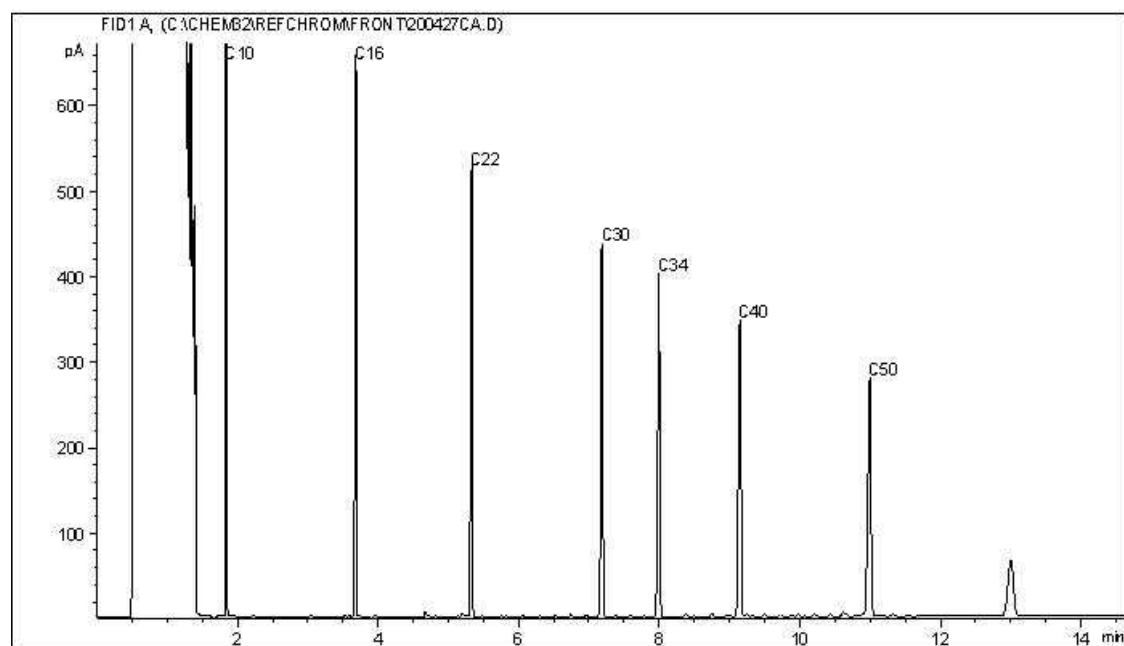
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



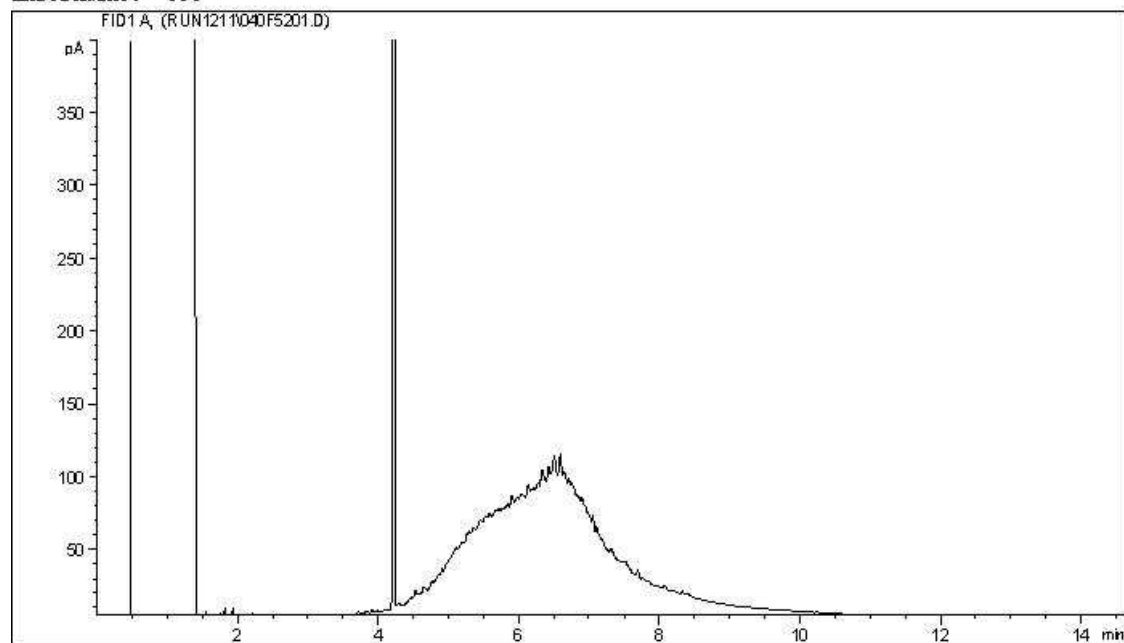
TYPICAL PRODUCT CARBON NUMBER RANGES

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

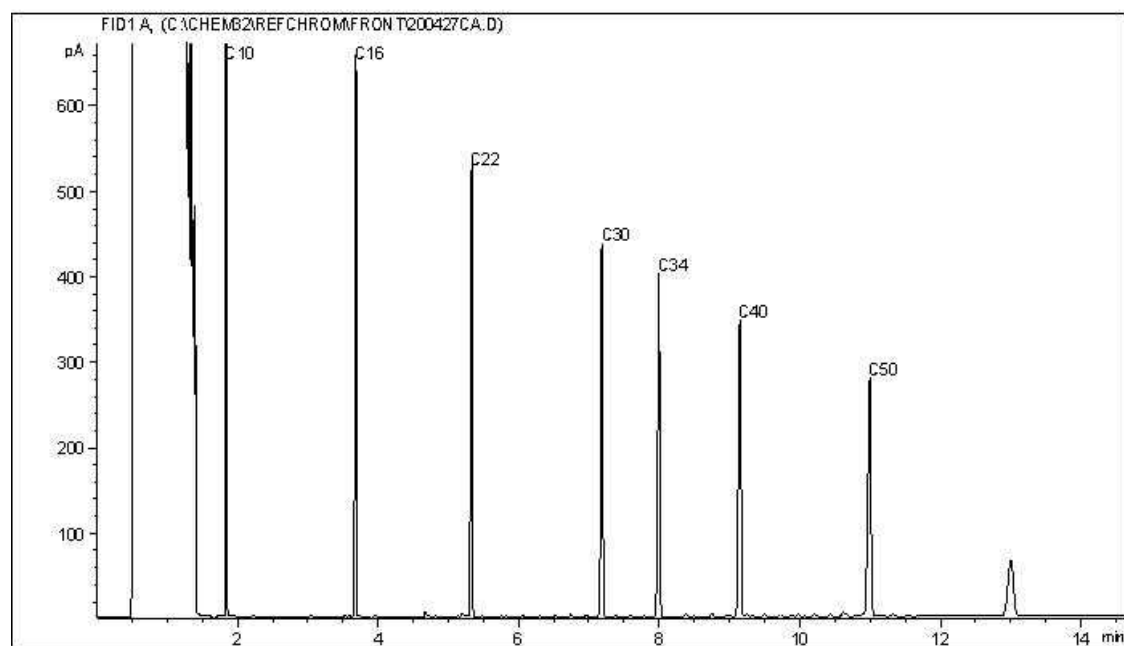
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



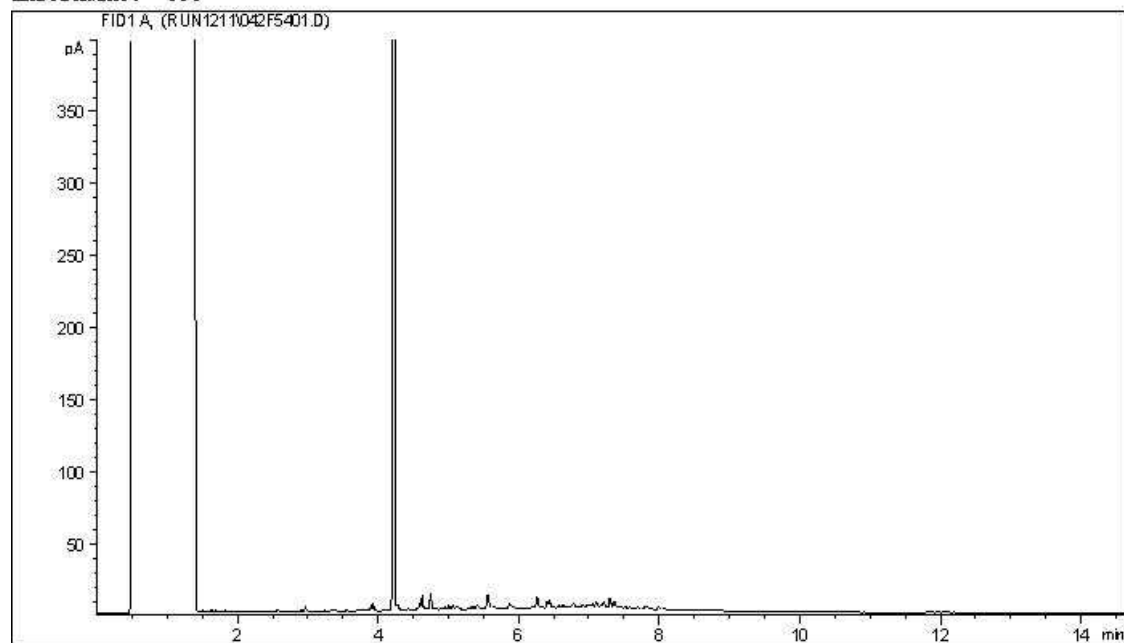
TYPICAL PRODUCT CARBON NUMBER RANGES

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

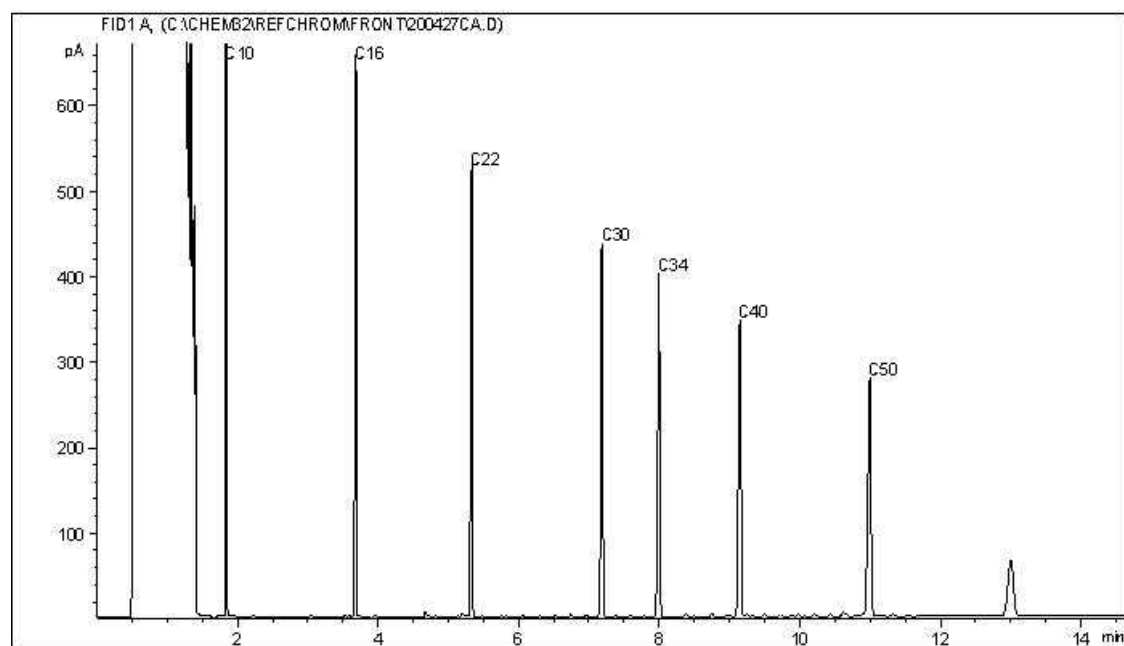
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



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+

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



Your Project #: 20-3725
Your C.O.C. #: C#627236-01-01

Attention: Mitchell Traa

DILLON CONSULTING LTD.
1558 Willson Place
Winnipeg, MB
CANADA R3T 0Y4

Report Date: 2020/12/29

Report #: R2972057

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C092803

Received: 2020/12/16, 15:07

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH (1)	3	N/A	2020/12/18	AB SOP-00005	SM 23 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	7	N/A	2020/12/18	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	7	N/A	2020/12/19		Auto Calc
Cadmium - low level CCME - Dissolved (1)	6	N/A	2020/12/19		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	3	N/A	2020/12/18	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Conductivity @25C (1)	3	N/A	2020/12/18	AB SOP-00005	SM 23 2510 B m
CCME Hydrocarbons (F2-F4 in water) (1, 3)	7	2020/12/18	2020/12/18	AB SOP-00037	CCME PHC-CWS m
Hardness (1)	1	N/A	2020/12/18		Auto Calc
Hardness (1)	2	N/A	2020/12/19		Auto Calc
Mercury (Dissolved) by CV (1)	5	2020/12/21	2020/12/21	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	1	N/A	2020/12/18	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Dissolved (1, 4)	5	N/A	2020/12/19	AB SOP-00042	EPA 6010d R5 m
Elements by ICP-Dissolved-Lab Filtered (1, 4)	1	N/A	2020/12/18	AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	6	N/A	2020/12/18	AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	1	N/A	2020/12/18		Auto Calc
Ion Balance (1)	2	N/A	2020/12/19		Auto Calc
Sum of cations, anions (1)	1	N/A	2020/12/18		Auto Calc
Sum of cations, anions (1)	2	N/A	2020/12/19		Auto Calc
Nitrate and Nitrite (1)	3	N/A	2020/12/19		Auto Calc
Nitrate + Nitrite-N (calculated) (1)	3	N/A	2020/12/19		Auto Calc
Nitrogen (Nitrite - Nitrate) by IC (1)	3	N/A	2020/12/17	AB SOP-00023	SM 23 4110 B m
Benzo[a]pyrene Equivalency (1, 5)	5	N/A	2020/12/19		Auto Calc
PAH in Water by GC/MS (1)	5	2020/12/18	2020/12/19	AB SOP-00037 / AB SOP-00003	EPA 3510C/8270E m
pH @25°C (1, 6)	3	N/A	2020/12/18	AB SOP-00005	SM 23 4500-H+B m
Total Dissolved Solids (Calculated) (1)	1	N/A	2020/12/18		Auto Calc
Total Dissolved Solids (Calculated) (1)	1	N/A	2020/12/19		Auto Calc
Total Dissolved Solids (Calculated) (1)	1	N/A	2020/12/21		Auto Calc
GC/MS Analysis of OP Pesticides (2)	2	2020/12/24	2020/12/26	CAM SOP-00301	EPA 8270 m

Remarks:



Your Project #: 20-3725
Your C.O.C. #: C#627236-01-01

Attention: Mitchell Traa

DILLON CONSULTING LTD.
1558 Willson Place
Winnipeg, MB
CANADA R3T 0Y4

Report Date: 2020/12/29

Report #: R2972057

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C092803

Received: 2020/12/16, 15:07

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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

(1) This test was performed by BV Labs Calgary Environmental

(2) This test was performed by BV Labs Ontario (from Winnipeg)

(3) Silica gel clean up employed.

(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(5) 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.

(6) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.

Encryption Key

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

Janelle Kochan, B.Sc., Key Account Specialist

Email: Janelle.KOCHAN@bvlabs.com

Phone# (204)259-0231

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This report has been generated and distributed using a secure automated process.

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BUREAU
VERITASBV Labs Job #: C092803
Report Date: 2020/12/29DILLON CONSULTING LTD.
Client Project #: 20-3725**RESULTS OF CHEMICAL ANALYSES OF WATER**

BV Labs ID		ZB1171			ZB1172			ZB1173		
Sampling Date		2020/12/16 12:30			2020/12/16 12:50			2020/12/16 13:10		
COC Number		C#627236-01-01			C#627236-01-01			C#627236-01-01		
	UNITS	MW20-01	RDL	QC Batch	MW20-02	RDL	QC Batch	MW20-03	RDL	QC Batch

Calculated Parameters

Anion Sum	meq/L	30	N/A	A116279				71	N/A	A116279
Cation Sum	meq/L	37	N/A	A116279				75	N/A	A116279
Hardness (CaCO ₃)	mg/L	1600	0.50	A115988				2800	0.50	A115988
Ion Balance (% Difference)	%	9.5	N/A	A115989				2.3	N/A	A115989
Dissolved Nitrate (NO ₃)	mg/L	0.15	0.044	A115990				0.048	0.044	A115990
Nitrate plus Nitrite (N)	mg/L	0.034	0.014	A115991				<0.014	0.014	A115991
Dissolved Nitrite (NO ₂)	mg/L	<0.033	0.033	A115990				<0.033	0.033	A115990
Calculated Total Dissolved Solids	mg/L	1600	10	A116282				3700	10	A116282

Misc. Inorganics

Conductivity	uS/cm	2400	2.0	A117788				5600	2.0	A117963
pH	pH	7.64	N/A	A117787				7.66	N/A	A117959

Low Level Elements

Dissolved Cadmium (Cd)	ug/L				0.23	0.020	A115716	0.11	0.020	A115716
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Anions

Alkalinity (PP as CaCO ₃)	mg/L	<1.0	1.0	A117764				<1.0	1.0	A117952
Alkalinity (Total as CaCO ₃)	mg/L	1000	1.0	A117764				1800	1.0	A117952
Bicarbonate (HCO ₃)	mg/L	1200	1.0	A117764				2200	1.0	A117952
Carbonate (CO ₃)	mg/L	<1.0	1.0	A117764				<1.0	1.0	A117952
Hydroxide (OH)	mg/L	<1.0	1.0	A117764				<1.0	1.0	A117952
Dissolved Chloride (Cl)	mg/L	170	1.0	A117739				700 (1)	5.0	A117755
Dissolved Sulphate (SO ₄)	mg/L	240 (1)	2.0	A117739				720 (1)	5.0	A117755

Nutrients

Dissolved Nitrite (N)	mg/L	<0.010	0.010	A117453				<0.010	0.010	A117453
Dissolved Nitrate (N)	mg/L	0.034	0.010	A117453				0.011	0.010	A117453

RDL = Reportable Detection Limit

N/A = Not Applicable

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

BUREAU
VERITASBV Labs Job #: C092803
Report Date: 2020/12/29DILLON CONSULTING LTD.
Client Project #: 20-3725**RESULTS OF CHEMICAL ANALYSES OF WATER**

BV Labs ID		ZB1173			ZB1175			ZB1176		
Sampling Date		2020/12/16 13:10			2020/12/16 12:15			2020/12/16 13:00		
COC Number		C#627236-01-01			C#627236-01-01			C#627236-01-01		
	UNITS	MW20-03 Lab-Dup	RDL	QC Batch	MW20-05	RDL	QC Batch	MW20-06	RDL	QC Batch

Calculated Parameters

Anion Sum	meq/L							48	N/A	A115731
Cation Sum	meq/L							41	N/A	A115731
Hardness (CaCO ₃)	mg/L							1700	0.50	A115988
Ion Balance (% Difference)	%							8.4	N/A	A115989
Dissolved Nitrate (NO ₃)	mg/L							3.1	0.044	A115990
Nitrate plus Nitrite (N)	mg/L							0.72	0.014	A115991
Dissolved Nitrite (NO ₂)	mg/L							0.077	0.033	A115990
Calculated Total Dissolved Solids	mg/L							2600	10	A115737

Misc. Inorganics

Conductivity	uS/cm							3400	2.0	A117788
pH	pH							7.67	N/A	A117787

Low Level Elements

Dissolved Cadmium (Cd)	ug/L				0.18	0.020	A115716	0.11	0.020	A115716
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Anions

Alkalinity (PP as CaCO ₃)	mg/L							<1.0	1.0	A117764
Alkalinity (Total as CaCO ₃)	mg/L							880	1.0	A117764
Bicarbonate (HCO ₃)	mg/L							1100	1.0	A117764
Carbonate (CO ₃)	mg/L							<1.0	1.0	A117764
Hydroxide (OH)	mg/L							<1.0	1.0	A117764
Dissolved Chloride (Cl)	mg/L							98	1.0	A117755
Dissolved Sulphate (SO ₄)	mg/L							1300 (1)	10	A117755

Nutrients

Dissolved Nitrite (N)	mg/L	<0.010	0.010	A117453				0.023	0.010	A117453
Dissolved Nitrate (N)	mg/L	<0.010	0.010	A117453				0.69	0.010	A117453

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

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



BUREAU
VERITAS

BV Labs Job #: C092803
Report Date: 2020/12/29

DILLON CONSULTING LTD.
Client Project #: 20-3725

RESULTS OF CHEMICAL ANALYSES OF WATER

BV Labs ID		ZB1177	ZB1178		
Sampling Date		2020/12/16 13:30	2020/12/16		
COC Number		C#627236-01-01	C#627236-01-01		
	UNITS	MW20-07	FD-1	RDL	QC Batch

Low Level Elements					
Dissolved Cadmium (Cd)	ug/L	0.79	0.16	0.020	A115716
RDL = Reportable Detection Limit					

BUREAU
VERITASBV Labs Job #: C092803
Report Date: 2020/12/29DILLON CONSULTING LTD.
Client Project #: 20-3725**PETROLEUM HYDROCARBONS (CCME)**

BV Labs ID		ZB1172	ZB1173	ZB1174	ZB1175	ZB1176		
Sampling Date		2020/12/16 12:50	2020/12/16 13:10	2020/12/16 11:45	2020/12/16 12:15	2020/12/16 13:00		
COC Number		C#627236-01-01	C#627236-01-01	C#627236-01-01	C#627236-01-01	C#627236-01-01		
	UNITS	MW20-02	MW20-03	MW20-04	MW20-05	MW20-06	RDL	QC Batch

Ext. Pet. Hydrocarbon

F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A117044
F3 (C16-C34 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A117044
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A117044

Surrogate Recovery (%)

O-TERPHENYL (sur.)	%	99	99	100	99	110		A117044
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RDL = Reportable Detection Limit

BV Labs ID		ZB1177	ZB1178		
Sampling Date		2020/12/16 13:30	2020/12/16		
COC Number		C#627236-01-01	C#627236-01-01		
	UNITS	MW20-07	FD-1	RDL	QC Batch

Ext. Pet. Hydrocarbon

F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	A117044
F3 (C16-C34 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	A117044
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	0.20	A117044

Surrogate Recovery (%)

O-TERPHENYL (sur.)	%	100	103		A117044
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RDL = Reportable Detection Limit

BUREAU
VERITASBV Labs Job #: C092803
Report Date: 2020/12/29DILLON CONSULTING LTD.
Client Project #: 20-3725**PESTICIDES BY GC-MS (WATER)**

BV Labs ID		ZB1171	ZB1175		
Sampling Date		2020/12/16 12:30	2020/12/16 12:15		
COC Number		C#627236-01-01	C#627236-01-01		
	UNITS	MW20-01	MW20-05	RDL	QC Batch
Pesticides & Herbicides					
Aldicarb	ug/L	<5.0	<5.0	5.0	A124412
Atrazine	ug/L	<1.0	<1.0	1.0	A124412
Bendiocarb	ug/L	<2.0	<2.0	2.0	A124412
Carbaryl	ug/L	<5.0	<5.0	5.0	A124412
Carbofuran	ug/L	<5.0	<5.0	5.0	A124412
Chlorpyrifos (Dursban)	ug/L	<2.0	<2.0	2.0	A124412
Cyanazine (Bladex)	ug/L	<5.0	<5.0	5.0	A124412
Demeton-S	ug/L	<2.0	<2.0	2.0	A124412
Diazinon	ug/L	<2.0	<2.0	2.0	A124412
Dichlorvos	ug/L	<2.0	<2.0	2.0	A124412
Dimethoate	ug/L	<2.0	<2.0	2.0	A124412
Ethion	ug/L	<1.0	<1.0	1.0	A124412
Fenclorophos (Ronnell)	ug/L	<2.0	<2.0	2.0	A124412
Fenthion	ug/L	<1.0	<1.0	1.0	A124412
Fonofos	ug/L	<2.0	<2.0	2.0	A124412
Guthion (Azinphos-methyl)	ug/L	<1.0	<1.0	1.0	A124412
Malathion	ug/L	<2.0	<2.0	2.0	A124412
Metolachlor	ug/L	<5.0	<5.0	5.0	A124412
Mevinphos (Phosdrin)	ug/L	<2.0	<2.0	2.0	A124412
Parathion Ethyl	ug/L	<2.0	<2.0	2.0	A124412
Parathion methyl	ug/L	<2.0	<2.0	2.0	A124412
Phorate (Thimet)	ug/L	<1.0	<1.0	1.0	A124412
Phosmet	ug/L	<2.0	<2.0	2.0	A124412
Prometryn	ug/L	<1.0	<1.0	1.0	A124412
Simazine	ug/L	<2.0	<2.0	2.0	A124412
Terbufos	ug/L	<1.0	<1.0	1.0	A124412
Triallate	ug/L	<5.0	<5.0	5.0	A124412
Trifluralin	ug/L	<5.0	<5.0	5.0	A124412
Surrogate Recovery (%)					
2-Fluorobiphenyl	%	54	64		A124412
D14-Terphenyl (FS)	%	101	103		A124412
D5-NITROBENZENE (sur.)	%	56	76		A124412
RDL = Reportable Detection Limit					

BUREAU
VERITASBV Labs Job #: C092803
Report Date: 2020/12/29DILLON CONSULTING LTD.
Client Project #: 20-3725

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		ZB1172	ZB1173	ZB1174	ZB1176		
Sampling Date		2020/12/16 12:50	2020/12/16 13:10	2020/12/16 11:45	2020/12/16 13:00		
COC Number		C#627236-01-01	C#627236-01-01	C#627236-01-01	C#627236-01-01		
	UNITS	MW20-02	MW20-03	MW20-04	MW20-06	RDL	QC Batch
Polycyclic Aromatics							
B[a]P TPE Total Potency Equivalents	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	A115732
Acenaphthene	ug/L	<0.10	<0.10	0.19	<0.10	0.10	A117051
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	A117051
Acridine	ug/L	<0.040	<0.040	<0.040	<0.040	0.040	A117051
Anthracene	ug/L	<0.010	<0.010	0.012	<0.010	0.010	A117051
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	A117051
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	A117051
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	A117051
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	A117051
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	A117051
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	A117051
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	A117051
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	A117051
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	A117051
Fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	A117051
Fluorene	ug/L	<0.050	<0.050	0.065	<0.050	0.050	A117051
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	A117051
1-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	A117051
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	A117051
Naphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	A117051
Phenanthrene	ug/L	<0.050	<0.050	0.070	<0.050	0.050	A117051
Perylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	A117051
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	0.020	A117051
Quinoline	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	A117051
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	106	106	110	113		A117051
D8-ACENAPHTHYLENE (sur.)	%	95	99	102	106		A117051
D8-NAPHTHALENE (sur.)	%	79	79	80	84		A117051
TERPHENYL-D14 (sur.)	%	108	108	111	114		A117051
RDL = Reportable Detection Limit							

BUREAU
VERITASBV Labs Job #: C092803
Report Date: 2020/12/29DILLON CONSULTING LTD.
Client Project #: 20-3725**SEMIVOLATILE ORGANICS BY GC-MS (WATER)**

BV Labs ID		ZB1178		
Sampling Date		2020/12/16		
COC Number		C#627236-01-01		
	UNITS	FD-1	RDL	QC Batch
Polycyclic Aromatics				
B[a]P TPE Total Potency Equivalents	ug/L	<0.010	0.010	A115732
Acenaphthene	ug/L	<0.10	0.10	A117051
Acenaphthylene	ug/L	<0.10	0.10	A117051
Acridine	ug/L	<0.040	0.040	A117051
Anthracene	ug/L	<0.010	0.010	A117051
Benzo(a)anthracene	ug/L	<0.0085	0.0085	A117051
Benzo(b&j)fluoranthene	ug/L	<0.0085	0.0085	A117051
Benzo(k)fluoranthene	ug/L	<0.0085	0.0085	A117051
Benzo(g,h,i)perylene	ug/L	<0.0085	0.0085	A117051
Benzo(c)phenanthrene	ug/L	<0.050	0.050	A117051
Benzo(a)pyrene	ug/L	<0.0075	0.0075	A117051
Benzo(e)pyrene	ug/L	<0.050	0.050	A117051
Chrysene	ug/L	<0.0085	0.0085	A117051
Dibenz(a,h)anthracene	ug/L	<0.0075	0.0075	A117051
Fluoranthene	ug/L	<0.010	0.010	A117051
Fluorene	ug/L	<0.050	0.050	A117051
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	0.0085	A117051
1-Methylnaphthalene	ug/L	<0.10	0.10	A117051
2-Methylnaphthalene	ug/L	<0.10	0.10	A117051
Naphthalene	ug/L	<0.10	0.10	A117051
Phenanthrene	ug/L	<0.050	0.050	A117051
Perylene	ug/L	<0.050	0.050	A117051
Pyrene	ug/L	<0.020	0.020	A117051
Quinoline	ug/L	<0.20	0.20	A117051
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	107		A117051
D8-ACENAPHTHYLENE (sur.)	%	99		A117051
D8-NAPHTHALENE (sur.)	%	80		A117051
TERPHENYL-D14 (sur.)	%	108		A117051
RDL = Reportable Detection Limit				



BUREAU
VERITAS

BV Labs Job #: C092803
Report Date: 2020/12/29

DILLON CONSULTING LTD.
Client Project #: 20-3725

MERCURY BY COLD VAPOR (WATER)

BV Labs ID		ZB1172	ZB1173	ZB1175	ZB1176	ZB1177		
Sampling Date		2020/12/16 12:50	2020/12/16 13:10	2020/12/16 12:15	2020/12/16 13:00	2020/12/16 13:30		
COC Number		C#627236-01-01	C#627236-01-01	C#627236-01-01	C#627236-01-01	C#627236-01-01		
	UNITS	MW20-02	MW20-03	MW20-05	MW20-06	MW20-07	RDL	QC Batch
Elements								
Dissolved Mercury (Hg)	ug/L	0.0022	0.0023	<0.0019	0.0021	<0.0019	0.0019	A119855
RDL = Reportable Detection Limit								

**ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)**

BV Labs ID		ZB1171			ZB1172		ZB1173		
Sampling Date		2020/12/16 12:30			2020/12/16 12:50		2020/12/16 13:10		
COC Number		C#627236-01-01			C#627236-01-01		C#627236-01-01		
	UNITS	MW20-01	RDL	QC Batch	MW20-02	RDL	MW20-03	RDL	QC Batch
Elements									
Dissolved Aluminum (Al)	mg/L				<0.0030	0.0030	<0.0030	0.0030	A117645
Dissolved Antimony (Sb)	mg/L				<0.00060	0.00060	<0.00060	0.00060	A117645
Dissolved Arsenic (As)	mg/L				0.0014	0.00020	0.0058	0.00020	A117645
Dissolved Barium (Ba)	mg/L				0.015	0.010	0.081	0.010	A118445
Dissolved Beryllium (Be)	mg/L				<0.0010	0.0010	<0.0010	0.0010	A117645
Dissolved Boron (B)	mg/L				0.14	0.020	1.9	0.020	A118445
Dissolved Calcium (Ca)	mg/L				570 (1)	1.5	220	0.30	A118445
Dissolved Chromium (Cr)	mg/L				<0.0010	0.0010	<0.0010	0.0010	A117645
Dissolved Cobalt (Co)	mg/L				0.0090	0.00030	0.0013	0.00030	A117645
Dissolved Copper (Cu)	mg/L				0.023	0.00020	0.0080	0.00020	A117645
Dissolved Iron (Fe)	mg/L				<0.060	0.060	<0.060	0.060	A118445
Dissolved Lead (Pb)	mg/L				<0.00020	0.00020	0.00028	0.00020	A117645
Dissolved Lithium (Li)	mg/L				0.94	0.020	0.51	0.020	A118445
Dissolved Magnesium (Mg)	mg/L				410	0.20	540 (1)	1.0	A118445
Dissolved Manganese (Mn)	mg/L				4.3	0.0040	1.1	0.0040	A118445
Dissolved Molybdenum (Mo)	mg/L				0.0041	0.00020	0.011	0.00020	A117645
Dissolved Nickel (Ni)	mg/L				0.060	0.00050	0.020	0.00050	A117645
Dissolved Phosphorus (P)	mg/L				<0.10	0.10	0.36	0.10	A118445
Dissolved Potassium (K)	mg/L				13	0.30	8.2	0.30	A118445
Dissolved Selenium (Se)	mg/L				0.0014	0.00020	0.00041	0.00020	A117645
Dissolved Silicon (Si)	mg/L				12	0.10	11	0.10	A118445
Dissolved Silver (Ag)	mg/L				<0.00010	0.00010	<0.00010	0.00010	A117645
Dissolved Sodium (Na)	mg/L				250	0.50	440	0.50	A118445
Dissolved Strontium (Sr)	mg/L				3.8	0.020	2.2	0.020	A118445
Dissolved Sulphur (S)	mg/L				830 (1)	1.0	230	0.20	A118445
Dissolved Thallium (Tl)	mg/L				<0.00020	0.00020	<0.00020	0.00020	A117645
Dissolved Tin (Sn)	mg/L				<0.0010	0.0010	<0.0010	0.0010	A117645
Dissolved Titanium (Ti)	mg/L				<0.0010	0.0010	0.0016	0.0010	A117645
Dissolved Uranium (U)	mg/L				0.19	0.00010	0.035	0.00010	A117645
Dissolved Vanadium (V)	mg/L				0.0016	0.0010	0.021	0.0010	A117645
Dissolved Zinc (Zn)	mg/L				0.0050	0.0030	0.049	0.0030	A117645

RDL = Reportable Detection Limit

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



ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		ZB1171			ZB1172		ZB1173		
Sampling Date		2020/12/16 12:30			2020/12/16 12:50		2020/12/16 13:10		
COC Number		C#627236-01-01			C#627236-01-01		C#627236-01-01		
	UNITS	MW20-01	RDL	QC Batch	MW20-02	RDL	MW20-03	RDL	QC Batch

Lab Filtered Elements

Dissolved Calcium (Ca)	mg/L	180	0.30	A117916					
Dissolved Iron (Fe)	mg/L	<0.060	0.060	A117916					
Dissolved Magnesium (Mg)	mg/L	280	0.20	A117916					
Dissolved Manganese (Mn)	mg/L	3.4	0.0040	A117916					
Dissolved Potassium (K)	mg/L	3.0	0.30	A117916					
Dissolved Sodium (Na)	mg/L	100	0.50	A117916					

RDL = Reportable Detection Limit

**ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)**

BV Labs ID		ZB1175		ZB1176		ZB1177		
Sampling Date		2020/12/16 12:15		2020/12/16 13:00		2020/12/16 13:30		
COC Number		C#627236-01-01		C#627236-01-01		C#627236-01-01		
	UNITS	MW20-05	RDL	MW20-06	RDL	MW20-07	RDL	QC Batch
Elements								
Dissolved Aluminum (Al)	mg/L	<0.0030	0.0030	<0.0030	0.0030	<0.0030	0.0030	A117645
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	<0.00060	0.00060	<0.00060	0.00060	A117645
Dissolved Arsenic (As)	mg/L	0.00094	0.00020	0.0020	0.00020	0.0015	0.00020	A117645
Dissolved Barium (Ba)	mg/L	0.039	0.010	0.076	0.010	0.11	0.010	A118445
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	A117645
Dissolved Boron (B)	mg/L	0.15	0.020	0.18	0.020	0.14	0.020	A118445
Dissolved Calcium (Ca)	mg/L	550 (1)	1.5	240	0.30	540 (1)	1.5	A118445
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	A117645
Dissolved Cobalt (Co)	mg/L	0.0061	0.00030	0.00067	0.00030	0.00056	0.00030	A117645
Dissolved Copper (Cu)	mg/L	0.0053	0.00020	0.012	0.00020	0.0071	0.00020	A117645
Dissolved Iron (Fe)	mg/L	<0.060	0.060	<0.060	0.060	<0.060	0.060	A118445
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	<0.00020	0.00020	<0.00020	0.00020	A117645
Dissolved Lithium (Li)	mg/L	0.83	0.020	0.50	0.020	0.78	0.020	A118445
Dissolved Magnesium (Mg)	mg/L	300	0.20	280	0.20	330	0.20	A118445
Dissolved Manganese (Mn)	mg/L	4.3	0.0040	0.42	0.0040	0.58	0.0040	A118445
Dissolved Molybdenum (Mo)	mg/L	0.0018	0.00020	0.0080	0.00020	0.0027	0.00020	A117645
Dissolved Nickel (Ni)	mg/L	0.020	0.00050	0.012	0.00050	0.012	0.00050	A117645
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	0.25	0.10	0.14	0.10	A118445
Dissolved Potassium (K)	mg/L	13	0.30	11	0.30	18	0.30	A118445
Dissolved Selenium (Se)	mg/L	0.00051	0.00020	0.00074	0.00020	0.0022	0.00020	A117645
Dissolved Silicon (Si)	mg/L	12	0.10	12	0.10	12	0.10	A118445
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	<0.00010	0.00010	<0.00010	0.00010	A117645
Dissolved Sodium (Na)	mg/L	180	0.50	130	0.50	200	0.50	A118445
Dissolved Strontium (Sr)	mg/L	3.5	0.020	1.9	0.020	3.2	0.020	A118445
Dissolved Sulphur (S)	mg/L	750 (1)	1.0	300	0.20	810 (1)	1.0	A118445
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	<0.00020	0.00020	<0.00020	0.00020	A117645
Dissolved Tin (Sn)	mg/L	0.0032	0.0010	0.0019	0.0010	0.0034	0.0010	A117645
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	A117645
Dissolved Uranium (U)	mg/L	0.15	0.00010	0.11	0.00010	0.14	0.00010	A117645
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	0.0011	0.0010	<0.0010	0.0010	A117645
Dissolved Zinc (Zn)	mg/L	0.010	0.0030	0.024	0.0030	0.19	0.0030	A117645
RDL = Reportable Detection Limit								
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.								

**ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)**

BV Labs ID		ZB1178		
Sampling Date		2020/12/16		
COC Number		C#627236-01-01		
	UNITS	FD-1	RDL	QC Batch

Elements				
Dissolved Aluminum (Al)	mg/L	<0.0030	0.0030	A117645
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	A117645
Dissolved Arsenic (As)	mg/L	0.0058	0.00020	A117645
Dissolved Barium (Ba)	mg/L	0.079	0.010	A118445
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	A117645
Dissolved Boron (B)	mg/L	1.9	0.020	A118445
Dissolved Calcium (Ca)	mg/L	230	0.30	A118445
Dissolved Chromium (Cr)	mg/L	0.0011	0.0010	A117645
Dissolved Cobalt (Co)	mg/L	0.0014	0.00030	A117645
Dissolved Copper (Cu)	mg/L	0.0078	0.00020	A117645
Dissolved Iron (Fe)	mg/L	<0.060	0.060	A118445
Dissolved Lead (Pb)	mg/L	0.00042	0.00020	A117645
Dissolved Lithium (Li)	mg/L	0.52	0.020	A118445
Dissolved Magnesium (Mg)	mg/L	530 (1)	1.0	A118445
Dissolved Manganese (Mn)	mg/L	1.0	0.0040	A118445
Dissolved Molybdenum (Mo)	mg/L	0.011	0.00020	A117645
Dissolved Nickel (Ni)	mg/L	0.020	0.00050	A117645
Dissolved Phosphorus (P)	mg/L	0.37	0.10	A118445
Dissolved Potassium (K)	mg/L	8.4	0.30	A118445
Dissolved Selenium (Se)	mg/L	0.00045	0.00020	A117645
Dissolved Silicon (Si)	mg/L	10	0.10	A118445
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	A117645
Dissolved Sodium (Na)	mg/L	440	0.50	A118445
Dissolved Strontium (Sr)	mg/L	2.2	0.020	A118445
Dissolved Sulphur (S)	mg/L	220	0.20	A118445
Dissolved Thallium (Tl)	mg/L	0.00029	0.00020	A117645
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	A117645
Dissolved Titanium (Ti)	mg/L	0.0015	0.0010	A117645
Dissolved Uranium (U)	mg/L	0.035	0.00010	A117645
Dissolved Vanadium (V)	mg/L	0.021	0.0010	A117645
Dissolved Zinc (Zn)	mg/L	0.048	0.0030	A117645

RDL = Reportable Detection Limit

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



BUREAU
VERITAS

BV Labs Job #: C092803
Report Date: 2020/12/29

DILLON CONSULTING LTD.
Client Project #: 20-3725

VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		ZB1172	ZB1173	ZB1174	ZB1175	ZB1176		
Sampling Date		2020/12/16 12:50	2020/12/16 13:10	2020/12/16 11:45	2020/12/16 12:15	2020/12/16 13:00		
COC Number		C#627236-01-01	C#627236-01-01	C#627236-01-01	C#627236-01-01	C#627236-01-01		
	UNITS	MW20-02	MW20-03	MW20-04	MW20-05	MW20-06	RDL	QC Batch

Volatiles

Benzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	A117429
Toluene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	A117429
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	A117429
m & p-Xylene	ug/L	<0.80	<0.80	<0.80	<0.80	<0.80	0.80	A117429
o-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	A117429
Xylenes (Total)	ug/L	<0.89	<0.89	<0.89	<0.89	<0.89	0.89	A116277
F1 (C6-C10) - BTEX	ug/L	<100	<100	<100	<100	<100	100	A116277
F1 (C6-C10)	ug/L	<100	<100	<100	<100	<100	100	A117429

Surrogate Recovery (%)

1,4-Difluorobenzene (sur.)	%	104	106	106	106	106		A117429
4-Bromofluorobenzene (sur.)	%	93	94	88	95	94		A117429
D4-1,2-Dichloroethane (sur.)	%	97	99	98	97	97		A117429

RDL = Reportable Detection Limit

BV Labs ID		ZB1177		ZB1178		
Sampling Date		2020/12/16 13:30		2020/12/16		
COC Number		C#627236-01-01		C#627236-01-01		
	UNITS	MW20-07	QC Batch	FD-1	RDL	QC Batch

Volatiles

Benzene	ug/L	<0.40	A117429	<0.40	0.40	A117429
Toluene	ug/L	<0.40	A117429	<0.40	0.40	A117429
Ethylbenzene	ug/L	<0.40	A117429	<0.40	0.40	A117429
m & p-Xylene	ug/L	<0.80	A117429	<0.80	0.80	A117429
o-Xylene	ug/L	<0.40	A117429	<0.40	0.40	A117429
Xylenes (Total)	ug/L	<0.89	A116277	<0.89	0.89	A115715
F1 (C6-C10) - BTEX	ug/L	<100	A116277	<100	100	A115715
F1 (C6-C10)	ug/L	<100	A117429	<100	100	A117429

Surrogate Recovery (%)

1,4-Difluorobenzene (sur.)	%	106	A117429	104		A117429
4-Bromofluorobenzene (sur.)	%	92	A117429	93		A117429
D4-1,2-Dichloroethane (sur.)	%	98	A117429	98		A117429

RDL = Reportable Detection Limit



GENERAL COMMENTS

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

Package 1	3.0°C
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Results relate only to the items tested.



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BV Labs Job #: C092803
Report Date: 2020/12/29

DILLON CONSULTING LTD.
Client Project #: 20-3725

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A117044	VP4	Matrix Spike	O-TERPHENYL (sur.)	2020/12/18		140	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/18		NC	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2020/12/18		NC	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2020/12/18		105	%	60 - 140
A117044	VP4	Spiked Blank	O-TERPHENYL (sur.)	2020/12/18		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/18		107	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2020/12/18		107	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2020/12/18		104	%	60 - 140
A117044	VP4	Method Blank	O-TERPHENYL (sur.)	2020/12/18		99	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2020/12/18	<0.10		mg/L	
			F3 (C16-C34 Hydrocarbons)	2020/12/18	<0.10		mg/L	
			F4 (C34-C50 Hydrocarbons)	2020/12/18	<0.20		mg/L	
A117044	VP4	RPD	F2 (C10-C16 Hydrocarbons)	2020/12/18	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2020/12/18	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2020/12/18	NC		%	30
A117051	NK3	Matrix Spike	D10-ANTHRACENE (sur.)	2020/12/19		110	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/19		103	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/19		85	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/19		113	%	50 - 130
			Acenaphthene	2020/12/19		98	%	50 - 130
			Acenaphthylene	2020/12/19		96	%	50 - 130
			Acridine	2020/12/19		100	%	50 - 130
			Anthracene	2020/12/19		90	%	50 - 130
			Benzo(a)anthracene	2020/12/19		108	%	50 - 130
			Benzo(b&j)fluoranthene	2020/12/19		96	%	50 - 130
			Benzo(k)fluoranthene	2020/12/19		99	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/19		101	%	50 - 130
			Benzo(c)phenanthrene	2020/12/19		107	%	50 - 130
			Benzo(a)pyrene	2020/12/19		93	%	50 - 130
			Benzo(e)pyrene	2020/12/19		95	%	50 - 130
			Chrysene	2020/12/19		104	%	50 - 130
			Dibenz(a,h)anthracene	2020/12/19		106	%	50 - 130
			Fluoranthene	2020/12/19		98	%	50 - 130
			Fluorene	2020/12/19		102	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/19		103	%	50 - 130
			1-Methylnaphthalene	2020/12/19		97	%	50 - 130
			2-Methylnaphthalene	2020/12/19		92	%	50 - 130
			Naphthalene	2020/12/19		94	%	50 - 130
			Phenanthrene	2020/12/19		100	%	50 - 130
			Perylene	2020/12/19		93	%	50 - 130
			Pyrene	2020/12/19		99	%	50 - 130
			Quinoline	2020/12/19		105	%	50 - 130
A117051	NK3	Spiked Blank	D10-ANTHRACENE (sur.)	2020/12/19		104	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/19		94	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/19		78	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/19		110	%	50 - 130
			Acenaphthene	2020/12/19		94	%	50 - 130
			Acenaphthylene	2020/12/19		92	%	50 - 130
			Acridine	2020/12/19		92	%	50 - 130
			Anthracene	2020/12/19		88	%	50 - 130
			Benzo(a)anthracene	2020/12/19		105	%	50 - 130
			Benzo(b&j)fluoranthene	2020/12/19		95	%	50 - 130
			Benzo(k)fluoranthene	2020/12/19		101	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/19		102	%	50 - 130
			Benzo(c)phenanthrene	2020/12/19		104	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A117051	NK3	Method Blank	Benzo(a)pyrene	2020/12/19		92	%	50 - 130
			Benzo(e)pyrene	2020/12/19		98	%	50 - 130
			Chrysene	2020/12/19		107	%	50 - 130
			Dibenz(a,h)anthracene	2020/12/19		105	%	50 - 130
			Fluoranthene	2020/12/19		95	%	50 - 130
			Fluorene	2020/12/19		97	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/19		99	%	50 - 130
			1-Methylnaphthalene	2020/12/19		92	%	50 - 130
			2-Methylnaphthalene	2020/12/19		87	%	50 - 130
			Naphthalene	2020/12/19		88	%	50 - 130
			Phenanthrene	2020/12/19		95	%	50 - 130
			Perylene	2020/12/19		98	%	50 - 130
			Pyrene	2020/12/19		96	%	50 - 130
			Quinoline	2020/12/19		105	%	50 - 130
			D10-ANTHRACENE (sur.)	2020/12/19		110	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2020/12/19		100	%	50 - 130
			D8-NAPHTHALENE (sur.)	2020/12/19		81	%	50 - 130
			TERPHENYL-D14 (sur.)	2020/12/19		115	%	50 - 130
			Acenaphthene	2020/12/19	<0.10		ug/L	
			Acenaphthylene	2020/12/19	<0.10		ug/L	
			Acridine	2020/12/19	<0.040		ug/L	
			Anthracene	2020/12/19	<0.010		ug/L	
			Benzo(a)anthracene	2020/12/19	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2020/12/19	<0.0085		ug/L	
			Benzo(k)fluoranthene	2020/12/19	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2020/12/19	<0.0085		ug/L	
			Benzo(c)phenanthrene	2020/12/19	<0.050		ug/L	
			Benzo(a)pyrene	2020/12/19	<0.0075		ug/L	
			Benzo(e)pyrene	2020/12/19	<0.050		ug/L	
			Chrysene	2020/12/19	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2020/12/19	<0.0075		ug/L	
			Fluoranthene	2020/12/19	<0.010		ug/L	
			Fluorene	2020/12/19	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2020/12/19	<0.0085		ug/L	
			1-Methylnaphthalene	2020/12/19	<0.10		ug/L	
			2-Methylnaphthalene	2020/12/19	<0.10		ug/L	
			Naphthalene	2020/12/19	<0.10		ug/L	
			Phenanthrene	2020/12/19	<0.050		ug/L	
			Perylene	2020/12/19	<0.050		ug/L	
			Pyrene	2020/12/19	<0.020		ug/L	
			Quinoline	2020/12/19	<0.20		ug/L	
A117051	NK3	RPD	Acenaphthene	2020/12/19	NC		%	30
			Acenaphthylene	2020/12/19	NC		%	30
			Acridine	2020/12/19	NC		%	30
			Anthracene	2020/12/19	NC		%	30
			Benzo(a)anthracene	2020/12/19	NC		%	30
			Benzo(b&j)fluoranthene	2020/12/19	NC		%	30
			Benzo(k)fluoranthene	2020/12/19	NC		%	30
			Benzo(g,h,i)perylene	2020/12/19	NC		%	30
			Benzo(c)phenanthrene	2020/12/19	NC		%	30
			Benzo(a)pyrene	2020/12/19	NC		%	30
			Benzo(e)pyrene	2020/12/19	NC		%	30
			Chrysene	2020/12/19	NC		%	30
			Dibenz(a,h)anthracene	2020/12/19	NC		%	30
			Fluoranthene	2020/12/19	NC		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A117429	RSU	Matrix Spike [ZB1172-03]	Fluorene	2020/12/19	NC		%	30
			Indeno(1,2,3-cd)pyrene	2020/12/19	NC		%	30
			1-Methylnaphthalene	2020/12/19	NC		%	30
			2-Methylnaphthalene	2020/12/19	NC		%	30
			Naphthalene	2020/12/19	12		%	30
			Phenanthrene	2020/12/19	NC		%	30
			Perylene	2020/12/19	NC		%	30
			Pyrene	2020/12/19	NC		%	30
			Quinoline	2020/12/19	NC		%	30
			1,4-Difluorobenzene (sur.)	2020/12/18		106	%	50 - 140
A117429	RSU	Spiked Blank	4-Bromofluorobenzene (sur.)	2020/12/18		94	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2020/12/18		96	%	50 - 140
			Benzene	2020/12/18		97	%	50 - 140
			Toluene	2020/12/18		92	%	50 - 140
			Ethylbenzene	2020/12/18		95	%	50 - 140
			m & p-Xylene	2020/12/18		95	%	50 - 140
			o-Xylene	2020/12/18		93	%	50 - 140
			F1 (C6-C10)	2020/12/18		72	%	60 - 140
			1,4-Difluorobenzene (sur.)	2020/12/18		109	%	50 - 140
			4-Bromofluorobenzene (sur.)	2020/12/18		93	%	50 - 140
A117429	RSU	Method Blank	D4-1,2-Dichloroethane (sur.)	2020/12/18		96	%	50 - 140
			Benzene	2020/12/18		100	%	60 - 130
			Toluene	2020/12/18		95	%	60 - 130
			Ethylbenzene	2020/12/18		99	%	60 - 130
			m & p-Xylene	2020/12/18		100	%	60 - 130
			o-Xylene	2020/12/18		97	%	60 - 130
			F1 (C6-C10)	2020/12/18		93	%	60 - 140
			1,4-Difluorobenzene (sur.)	2020/12/18		104	%	50 - 140
			4-Bromofluorobenzene (sur.)	2020/12/18		94	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2020/12/18		100	%	50 - 140
A117429	RSU	RPD	Benzene	2020/12/18	<0.40		ug/L	
			Toluene	2020/12/18	<0.40		ug/L	
			Ethylbenzene	2020/12/18	<0.40		ug/L	
			m & p-Xylene	2020/12/18	<0.80		ug/L	
			o-Xylene	2020/12/18	<0.40		ug/L	
			F1 (C6-C10)	2020/12/18	<100		ug/L	
			Benzene	2020/12/18	NC		%	30
			Toluene	2020/12/18	NC		%	30
			Ethylbenzene	2020/12/18	NC		%	30
			m & p-Xylene	2020/12/18	NC		%	30
A117453	CT6	Matrix Spike [ZB1173-01]	o-Xylene	2020/12/18	NC		%	30
			F1 (C6-C10)	2020/12/18	NC		%	30
A117453	CT6	Spiked Blank	Dissolved Nitrite (N)	2020/12/17		93	%	80 - 120
			Dissolved Nitrate (N)	2020/12/17		97	%	80 - 120
A117453	CT6	Method Blank	Dissolved Nitrite (N)	2020/12/17		102	%	80 - 120
			Dissolved Nitrate (N)	2020/12/17		104	%	80 - 120
A117453	CT6	RPD [ZB1173-01]	Dissolved Nitrite (N)	2020/12/17	<0.010		mg/L	
			Dissolved Nitrate (N)	2020/12/17	<0.010		mg/L	
A117453	CT6	RPD [ZB1173-01]	Dissolved Nitrite (N)	2020/12/17	NC		%	20
			Dissolved Nitrate (N)	2020/12/17	7.9		%	20
A117645	KH2	Matrix Spike	Dissolved Aluminum (Al)	2020/12/18		94	%	80 - 120
			Dissolved Antimony (Sb)	2020/12/18		91	%	80 - 120
			Dissolved Arsenic (As)	2020/12/18		102	%	80 - 120
			Dissolved Beryllium (Be)	2020/12/18		101	%	80 - 120
			Dissolved Chromium (Cr)	2020/12/18		99	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A117645	KH2	Spiked Blank	Dissolved Cobalt (Co)	2020/12/18		98	%	80 - 120
			Dissolved Copper (Cu)	2020/12/18		96	%	80 - 120
			Dissolved Lead (Pb)	2020/12/18		91	%	80 - 120
			Dissolved Molybdenum (Mo)	2020/12/18		102	%	80 - 120
			Dissolved Nickel (Ni)	2020/12/18		97	%	80 - 120
			Dissolved Selenium (Se)	2020/12/18		103	%	80 - 120
			Dissolved Silver (Ag)	2020/12/18		92	%	80 - 120
			Dissolved Thallium (Tl)	2020/12/18		93	%	80 - 120
			Dissolved Tin (Sn)	2020/12/18		93	%	80 - 120
			Dissolved Titanium (Ti)	2020/12/18		97	%	80 - 120
			Dissolved Uranium (U)	2020/12/18		95	%	80 - 120
			Dissolved Vanadium (V)	2020/12/18		102	%	80 - 120
			Dissolved Zinc (Zn)	2020/12/18		93	%	80 - 120
			Dissolved Aluminum (Al)	2020/12/18		94	%	80 - 120
			Dissolved Antimony (Sb)	2020/12/18		92	%	80 - 120
			Dissolved Arsenic (As)	2020/12/18		103	%	80 - 120
			Dissolved Beryllium (Be)	2020/12/18		97	%	80 - 120
			Dissolved Chromium (Cr)	2020/12/18		102	%	80 - 120
			Dissolved Cobalt (Co)	2020/12/18		100	%	80 - 120
			Dissolved Copper (Cu)	2020/12/18		102	%	80 - 120
			Dissolved Lead (Pb)	2020/12/18		95	%	80 - 120
			Dissolved Molybdenum (Mo)	2020/12/18		99	%	80 - 120
			Dissolved Nickel (Ni)	2020/12/18		101	%	80 - 120
			Dissolved Selenium (Se)	2020/12/18		107	%	80 - 120
			Dissolved Silver (Ag)	2020/12/18		96	%	80 - 120
			Dissolved Thallium (Tl)	2020/12/18		96	%	80 - 120
			Dissolved Tin (Sn)	2020/12/18		91	%	80 - 120
			Dissolved Titanium (Ti)	2020/12/18		108	%	80 - 120
			Dissolved Uranium (U)	2020/12/18		93	%	80 - 120
			Dissolved Vanadium (V)	2020/12/18		103	%	80 - 120
			Dissolved Zinc (Zn)	2020/12/18		97	%	80 - 120
A117645	KH2	Method Blank	Dissolved Aluminum (Al)	2020/12/18	<0.0030		mg/L	
			Dissolved Antimony (Sb)	2020/12/18	<0.00060		mg/L	
			Dissolved Arsenic (As)	2020/12/18	<0.00020		mg/L	
			Dissolved Beryllium (Be)	2020/12/18	<0.0010		mg/L	
			Dissolved Chromium (Cr)	2020/12/18	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2020/12/18	<0.00030		mg/L	
			Dissolved Copper (Cu)	2020/12/18	<0.00020		mg/L	
			Dissolved Lead (Pb)	2020/12/18	<0.00020		mg/L	
			Dissolved Molybdenum (Mo)	2020/12/18	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2020/12/18	<0.00050		mg/L	
			Dissolved Selenium (Se)	2020/12/18	<0.00020		mg/L	
			Dissolved Silver (Ag)	2020/12/18	<0.00010		mg/L	
			Dissolved Thallium (Tl)	2020/12/18	<0.00020		mg/L	
			Dissolved Tin (Sn)	2020/12/18	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2020/12/18	<0.0010		mg/L	
A117645	KH2	RPD	Dissolved Uranium (U)	2020/12/18	<0.00010		mg/L	
			Dissolved Vanadium (V)	2020/12/18	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2020/12/18	<0.0030		mg/L	
			Dissolved Aluminum (Al)	2020/12/18	NC		%	20
			Dissolved Antimony (Sb)	2020/12/18	NC		%	20
			Dissolved Arsenic (As)	2020/12/18	NC		%	20
			Dissolved Beryllium (Be)	2020/12/18	NC		%	20
			Dissolved Chromium (Cr)	2020/12/18	NC		%	20
			Dissolved Cobalt (Co)	2020/12/18	NC		%	20



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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A117739	FMO	Matrix Spike	Dissolved Copper (Cu)	2020/12/18	9.0		%	20
			Dissolved Lead (Pb)	2020/12/18	NC		%	20
			Dissolved Molybdenum (Mo)	2020/12/18	8.8		%	20
			Dissolved Nickel (Ni)	2020/12/18	20		%	20
			Dissolved Selenium (Se)	2020/12/18	7.4		%	20
			Dissolved Silver (Ag)	2020/12/18	NC		%	20
			Dissolved Thallium (Tl)	2020/12/18	NC		%	20
			Dissolved Tin (Sn)	2020/12/18	9.4		%	20
			Dissolved Titanium (Ti)	2020/12/18	NC		%	20
			Dissolved Uranium (U)	2020/12/18	2.4		%	20
			Dissolved Vanadium (V)	2020/12/18	NC		%	20
			Dissolved Zinc (Zn)	2020/12/18	NC		%	20
A117739	FMO	Spiked Blank	Dissolved Chloride (Cl)	2020/12/18		101	%	80 - 120
			Dissolved Sulphate (SO4)	2020/12/18		NC	%	80 - 120
A117739	FMO	Method Blank	Dissolved Chloride (Cl)	2020/12/18		105	%	80 - 120
			Dissolved Sulphate (SO4)	2020/12/18		103	%	80 - 120
A117739	FMO	RPD	Dissolved Chloride (Cl)	2020/12/18	<1.0		mg/L	
			Dissolved Sulphate (SO4)	2020/12/18	<1.0		mg/L	
A117739	FMO	RPD	Dissolved Chloride (Cl)	2020/12/18	2.2		%	20
			Dissolved Sulphate (SO4)	2020/12/18	0.12		%	20
A117755	BML	Matrix Spike	Dissolved Chloride (Cl)	2020/12/18		NC	%	80 - 120
			Dissolved Sulphate (SO4)	2020/12/18		NC	%	80 - 120
A117755	BML	Spiked Blank	Dissolved Chloride (Cl)	2020/12/18		105	%	80 - 120
			Dissolved Sulphate (SO4)	2020/12/18		103	%	80 - 120
A117755	BML	Method Blank	Dissolved Chloride (Cl)	2020/12/18	<1.0		mg/L	
			Dissolved Sulphate (SO4)	2020/12/18	<1.0		mg/L	
A117755	BML	RPD	Dissolved Chloride (Cl)	2020/12/18	1.2 (1)		%	20
A117764	IKO	Spiked Blank	Alkalinity (Total as CaCO3)	2020/12/18		101	%	80 - 120
A117764	IKO	Method Blank	Alkalinity (PP as CaCO3)	2020/12/18	<1.0		mg/L	
			Alkalinity (Total as CaCO3)	2020/12/18	<1.0		mg/L	
			Bicarbonate (HCO3)	2020/12/18	<1.0		mg/L	
			Carbonate (CO3)	2020/12/18	<1.0		mg/L	
			Hydroxide (OH)	2020/12/18	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2020/12/18	NC		%	20
			Alkalinity (Total as CaCO3)	2020/12/18	0.62		%	20
			Bicarbonate (HCO3)	2020/12/18	0.62		%	20
			Carbonate (CO3)	2020/12/18	NC		%	20
			Hydroxide (OH)	2020/12/18	NC		%	20
A117787	IKO	Spiked Blank	pH	2020/12/18		100	%	97 - 103
A117787	IKO	RPD	pH	2020/12/18	0.11		%	N/A
A117788	IKO	Spiked Blank	Conductivity	2020/12/18		99	%	90 - 110
A117788	IKO	Method Blank	Conductivity	2020/12/18	<2.0		uS/cm	
A117788	IKO	RPD	Conductivity	2020/12/18	0.60		%	10
A117916	JAB	Matrix Spike	Dissolved Calcium (Ca)	2020/12/18		90	%	80 - 120
			Dissolved Iron (Fe)	2020/12/18		100	%	80 - 120
			Dissolved Magnesium (Mg)	2020/12/18		94	%	80 - 120
			Dissolved Manganese (Mn)	2020/12/18		100	%	80 - 120
			Dissolved Potassium (K)	2020/12/18		98	%	80 - 120
			Dissolved Sodium (Na)	2020/12/18		88	%	80 - 120
			Dissolved Calcium (Ca)	2020/12/18		97	%	80 - 120
			Dissolved Iron (Fe)	2020/12/18		108	%	80 - 120
			Dissolved Magnesium (Mg)	2020/12/18		101	%	80 - 120
			Dissolved Manganese (Mn)	2020/12/18		105	%	80 - 120
A117916	JAB	Spiked Blank	Dissolved Potassium (K)	2020/12/18		102	%	80 - 120
			Dissolved Sodium (Na)	2020/12/18		95	%	80 - 120



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BV Labs Job #: C092803
Report Date: 2020/12/29

DILLON CONSULTING LTD.
Client Project #: 20-3725

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A117916	JAB	Method Blank	Dissolved Calcium (Ca)	2020/12/18	<0.30		mg/L	
			Dissolved Iron (Fe)	2020/12/18	<0.060		mg/L	
			Dissolved Magnesium (Mg)	2020/12/18	<0.20		mg/L	
			Dissolved Manganese (Mn)	2020/12/18	<0.0040		mg/L	
			Dissolved Potassium (K)	2020/12/18	<0.30		mg/L	
			Dissolved Sodium (Na)	2020/12/18	<0.50		mg/L	
A117916	JAB	RPD	Dissolved Calcium (Ca)	2020/12/18	5.4		%	20
			Dissolved Iron (Fe)	2020/12/18	NC		%	20
			Dissolved Magnesium (Mg)	2020/12/18	6.0		%	20
			Dissolved Manganese (Mn)	2020/12/18	NC		%	20
			Dissolved Potassium (K)	2020/12/18	2.6		%	20
			Dissolved Sodium (Na)	2020/12/18	4.7		%	20
A117952	NMA	Spiked Blank	Alkalinity (Total as CaCO ₃)	2020/12/18		105	%	80 - 120
A117952	NMA	Method Blank	Alkalinity (PP as CaCO ₃)	2020/12/18	<1.0		mg/L	
			Alkalinity (Total as CaCO ₃)	2020/12/18	<1.0		mg/L	
			Bicarbonate (HCO ₃)	2020/12/18	<1.0		mg/L	
			Carbonate (CO ₃)	2020/12/18	<1.0		mg/L	
			Hydroxide (OH)	2020/12/18	<1.0		mg/L	
A117952	NMA	RPD	Alkalinity (PP as CaCO ₃)	2020/12/18	NC		%	20
			Alkalinity (Total as CaCO ₃)	2020/12/18	0.98		%	20
			Bicarbonate (HCO ₃)	2020/12/18	0.98		%	20
			Carbonate (CO ₃)	2020/12/18	NC		%	20
			Hydroxide (OH)	2020/12/18	NC		%	20
A117959	NMA	Spiked Blank	pH	2020/12/18		100	%	97 - 103
A117959	NMA	RPD	pH	2020/12/18	0.32		%	N/A
A117963	NMA	Spiked Blank	Conductivity	2020/12/18		98	%	90 - 110
A117963	NMA	Method Blank	Conductivity	2020/12/18	<2.0		uS/cm	
A117963	NMA	RPD	Conductivity	2020/12/18	0		%	10
A118445	JAB	Matrix Spike	Dissolved Barium (Ba)	2020/12/18		104	%	80 - 120
			Dissolved Boron (B)	2020/12/18		98	%	80 - 120
			Dissolved Calcium (Ca)	2020/12/18		NC	%	80 - 120
			Dissolved Iron (Fe)	2020/12/18		107	%	80 - 120
			Dissolved Lithium (Li)	2020/12/18		100	%	80 - 120
			Dissolved Magnesium (Mg)	2020/12/18		99	%	80 - 120
			Dissolved Manganese (Mn)	2020/12/18		107	%	80 - 120
			Dissolved Phosphorus (P)	2020/12/18		105	%	80 - 120
			Dissolved Potassium (K)	2020/12/18		105	%	80 - 120
			Dissolved Silicon (Si)	2020/12/18		96	%	80 - 120
			Dissolved Sodium (Na)	2020/12/18		NC	%	80 - 120
			Dissolved Strontium (Sr)	2020/12/18		96	%	80 - 120
			Dissolved Sulphur (S)	2020/12/18		97	%	80 - 120
A118445	JAB	Spiked Blank	Dissolved Barium (Ba)	2020/12/19		103	%	80 - 120
			Dissolved Boron (B)	2020/12/19		98	%	80 - 120
			Dissolved Calcium (Ca)	2020/12/19		102	%	80 - 120
			Dissolved Iron (Fe)	2020/12/19		104	%	80 - 120
			Dissolved Lithium (Li)	2020/12/19		101	%	80 - 120
			Dissolved Magnesium (Mg)	2020/12/19		104	%	80 - 120
			Dissolved Manganese (Mn)	2020/12/19		101	%	80 - 120
			Dissolved Phosphorus (P)	2020/12/19		97	%	80 - 120
			Dissolved Potassium (K)	2020/12/19		105	%	80 - 120
			Dissolved Silicon (Si)	2020/12/19		99	%	80 - 120
			Dissolved Sodium (Na)	2020/12/19		100	%	80 - 120
			Dissolved Strontium (Sr)	2020/12/19		101	%	80 - 120
			Dissolved Sulphur (S)	2020/12/19		97	%	80 - 120
A118445	JAB	Method Blank	Dissolved Barium (Ba)	2020/12/18	<0.010		mg/L	



QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A118445	JAB	RPD	Dissolved Boron (B)	2020/12/18	<0.020		mg/L	
			Dissolved Calcium (Ca)	2020/12/18	<0.30		mg/L	
			Dissolved Iron (Fe)	2020/12/18	<0.060		mg/L	
			Dissolved Lithium (Li)	2020/12/18	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2020/12/18	<0.20		mg/L	
			Dissolved Manganese (Mn)	2020/12/18	<0.0040		mg/L	
			Dissolved Phosphorus (P)	2020/12/18	<0.10		mg/L	
			Dissolved Potassium (K)	2020/12/18	<0.30		mg/L	
			Dissolved Silicon (Si)	2020/12/18	<0.10		mg/L	
			Dissolved Sodium (Na)	2020/12/18	<0.50		mg/L	
			Dissolved Strontium (Sr)	2020/12/18	<0.020		mg/L	
			Dissolved Sulphur (S)	2020/12/18	<0.20		mg/L	
			Dissolved Barium (Ba)	2020/12/18	1.1		%	20
			Dissolved Boron (B)	2020/12/18	1.9		%	20
			Dissolved Calcium (Ca)	2020/12/18	0.19		%	20
			Dissolved Iron (Fe)	2020/12/18	NC		%	20
			Dissolved Lithium (Li)	2020/12/18	1.0		%	20
			Dissolved Magnesium (Mg)	2020/12/18	0.86		%	20
			Dissolved Manganese (Mn)	2020/12/18	1.3		%	20
			Dissolved Phosphorus (P)	2020/12/18	NC		%	20
			Dissolved Potassium (K)	2020/12/18	0.61		%	20
			Dissolved Silicon (Si)	2020/12/18	0.92		%	20
			Dissolved Sodium (Na)	2020/12/18	0.34		%	20
			Dissolved Strontium (Sr)	2020/12/18	0.30		%	20
			Dissolved Sulphur (S)	2020/12/18	1.2		%	20
A119855	RK3	Matrix Spike	Dissolved Mercury (Hg)	2020/12/21		98	%	80 - 120
A119855	RK3	Spiked Blank	Dissolved Mercury (Hg)	2020/12/21		99	%	80 - 120
A119855	RK3	Method Blank	Dissolved Mercury (Hg)	2020/12/21	<0.0019		ug/L	
A119855	RK3	RPD	Dissolved Mercury (Hg)	2020/12/21	NC		%	20

N/A = Not Applicable

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

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

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 spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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



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BV Labs Job #: C092803
Report Date: 2020/12/29

DILLON CONSULTING LTD.
Client Project #: 20-3725

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

Gita Pokhrel, Laboratory Supervisor

Jared Wiseman, B.Sc., P.Chem., QP, Senior Analyst, Organics

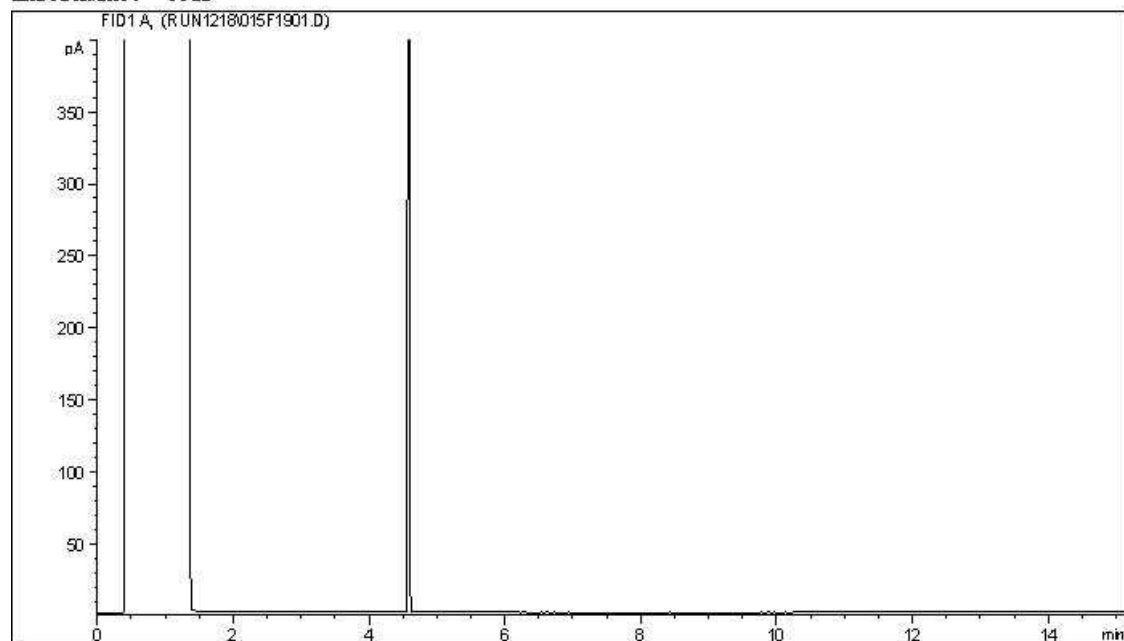
Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

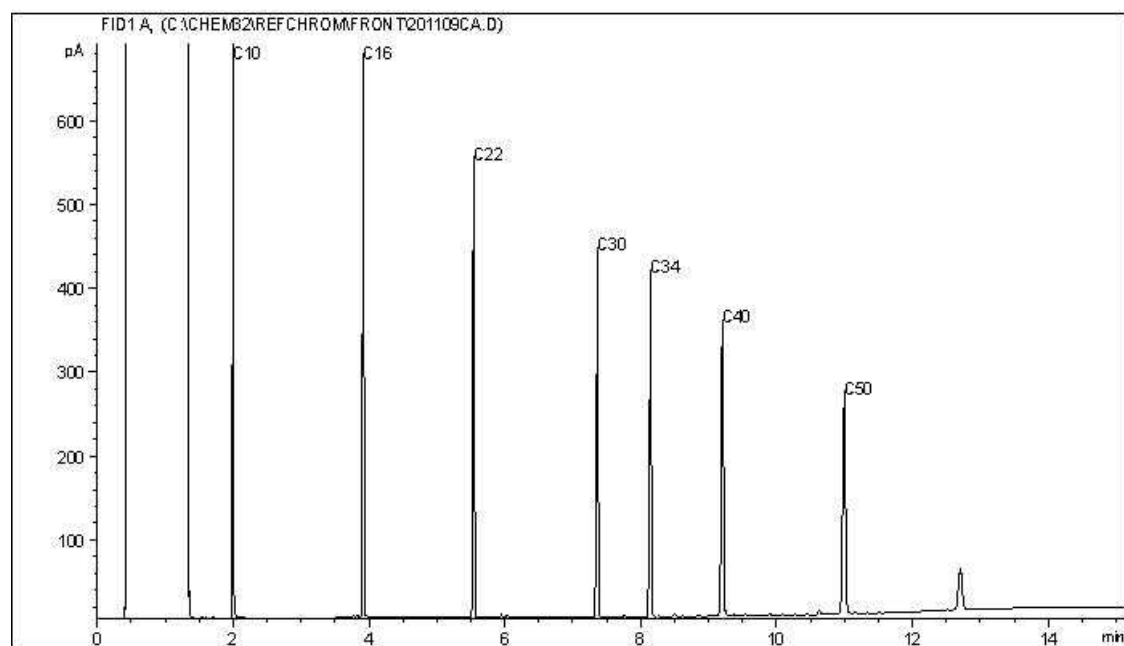
		Bureau Veritas Laboratories D-675 Berry Street, Winnipeg, Manitoba Canada R3H 1A7 Tel (204) 772-7276 Toll-free: 800-563-6266 Fax: (204) 772-2386 www.bvlabs.com				Chain Of Custody Record Page 1 of 1												
INVOICE TO:		Report Information				Project Information				Laboratory Use Only								
Company Name #8815 DILLON CONSULTING LTD.		Company Name Mitchell Traa, Sharon, Chapman				Quotation # C00154				BV Labs Job #		Bottle Order #:						
Contact Name ACCOUNTS PAYABLE		Contact Name				P.O. #				C092803								
Address 1558 Willson Place		Address				Project # 20-3725				Chain Of Custody Record		Project Manager						
Winnipeg MB R3T 0Y4						Project Name												
Phone (204) 453-2301 Fax: (204) 452-4412		Phone				Site #						Janelle Kochan						
Email apwinnipeg@dillon.ca		Email mtraa@dillon.ca, dillon@esdat.net, Schymone@Dillon.ca				Sampled By				C#627235-01-01								
Regulatory Criteria		Special Instructions				Analysis Requested				Turnaround Time (TAT) Required								
						Regular (Standard) TAT (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.				☒								
Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form						Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____				☐								
Samples must be kept cool (< 10°C) from time of sampling until delivery to BV Labs						Rush Confirmation Number _____				(call lab for #)								
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water? (Y/N)	Metals Field Filtered? (Y/N)	GC/MS Analysis of OP Pesticides	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	Mercury (Dissolved) by CV	BTEX and F1-F4 in Water	PAH in Water by GC/MS					# of Bottles	Comments
1	MW20-01	20/12/16	12:30	GW	Y	X	X										2	
2	MW20-02		12:50		Y			X	X	X	X						8	
3	MW20-03		13:10		Y		X	X	X	X	X						9	
4	MW20-04		11:45							X	X						6	
5	MW20-05		12:15		Y	X		X	X	X							7	
6	MW20-06		13:00		Y		X	X	X	X	X						9	
7	MW20-07		13:30		Y			X	X	X							6	
8	FD-1		-		Y			X		X	X						7	
9																		
10																		
* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# Jars used and not submitted		Lab Use Only								
MST		20/12/16	15:00	Aya Alyssa Hilado		20/12/16	1507			Time Sensitive ☐ Temperature (°C) on Receipt 13.3 9.3 9.3 Custody Seal Intact on Cooler? ☐ Yes ☐ No								
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.										White: BV Labs Yellow: Client								
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.										ice present								

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



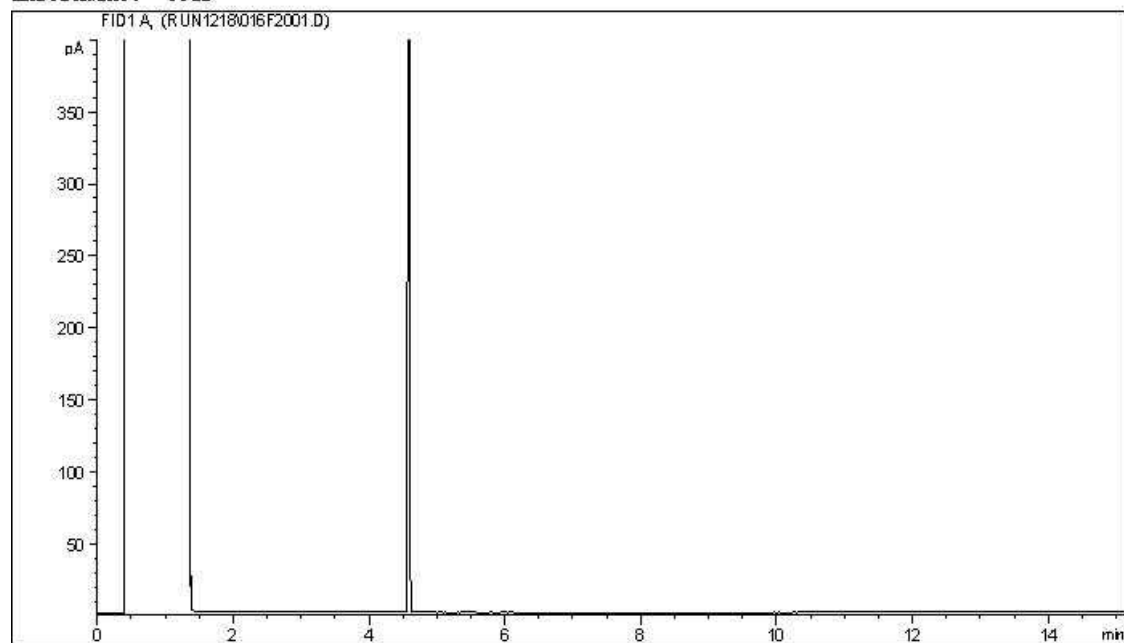
TYPICAL PRODUCT CARBON NUMBER RANGES

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

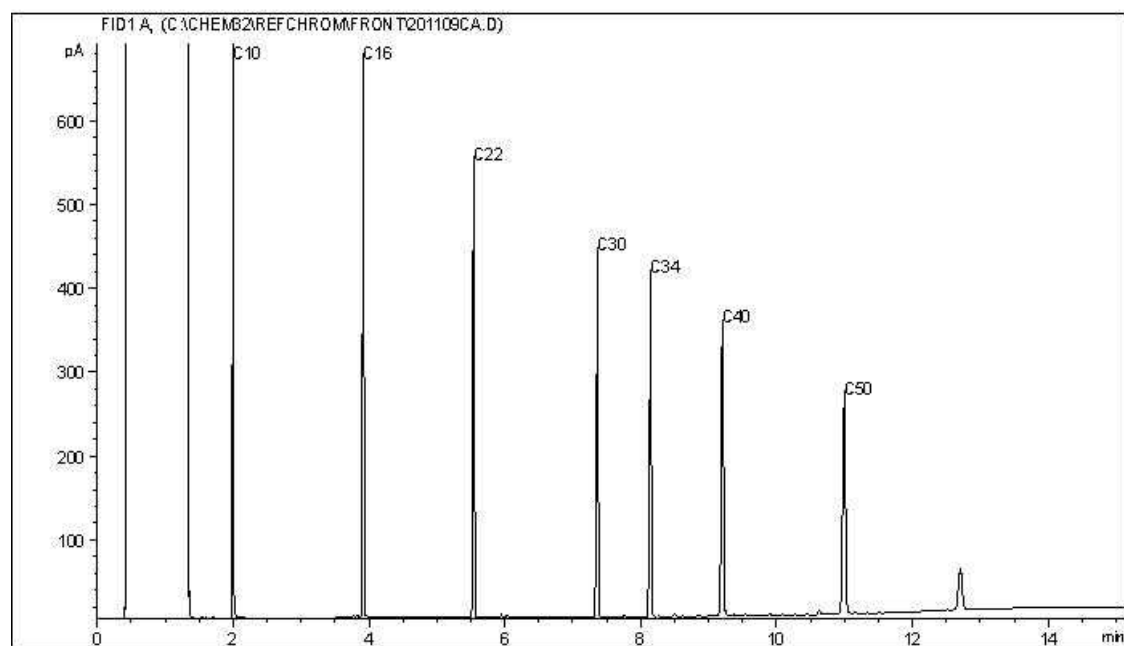
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



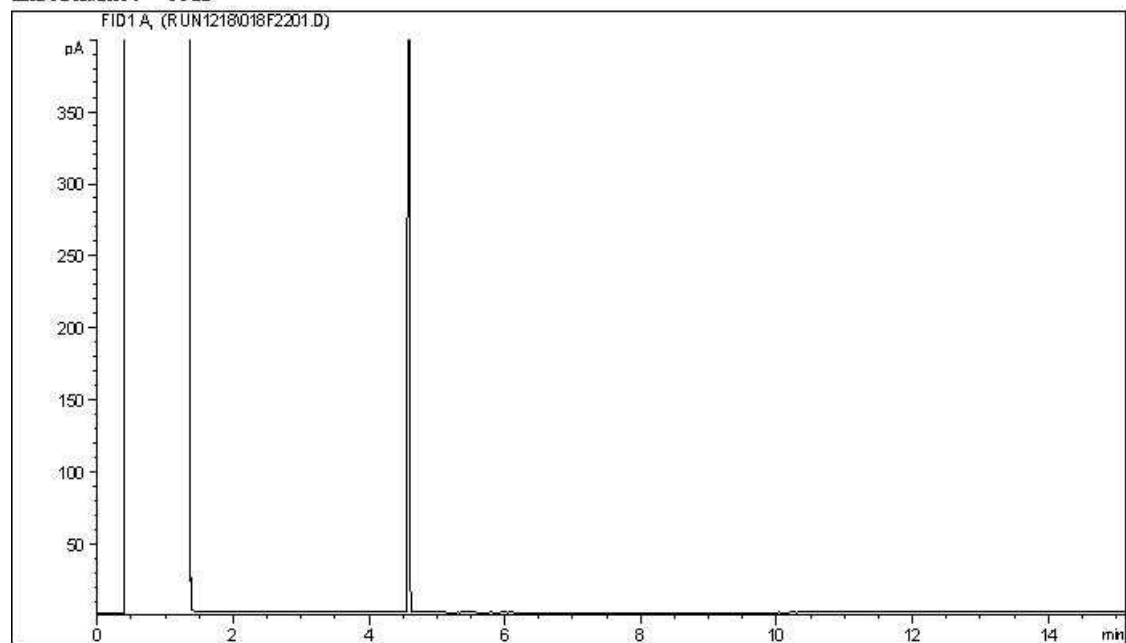
TYPICAL PRODUCT CARBON NUMBER RANGES

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

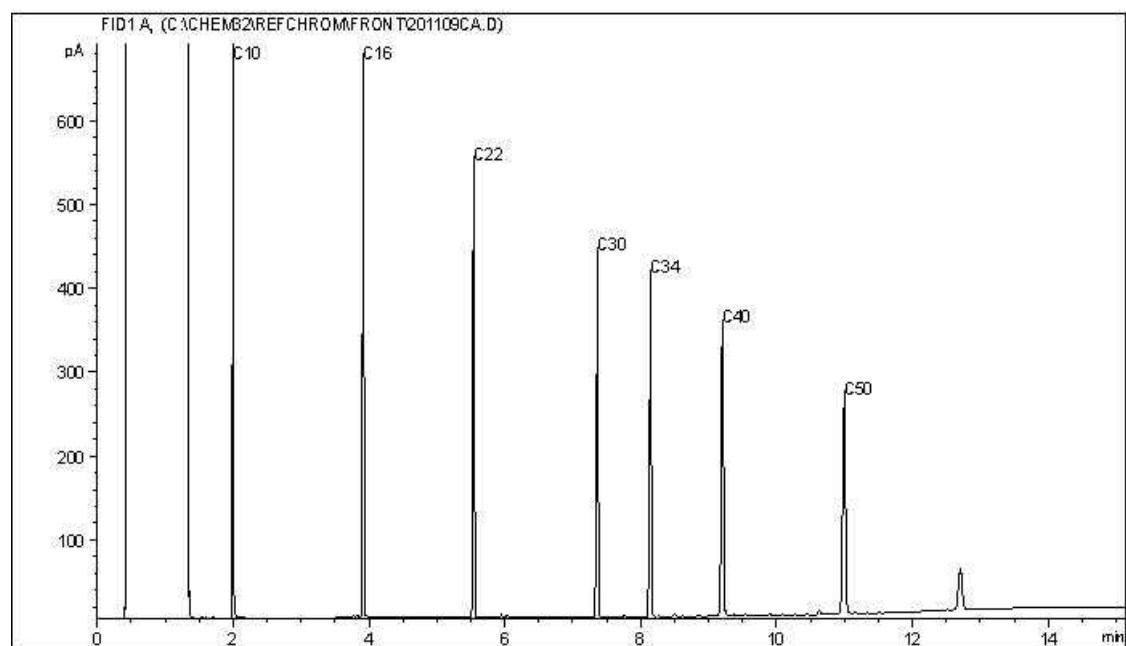
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



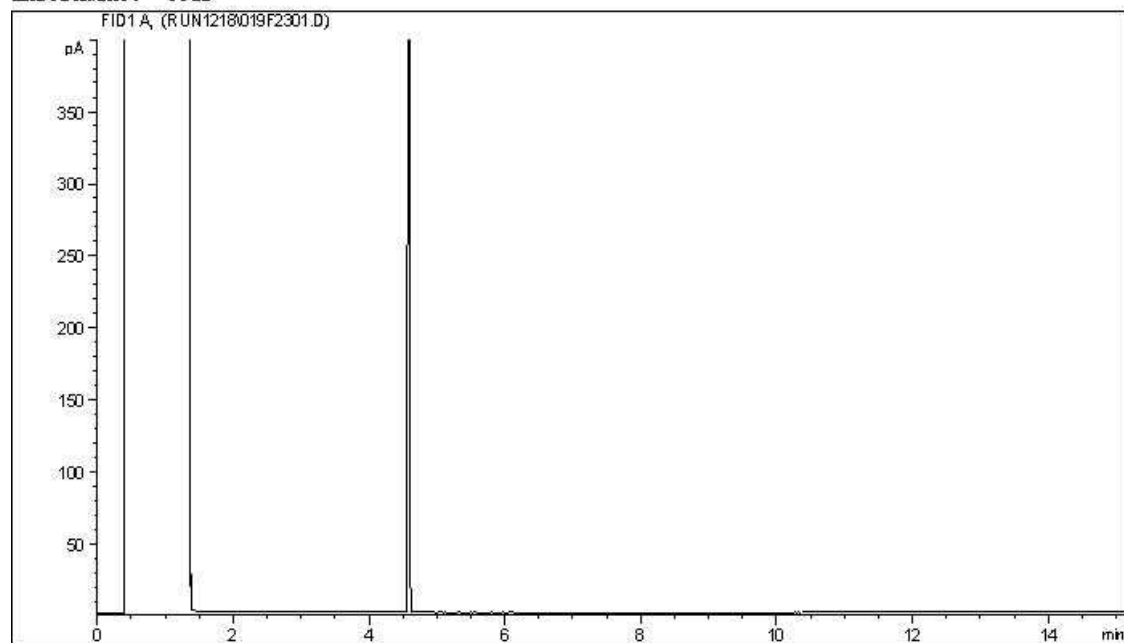
TYPICAL PRODUCT CARBON NUMBER RANGES

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

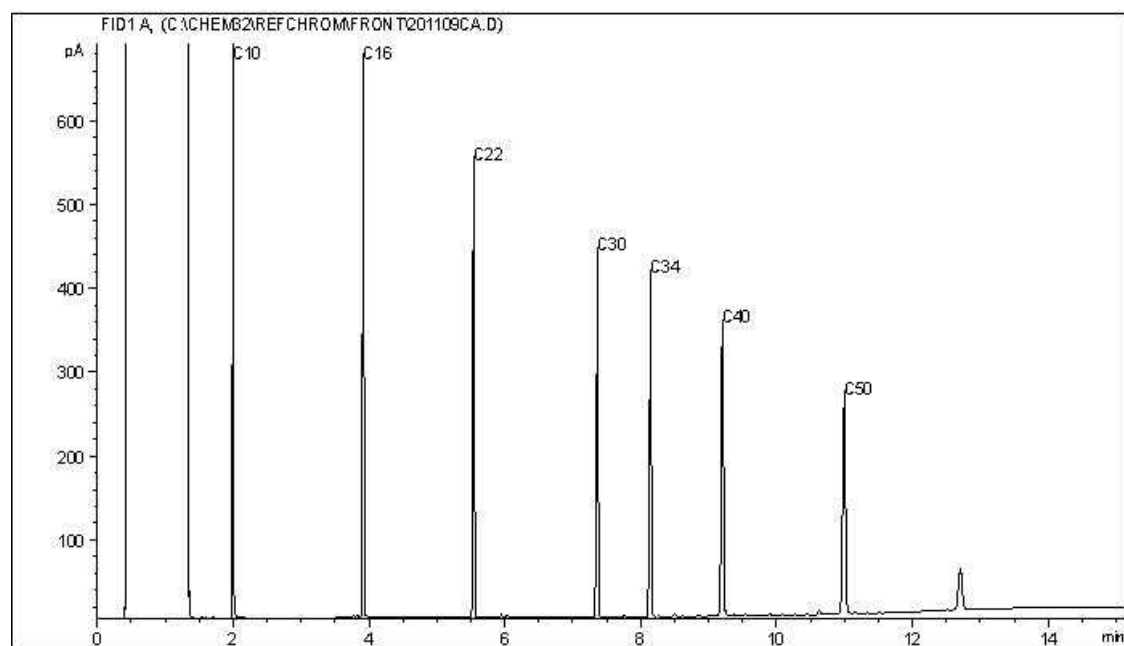
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



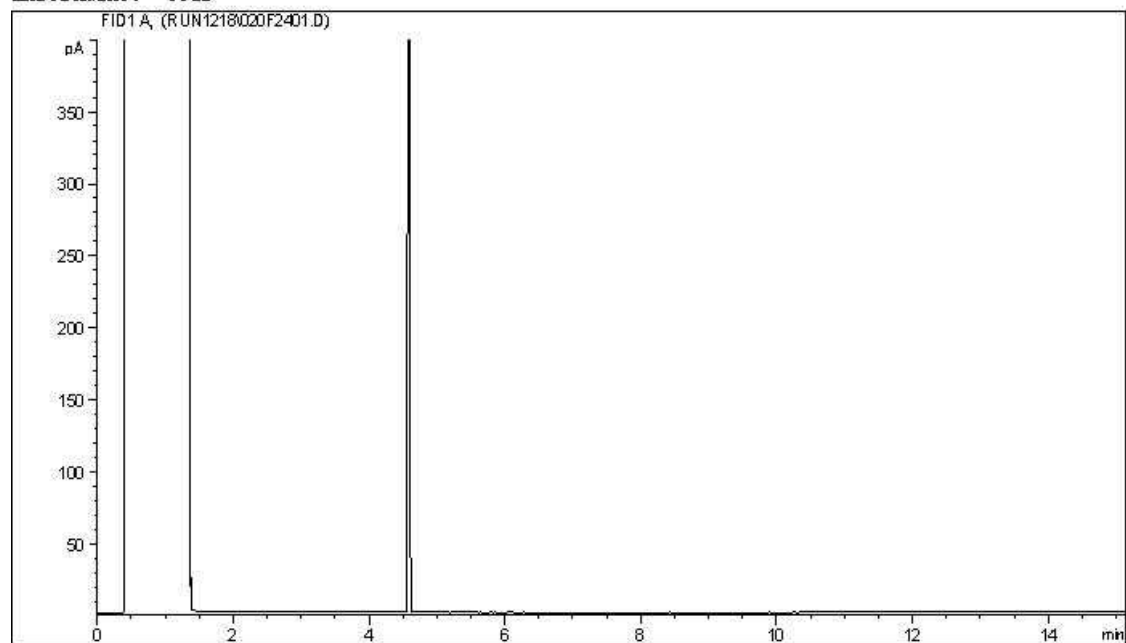
TYPICAL PRODUCT CARBON NUMBER RANGES

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

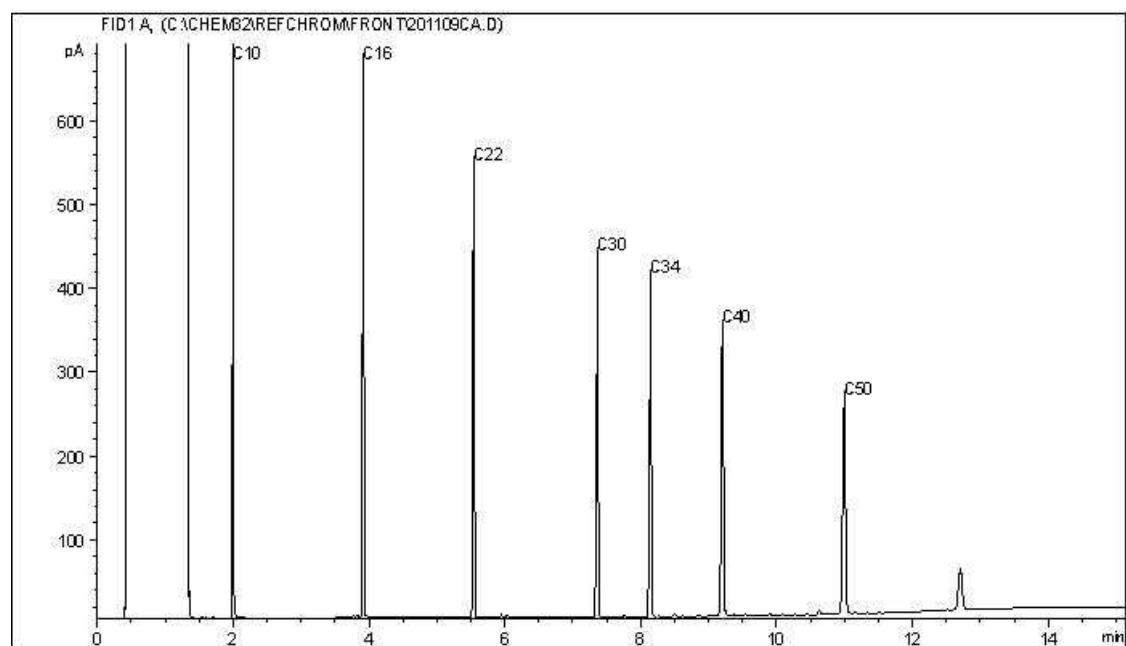
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



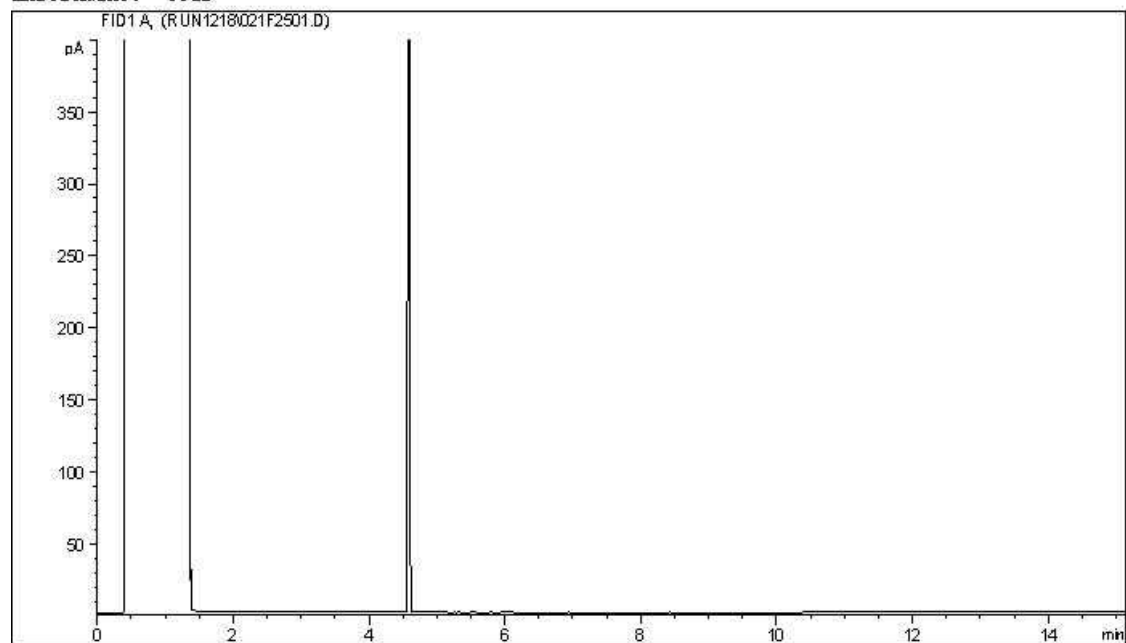
TYPICAL PRODUCT CARBON NUMBER RANGES

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

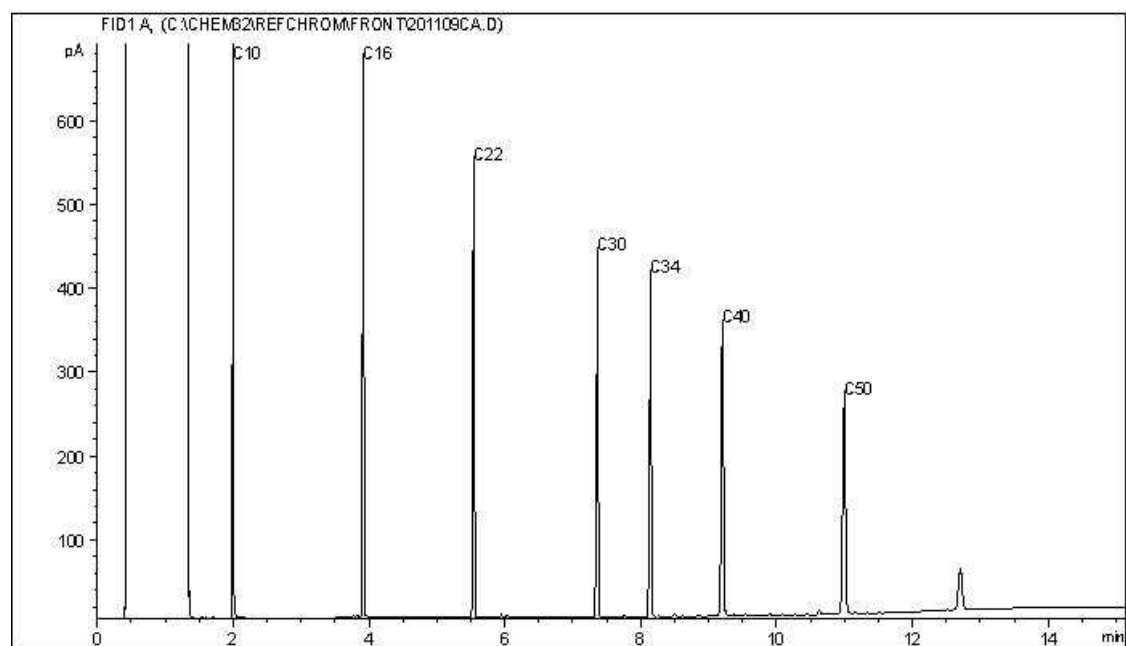
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



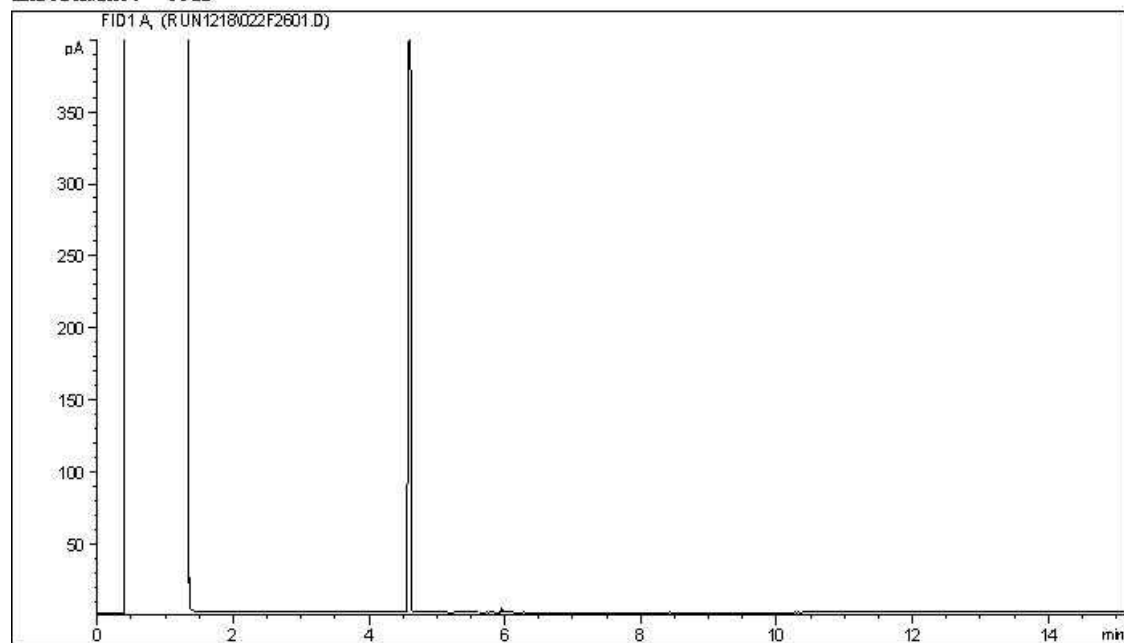
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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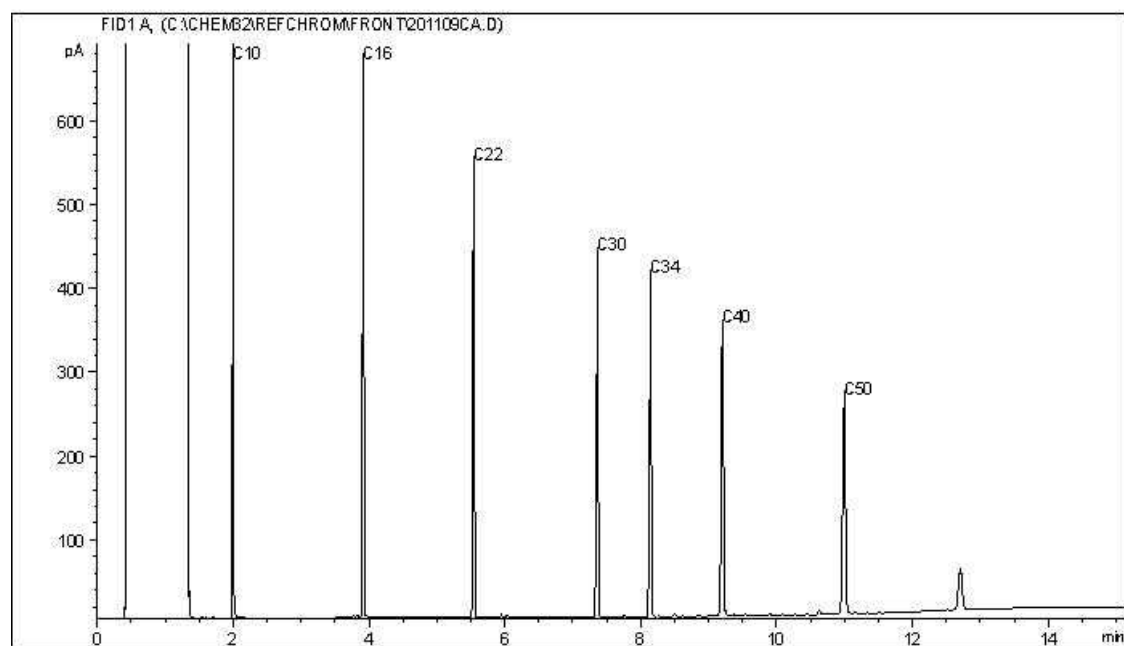
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC12



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+

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

References

Canadian Standards Association. (2000 Revised 2018). *Phase II Environmental Site Assessment*. CSA Z769.

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