



April 15, 2020

Inuvialuit Water Board  
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**Mr. Bijaya Adhikari**  
**Science and Regulatory Coordinator**

Dear Mr. Adhikari:

**Camp Farewell Remediation Program**  
**Annual Report 2019**  
**Water Licence N7L1-1834**

IEG Consultants Ltd. is pleased to submit the Camp Farewell Remediation Program, Annual Report 2019 on behalf of Shell Canada Energy in accordance with the requirements of Water Licence N7L1-1834.

Please contact Kyle Schepanow at (403) 648-4292 with any questions or comments.

Yours truly,  
**IEG CONSULTANTS LTD.**

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KS:SH:ap



# Shell Canada Energy

## Camp Farewell Remediation Program

*Annual Report 2019*  
*Water Licence N7L1-1834*

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## Camp Farewell Remediation Program

*Annual Report 2019*  
*Water Licence N7L1-1834*

## EXECUTIVE SUMMARY

Shell Canada Energy (Shell) retained IEG Consultants Ltd. (IEG) and Tervita Corporation (Tervita) to conduct a Remediation Program at Camp Farewell (the Site) located at latitude 69°12'30.0" N and longitude 135°06'04.4" W in the Mackenzie Delta, approximately 125 km northwest of Inuvik and approximately 135 km west of Tuktoyaktuk, Northwest Territories.

The 2019 Remediation Program included the preliminary screening, excavation, treatment, and backfilling of the impacted soil at the Site. The Program also included confirmatory soil sampling and analysis of excavated areas and treated soils. The field portion of the Remediation Program was conducted between June 28, 2019 and September 9, 2019. The conclusions and key findings of the 2019 Remediation Program are as follows:

- Shed #1 was dismantled and removed from the Site during the 2019 Remediation Program. The emergency shelter is the only remaining infrastructure at the Site and is intended to remain at the Site for use by the local community.
- Selected soil remediation criteria included a combination of the Government of Northwest Territories (GNWT) Residential/Parkland guidelines for petroleum hydrocarbons (PHCs) in surface soil and the proposed Site-Specific Risk Assessment (SSRA) criteria for soil  $\geq 0.6$  m below ground surface (bgs).
- An initial soil sampling program was conducted between July 1 and July 3, 2019 and indicated that surface soil in multiple areas of the Site contained concentrations of PHC parameters in exceedance of the GNWT Tier 1 guideline criteria.
- Soil was treated on-site using in-situ landfarming (rolling/aerating) and ex-situ (windrows and ALLU bucket aeration) methods.
- Soil was treated by landfarming (rolling/aerating the soil with a dozer) in two landfarming areas between July 4 and July 20, 2019. Confirmatory soil samples collected via a Dutch auger indicated that concentrations of xylenes,0 and PHC fractions F2 and F3 remained in exceedance of the applicable criteria at multiple test pit locations.
- Soil was excavated from five excavation areas and stockpiled on-site from July 4, 2019 to August 13, 2019. A total of approximately 9000 m<sup>3</sup> of soil was excavated during the program. Excavated soil was placed into windrows and treated with an ALLU bucket. Confirmatory soil samples collected from the excavation bases indicated that soils left in place  $\geq 0.6$  m bgs were less than the proposed SSRA criteria of 5000 mg/kg for F1 to F3 soil concentrations.
- Analytical data collected during the remediation program have indicated that residual soil PHC concentrations have been reduced as a result of landfarming and ALLU bucket aeration treatments. While there was an overall reduction in PHC concentrations, most of the treated surface soil did not meet the GNWT guidelines at the end of the program and requires further remediation.

- Excavated and treated soils were used to backfill excavation areas at the end of the 2019 Remediation Program. Surfaces were contoured to reduce potential hazards at the Site due to uneven ground and open excavations.
- Analytical results of the off-lease soil assessment conducted north of the lease boundary indicate that surface soils in an area north of the lease boundary contain PHC concentrations in exceedance of the GNWT Tier 1 guideline criteria. This area has not been horizontally delineated for PHC impacted soils.
- Updates to the groundwater monitoring network in 2019 included the repair of two existing wells (P06-01 and P06-7) and installation of four new monitoring wells (P19-2 and P19-4 through P19-6).
- Analytical results for groundwater samples collected in 2019 indicated exceedances of sulphate, nitrate, aluminum, arsenic, barium, cadmium, chromium, copper, iron, molybdenum, nickel, selenium, silver, zinc, benzene, toluene, and PHC fractions F1 and F2 at one or more monitoring wells.
- Groundwater exceedances of applied guidelines for PHC parameters were reported in samples from monitoring wells P19-2, P19-5, and P19-6.
- A total of 84 soil bags and eight sea-cans of polyurethane foam and other waste materials were excavated from the Site during the program. Waste materials (including an additional 348 soil bags stored on-site from 2018) were transferred to the Inuvik Solid Waste Disposal Facility (SWDF).
- Shell maintained compliance with Canadian Wildlife Services (CWS) Permit MM-NR-2019-NT-003 for the duration of the 2019 Remediation Program.
- Shell maintained compliance with Water Licence N7L1-1834 for the duration of the 2019 Remediation Program.

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## 1 INTRODUCTION

Shell Canada Energy (Shell) retained IEG Consultants Ltd. (IEG) and Tervita Corporation (Tervita) to conduct a Remediation Program at Camp Farewell (the Site) located at latitude 69°12'30.0" N and longitude 135°06'04.4" W in the Mackenzie Delta, approximately 125 km northwest of Inuvik and approximately 135 km west of Tuktoyaktuk, Northwest Territories (Figure 1). This factual report details the activities and findings of the Camp Farewell 2019 Remediation Program.

The 2019 Remediation Program included the preliminary screening, excavation, treatment, and backfilling of the impacted soil at the Site. The 2019 Remediation Program also included confirmatory soil sampling and analysis of excavated areas and treated soils. The field portion of the 2019 Remediation Program was conducted between June 28, 2019 and September 9, 2019.

### 1.1 Remediation Program Objectives

The overall objective for the ongoing remediation program at the Site is to address the residual hydrocarbon concentrations in soil and groundwater remaining at the Site due to historical activities. The primary objective of the 2019 Remediation Program was to assess the current levels of residual hydrocarbons in the soil at the Site and continue with on-site remedial treatment activities of impacted soils initiated in 2016. Additional key objectives for the 2019 Remediation Program included:

- excavation and removal of all polyurethane foam and waste (e.g., metal debris, buried waste) encountered within the planned excavation extents of the Site; and
- maintaining compliance with and meeting requirements of the applicable permits for the Site.

### 1.2 Scope of Work

The following scope of work was conducted by Tervita and IEG for the 2019 Remediation Program:

- logistics management and permitting;
- dismantling and removing the remaining storage building at the Site (Shed #1);
- conducting an initial screening soil sampling program to determine the residual hydrocarbon concentrations within shallow soil (< 0.6 m below ground surface [bgs]) at the Site;
- treating impacted soil identified during the screening program by either:
  - ◆ treating soil in-situ by rolling/aerating with a dozer; or
  - ◆ excavating, windrowing, and treating soil ex-situ by aeration with an ALLU bucket;
- removing and disposing of waste materials uncovered during excavation activities (i.e., polyurethane foam and debris) to the Inuvik Solid Waste Disposal Facility (SWDF);
- backfilling excavated areas with treated soil;

- grading the Site to manage on-site surface water flow and constructing a drainage ditch at the edge of the gravel pad to direct flow to natural drainage areas in the surrounding landscape;
- collecting soil samples, using a hand auger, north of the gravel pad to determine if soil impacts extend beyond the lease boundary;
- removing existing bollards from the shoreline (with the exception of one bollard to anchor the barge camp) and backfilling with local material (beach sand and clean fill from the lease);
- conducting maintenance on the groundwater monitoring well network, including installing new wells to replace damaged/destroyed wells and repairing existing wells, where required;
- conducting groundwater monitoring, including measuring groundwater elevations and collecting groundwater samples for laboratory analysis; and
- preparation of the Camp Farewell Remediation Program, Annual Report 2019.

IEG was responsible for conducting the following tasks within the overall scope of work:

- logistics management and permitting;
- conducting initial (screening) soil sampling;
- supervising the excavation of impacted soil;
- collecting confirmatory excavation, windrow, and test pit soil samples;
- assessing the condition of the current groundwater monitoring network, repairing existing wells and installing new groundwater monitoring wells;
- collecting GPS coordinates of monitoring wells, excavated areas, and Site features;
- supervising the backfill of treated soil into excavated areas; and
- preparing the Camp Farewell Remediation Program, Annual Report 2019.

## 2 SITE HISTORY

### 2.1 Site Construction History

Camp Farewell was constructed in the winter of 1970 and summer of 1971. The Site was operated as a staging and storage location to support Shell's Mackenzie Delta Drilling Program. The Site consisted of a self-contained camp, providing electrical and heating services, and facilities for accommodation, meals, fuel storage, equipment handling, water withdrawal, and wastewater storage.

The Site was constructed on permafrost, and based on its history, the preservation of this layer was taken into account during construction. During construction, a layer of polyurethane (either 50 mm foam or pads) was installed, including 450 mm of compacted gravel, to act as a thermal barrier and to prevent potential contamination of the underlying soils and groundwater.

### 2.2 Spill History

Approximately 800,000 litres of water impacted with diesel fuel was released from the tank farm in 1981, according to records in the Government of Northwest Territories (GNWT) Hazardous Spills Database. Investigation suggests the spill was a result of vandalism/theft that occurred in the winter of 1980/1981, resulting in the spring release of the water and diesel from the tank farm, which was reported to the authorities on May 24, 1981. Released fluids overtopped the berm and due to Site topography, flowed towards the southwest, over the steep banks of the Site, and onto the frozen Mackenzie River (WorleyParsons 2011).

Additional detail regarding the actual spill and clean-up efforts is provided in the Komex report titled *"Phase I and Phase II Environmental Site Assessment of the Shell Farewell Stockpile and Campsite"* (Komex 2001).

### 2.3 Previous Environmental Investigations

Multiple environmental investigation programs, remediation programs, and other investigations have been conducted at the Site since 2001. Additional detail regarding historical programs at the Site is provided in the IEG 2019 report titled *"Camp Farewell Remediation Program, Annual Report 2018"* (IEG 2019a).

### 3 PROGRAM LOGISTICS AND PERMITTING

IEG and Shell obtained permits and licenses prior to commencement of the 2019 Remediation Program. The following sections provide information on each permit or licence. Copies of the permits and licenses are provided in Appendix I.

#### 3.1 Environmental Impact Screening

Given the similar scope of work, IEG conducted the 2019 Remediation Program under the same Environmental Impact Screening Committee (EISC) approval as the 2018 field program. IEG contacted the EISC on March 5, 2019 to request an amendment extending the timeline of previously screened file, 05-18-01, which gave approval for the 2018 remediation program. The EISC determined that the requested amendment did not require additional environmental impact screening and approved the request on March 25, 2019. The approval to proceed with the 2019 Remediation Program was subject to the terms and conditions provided in the original decision letter dated June 12, 2018.

#### 3.2 Water Licence

Shell holds Water Licence N7L1-1834 (granted on July 18, 2012) which allows for the use of water and disposal of waste as an industrial undertaking associated with oil and gas exploration at the Camp Farewell site. The Licence was amended on July 18, 2017 to extend the expiry date to July 17, 2029. The Licence was again amended on June 6, 2019 to allow withdrawal of water from the Middle Channel of the Mackenzie River during summer activities for use as a potable water source in the barge camp at the Site. Approval was received from the Inuvialuit Water Board Water Resources Officer on June 6, 2019. The amendment approval notice and Water Licence are included in Appendix I.

The reporting requirements listed in Water Licence N7L1-1834 are included in Appendix II.

#### 3.3 Migratory Birds Sanctuary Permit

The Site lies within the Kendall Island Bird Sanctuary (KIBS) under the jurisdiction of Environment Canada. A Canadian Wildlife Service (CWS) Migratory Birds Sanctuary (MBS) permit is required to enter and conduct work within the KIBS and is renewed each year. The CWS permit issued for the 2019 Remediation Program (MM-NR-2019-NT-003) was issued on June 1, 2019 and expired on December 31, 2019. A condition of the CWS MBS permit is the submission of an annual report. The 2019 report was submitted to CWS on December 23, 2019 to maintain compliance with the permit.

## 4 REMEDIATION PROGRAM METHODS

During the 2019 Remediation Program, Tervita was the prime contractor on-site managing and directing site activities, as well as coordinating logistical and safety aspects of the program. Tervita contracted Mackenzie Delta Integrated Oilfield Services (MDIOS) to provide equipment, operations support, and personnel for the remediation activities. IEG provided environmental supervision and collected confirmatory soil samples from excavations and windrows of treated soil.

The following sections describe remediation activities conducted by Tervita, MDIOS, and IEG in 2019. Site photographs are provided in Appendix III. A site plan is shown on Figure 2.

### 4.1 Camp Mobilization/Demobilization

A barge camp was mobilized to the Site from Inuvik on June 28, 2019 via the Mackenzie River. The barge camp was stationed at the existing barge landing area and anchored to existing bollards located along the shoreline adjacent to the Site (Appendix III, Photo 1). The barge was operated and maintained by a barge master for the duration of site activities. Wastewater from the barge was disposed of in Inuvik. On September 9, 2019, the barge was demobilized from the Site via the Mackenzie River.

### 4.2 Infrastructure Decommissioning and Removal

Shed #1 was the only remaining infrastructure on-site that required removal after the decommissioning program in 2015 was completed at the Site. Decommissioning and removal of Shed #1 was conducted by MDIOS under the supervision of Tervita from June 30, 2019 to July 5, 2019. The decommissioning process began with the removal of materials, waste bags, and equipment that had been stored in the shed over the winter. Once the shed was empty, it was dismantled and disassembled using a picker truck (Appendix III, Photo 2). The disassembled pieces of the shed were loaded onto a barge and transferred to Inuvik, where the shed is to be reassembled for reuse by MDIOS at an alternate location. Former infrastructure at the Site is shown on Figure 2.

The emergency shelter remains at the Site and will be left intact for use by the local community (e.g., as an emergency shelter during a hunting expedition).

### 4.3 Initial Screening Soil Sampling

The initial screening sampling soil program was conducted between July 1 and 3, 2019 by IEG. During the screening program, 121 boreholes were advanced using a handheld Dutch auger to a maximum depth of 0.6 m bgs. Boreholes were advanced in an approximately 25 m by 25 m grid across the Site in areas that had been previously excavated during the 2016 and 2018 remediation programs. Soil samples were collected from the 0-0.3 m bgs and 0.3-0.6 m bgs intervals and submitted for laboratory analysis. The reported analytical data in Table 1 (Appendix IV) was used to develop a remediation strategy for the treatment of soils at the Site in 2019.

The coordinates of each borehole location were measured and recorded using a Trimble GPS. The equipment used provides real time measurement of position and elevation with a positional accuracy

of less than 1 m (generally less than 0.5 m) and less than 2 m in elevation. The coordinates were recorded in UTM NAD 83 (Zone 8N). Pre-treatment screening borehole locations are presented on Figure 3.

#### 4.4 Soil Landfarming, Excavation and Windrows

Soil at the Site was treated either by ex-situ methods that included excavation, windrowing, and treatment with an ALLU bucket excavator attachment or in-situ treatment via landfarming (rolling/aerating the soil with a dozer).

Soil was treated via landfarming in two areas (North Landfarming Area and East Landfarming Area) and excavated from five areas of the Site (Excavation #1 through Excavation #5) and placed in windrows for ex-situ treatment with an ALLU bucket (Appendix III, Photo 3). Land farming activities extended to a depth of 0.6 m bgs. Excavations were conducted to a minimum depth of 0.6 m bgs until permafrost was encountered, or until excavated soil samples confirmed that the excavation base met the applicable criteria. The treatment areas (landfarming and excavation areas) are shown on Figure 3. Windrow locations are shown on Figure 4.

#### 4.5 Confirmatory Soil Sampling

The following confirmatory soil sampling was conducted during the 2019 Remediation Program:

- 54 samples were collected from 27 test pit locations in the north and east landfarm areas following rolling/aeration treatment of the soil with a dozer;
- 91 discrete confirmatory soil samples were collected from excavation bases on an approximately 20 m by 20 m grid from each of the excavations; and
- 171 composite soil samples were collected from the windrows.

Soil samples were placed into laboratory-provided 125 mL clear glass jars for analysis. Terra Core® Samplers were used to collect a 10 mL sample directly from the auger barrel for placement into a Volatile Organic Analysis (VOA) vile containing 40 mL of methanol as a preservative.

Samples were transported to Inuvik in an ice-chilled cooler and then transported to AGAT Laboratories (AGAT) in Edmonton, Alberta via Canadian North Cargo for laboratory analysis under standard chain-of-custody protocol. Analytical results from the sampled soils are included in Appendix IV.

The coordinates of each excavation and landfarm soil sample location were measured and recorded using a Trimble GPS. Landfarm confirmatory soil sample locations are presented on Figure 5. Excavation base confirmatory soil sample locations are presented on Figure 6.

#### 4.6 Off-Lease Soil Assessment

Based on elevated hydrocarbon concentrations in confirmatory soil samples along the northern lease boundary, results of historical drilling investigations were reviewed, and it was determined that there was insufficient data to confirm whether impacts may extend off-lease along the northern lease

boundary near the former tank farm area. Approval was obtained from both CWS and GNWT Department of Lands to proceed with a limited off-lease handheld Dutch auger sampling program to delineate the northern extent of hydrocarbon impacts, and determine whether off-lease impacts were present. Emailed approval from GNWT Department of Lands and CWS for the off-lease sampling program is included in Appendix I.

The off-lease soil assessment was conducted on August 6 and 8, 2019. During the assessment, 14 boreholes were advanced using a handheld Dutch auger to a maximum depth of 0.45 m bgs. The six boreholes advanced on August 6, 2019 were located on the lease, but north of the vegetation boundary and active treatment areas. The eight boreholes advanced on August 8, 2019 were located in a vegetated area north of the lease boundary in the vicinity of the former tank farm. The off-lease soil assessment borehole locations are presented on Figure 5.

#### 4.7 Soil Analytical Schedule

Previous assessments established that the contaminants of concern (COCs) at the Site were petroleum hydrocarbon (PHCs) that included benzene, toluene, ethylbenzene, and xylenes (BTEX), and PHC fractions F1 to F4. Soil samples were analyzed for the identified PHC parameters.

Where it was hypothesized that naturally occurring hydrocarbons in organic materials at the Site (i.e., peat) may have resulted in a false PHC guideline exceedance, the potentially affected samples were submitted for further analysis for subfractions “PHC F3a” and “PHC F3b”. PHC F3 subfraction results were interpreted using the Biogenic Interference Calculation (BIC) Scale. Detailed information regarding natural hydrocarbons and use of the BIC Scale is provided in the IEG 2019 report titled “*Camp Farewell Remediation Program, Annual Report 2018*” (IEG 2019a).

#### 4.8 Waste Removal

Waste materials uncovered during excavation activities (i.e., polyurethane foam and other miscellaneous debris) were placed into either 1 m<sup>3</sup> soil bags or sea-cans for appropriate offsite disposal. Polyurethane foam was manually removed from the excavation by MDIOS laborers and was separated from other uncovered waste materials. Waste materials encountered in 2019 that varied from materials previously encountered at the Site, as well as their management, are further described in Section 7.2.2. Packed soil bags were loaded onto barges (Appendix III, Photo 4) and removed from the Site for transfer to the Inuvik Solid Waste Disposal Facility (SWDF).

#### 4.9 Backfilling

Prior to demobilization from the Site, treated and stockpiled soil was backfilled into the excavated areas across the Site. After backfilling, the Site was graded and contoured to reflect the natural topography. A drainage ditch was constructed at the edge of the gravel pad to direct surface water flow to natural drainage areas in the surrounding landscape (Appendix III, Photo 5; Figure 7).

Prior to backfilling, the excavation extents and general locations of the placement of the backfilled windrow soil were recorded via GPS so that surface soils that may require further treatment can be

located and reassessed during future monitoring and/or remediation programs. The placement of the treated windrowed soil within the excavation extents is shown in Figure 7.

#### 4.10 Quality Assurance and Quality Control

The quality assurance and quality control (QA/QC) program included field sampling methods and laboratory QA/QC protocols. Chain of custody (COC) procedures were followed throughout the sampling program. COC forms were provided by AGAT and filled out by IEG personnel for each sample delivered to the laboratory.

AGAT is an ISO/IEC 17025 accredited laboratory and has internal QA/QC protocols and procedures to assess the accuracy and consistency of results. These procedures include COC tracking, storage and holding times, instrument calibration, surrogate matrix spikes, blanks, and laboratory duplicates. Laboratory quality assurance reports and analytical methods are presented in Appendix V.

For quality assurance purposes, 29 replicate soil samples were collected for analysis of PHC parameters during the 2019 Remediation Program. The purpose of replicate samples was to assess the consistency in the analytical results that the laboratory produces. Large variances between replicate results and the original sampling results could indicate errors in the testing process conducted by the laboratory. Variances in results are investigated further with the laboratory.

The soil quality assurance and quality control (QA/QC) protocol is provided in Appendix VI.



## 5 GROUNDWATER MONITORING PROGRAM METHODS

### 5.1 Existing Monitoring Well Network Assessment and Repair

On August 19, 2019, the seven groundwater monitoring wells included in the historical monitoring network were assessed at the Site. Monitoring well conditions were documented and are summarized in Table 5.1. The monitoring well locations are presented on Figure 8.

**Table 5.1 Groundwater Monitoring Network and Current Conditions**

| Area of Investigation   | Well ID | Northing | Easting | 2015 Status  | 2019 Status   |
|-------------------------|---------|----------|---------|--|---|
| Airstrip                | P06-1   | 7677973  | 496046  | Exceedances of TDS, aluminum, cadmium, and iron          | Monitoring well has sheared off at ground surface, but is intact below ground |
|                         | P06-2   | 7677869  | 496374  | Exceedances of cadmium and copper                        | Monitoring well is intact   |
| Burn Pit                | P06-3   | 7677675  | 496213  | Exceedances of TDS, cadmium, iron, and naphthalene       | Monitoring well not found, assumed destroyed                                  |
| Laydown/ Storage        | P06-4   | 7677583  | 496064  | Monitoring well was dry at time of assessment            | Monitoring well is intact, but was dry at time of assessment                  |
|                         | P06-5   | 7677549  | 496006  | Monitoring well did not recharge prior to sampling event | Monitoring well not found, assumed destroyed                                  |
| Fuel Tank/ Camp/ Lagoon | P06-6   | 7677661  | 495825  | Monitoring well did not recharge prior to sampling       | Monitoring well is intact   |
| Tank Farm               | P06-7   | 7677725  | 495829  | Exceedances of aluminum, cadmium, iron, and selenium     | Monitoring well has sheared off at ground surface, but is intact below ground |

Monitoring wells P06-01 and P06-7 were repaired on August 20, 2019 using available supplies at the Site. Well P06-7 was extended with a coupler and solid polyvinyl chloride (PVC) pipe. Lockable well caps were added to both P06-01 and P06-7.

### 5.2 Groundwater Monitoring Well Installation and Development

In accordance with IEG's standard field procedures, four groundwater monitoring wells were installed in boreholes P19-2, and P19-4 through P19-6 to replace missing/destroyed monitoring wells and expand the monitoring well network. Monitoring wells were not installed at locations P19-1 and P19-3. P19-1 was located to the northwest of the former tank farm area. The borehole was terminated at 0.4 m bgs due to frost. P19-3 was located along the southeast ridge of the Site and due to the natural drainage of the slope, no groundwater was encountered in the borehole prior to auger refusal and termination of the borehole.

Monitoring wells were constructed of 51 mm diameter Schedule 40 polyvinyl chloride (PVC) pipe and 0.25 mm width (10 slot) machine slotted PVC. A 10-20 grade silica sand pack was used around the well screen as a filter pack. The annulus above the sand filter pack was sealed with hydrated bentonite chips. Monitoring well installation details are included on the borehole logs provided in Appendix VII.

Monitoring well development was conducted using 1.6 cm (5/8") diameter low density polyethylene (LDPE) Waterra™ tubing fitted with an inertial pump. Monitoring wells were developed using industry standard methods and purged water was monitored for water quality parameters and visually inspected for turbidity.

Elevations of the ground surface or top of PVC casing of the groundwater wells were not surveyed during the 2019 Remediation Program. Monitoring wells will be surveyed during a future field program at the Site to measure the elevation of the monitoring wells referenced to mean sea level.

## 5.1 Groundwater Monitoring and Sampling

Groundwater levels were measured on August 19 and 21, 2019. Groundwater water levels were measured as depths relative to ground surface and the top of the PVC well pipe using a Solinst interface probe capable of measuring depths to water and non-aqueous phase liquids (NAPL).

Groundwater samples were collected from the following monitoring wells after well development: P06-6, P06-7, P19-2, P19-4, P19-5, and P19-6. P06-4 was dry at the time of monitoring and no sample was collected. Groundwater samples were not collected from the airstrip wells during this sampling event, because the area had recently been released from the current Camp Farewell Lease Area by the GNWT Department of Lands. At the time of sampling, groundwater from each monitoring well was field measured for physiochemical parameters that included temperature, pH, electrical conductivity (EC), oxidation/reduction potential (ORP), dissolved oxygen (DO), and total dissolved solids (TDS) using a YSI handheld multi-parameter water quality meter.

Groundwater samples were extracted from the wells using LDPE sample bailers and collected in laboratory supplied sterile bottles and stored in a cooler with ice to preserve sample integrity. Samples were transported to Inuvik in an ice-chilled cooler and then transported to AGAT in Edmonton, Alberta via Canadian North Cargo for laboratory analysis under standard chain-of-custody protocol. Purged groundwater volumes were typically small and disposed of on-site.

## 5.2 Groundwater Analytical Schedule

Groundwater samples collected from the monitoring wells were sampled for the following parameters:

- routine potability parameters including: pH, EC, sodium adsorption ratio (SAR), total alkalinity, hardness, TDS, bicarbonate, carbonate, hydroxide, fluoride, chloride, sulphate, calcium, magnesium, sodium, potassium, manganese, nitrate (as nitrogen), nitrite (as nitrogen), nitrate + nitrite (as nitrogen), and ionic balance;
- dissolved metal parameters including: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, molybdenum, nickel, selenium, silver, thallium, uranium, and zinc; and
- PHC parameters including BTEX and PHC fractions F1 to F2.

### 5.3 Quality Assurance and Quality Control

For quality assurance purposes, one duplicate sample was collected from monitoring well P19-5 (labeled DUP1) during the August 2019 sampling event and submitted for analysis of routine potability parameters. The purpose of the duplicate sample was to assess the consistency in the analytical results that the laboratory produces. Large variances between duplicate results and the original sampling results could indicate errors in the testing process conducted by the laboratory. Variances in results are investigated further with the laboratory.

The groundwater QA/QC protocol is provided in Appendix VI.

## 6 REGULATORY FRAMEWORK

### 6.1 Soil

Surface soil (<0.6 m bgs) analytical results were compared to the GNWT *Environmental Guideline for Contaminated Site Remediation* (GNWT 2003). The selected guideline was based on Tier 1 criteria, coarse-grained surface soils, and the Residential/Parkland land use category for PHC constituents (BTEX and PHC fractions F1 to F4).

Subsurface soil (≥0.6 m bgs) analytical results were compared to the Site-Specific Risk Assessment (SSRA) recommendation of a combined total concentration of 5000 mg/kg of PHC fractions F1 to F3 in subsurface soils (GPRA 2018).

A summary of the applicable guidelines and limiting pathways for surface and subsurface soils at the Site are provided in Table 6.1.

**Table 6.1 Applicable Assessment Guidelines and Exposure Pathways for Soil at the Site**

| Parameter                           | Guideline (mg/kg) | Land Use/Grain Size/Limiting Pathway                                    |
|-------------------------------------|-------------------|---|
| <b>Surface Soil (&lt;0.6 m bgs)</b> |                   |   |
| Benzene                             | 0.5               | Residential/Parkland  |
| Toluene                             | 0.8               | Residential/Parkland  |
| Ethylbenzene                        | 1.2               | Residential/Parkland  |
| Xylenes                             | 1                 | Residential/Parkland  |
| F1                                  | 130               | Residential, Coarse-Grained, Ecological Soil Contact                    |
| F2                                  | 150               | Residential, Coarse-Grained, Protection of Groundwater for Aquatic Life |
| F3                                  | 400               | Residential, Coarse-Grained, Ecological Soil Contact                    |
| F4                                  | 280               | Residential, Coarse-Grained, Ecological Soil Contact                    |
| <b>Subsurface Soil (≥0.6 m bgs)</b> |                   |   |
| F1-F3 total                         | 5000              | Proposed SSRA Criteria  |

Information used to determine the applicable assessment guidelines and exposure pathways for soil at the Site is described in further detail in the IEG 2019 report titled “*Camp Farewell Remediation Program, Annual Report 2018*” (IEG 2019a).

### 6.2 Groundwater

In the absence of specific groundwater quality guidelines for the Northwest Territories, groundwater analytical results were compared to the Government of Canada *Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites* (GoC 2010). The selected guidelines were based on Tier 1 criteria, coarse-grained soil, and the Residential/Parkland land use category for PHC constituents (BTEX and PHC fractions F1 to F2).

## 7 REMEDIATION PROGRAM RESULTS

### 7.1 Initial Screening Soil Sampling Program

Laboratory analytical results of samples collected from initial screening boreholes indicated that 37 out of 121 boreholes contained one or more soil samples that exceeded the GNWT Tier 1 guideline criteria. PHC parameters exceeding the criteria included concentrations of toluene, xylenes, and PHC fractions F2 and F3. A summary of the exceeding PHC concentrations is provided below:

- toluene concentrations exceeding the applicable criteria (0.8 mg/kg) ranged from 0.87 mg/kg (BH19-114 at 0.3-0.6 m bgs) to 7.09 mg/kg (BH19-078 at 0.3-0.6 m bgs);
- xylenes concentrations exceeding the applicable criteria (1 mg/kg) ranged from 2.26 mg/kg (BH19-003 at 0.3-0.6 m bgs) to 6.95 mg/kg (BH19-117 at 0.3-0.6 m bgs);
- PHC fraction F2 concentrations exceeding the applicable criteria (150 mg/kg) ranged from 160 mg/kg (multiple boreholes) to 6650 mg/kg (BH19-002 at 0.3-0.6 m bgs); and
- PHC fraction F3 concentrations exceeding the applicable criteria (400 mg/kg) ranged from 410 mg/kg (multiple boreholes) to 5790 mg/kg (BH19-002 at 0.3-0.6 m bgs).

Boreholes with exceedances of the GNWT Tier 1 guideline criteria were generally located along the northern portion of the lease, with a smaller area of exceedances in the southeast portion of the lease, and a second smaller area of exceedances in the southwest portion of the lease. The borehole locations with results exceeding the applicable criteria are presented on Figure 3. The soil analytical results are summarized in Table 1 (Appendix IV).

Laboratory analytical results from the sampling program were used to determine the residual concentrations of PHC parameters remaining at the Site and prioritize areas of the Site for remedial treatment during the 2019 Remediation Program. In the absence of other PHC parameter exceedances, boreholes with solely PHC fraction F3 exceedances were evaluated using the BIC Scale. The BIC Scale evaluation was used to indicate F3 exceedances that were a result of naturally organic materials.

### 7.2 Selection of Treatment Areas and Treatment Results

#### 7.2.1 North and East Landfarming Areas

Treatment in the North Landfarming Area and East Landfarming Area was initiated on July 4, 2019, prior to receiving laboratory analytical results from the pre-treatment screening soil sampling. Landfarming areas were selected based on known backfill locations of windrows with soil samples exceeding the applicable criteria at the end of the 2018 remediation program. Once available, the initial screening soil sampling program results were reviewed, and the results confirmed that PHC parameter exceedances documented in 2018 remained in the surface soils in these areas. The North Landfarming Area did not extend to the vegetation boundary, because localized ponding had developed in this area, resulting in the soil being too saturated for equipment to access the area at the start of the program. Materials in this area were given time to dry out prior to excavation and treatment. The North Landfarming Area was approximately 0.7 ha in size, and the East Landfarming

Area was approximately 0.8 ha in size. Surface soils in each landfarming area were treated in-situ to a depth of 0.6 m bgs. The landfarming areas are shown on Figure 3.

After the materials in each landfarming area were treated via rolling/aerating with a dozer and spread back out within the treatment area, soils were reassessed via sampling with a Dutch auger at the same depths as pre-treatment soil samples (0-0.3 m bgs and 0.3-0.6 m bgs). Test pits TP19-007 through TP19-020 were advanced within the East Landfarming Area on July 13, 2019. Soil analytical results from the confirmatory test pits indicated that concentrations of PHC fractions F2 and F3 were still slightly elevated compared to the applicable criteria at multiple test pit locations.

Test pits TP19-024 through TP19-036 were advanced within the North Landfarming Area on July 21, 2019. Soil analytical results from the confirmatory test pits indicated that concentrations of xylenes, and PHC fractions F2 and F3 remained in exceedance of the applicable criteria at multiple test pit locations.

Soil analytical results from confirmatory test pits are summarized in Table 2 (Appendix IV). Confirmatory test pit locations are presented on Figure 5.

### 7.2.2 Excavation Areas

During the 2019 Remediation Program, approximately 1.4 ha was excavated to a minimum depth of 0.6 m bgs, or until confirmatory soil samples collected from the base of the excavation confirmed that soils left in place  $\geq 0.6$  m bgs were less than the proposed SSRA criteria. Where confirmatory samples collected at 0.6 m bgs did not meet the SSRA criteria, the area was re-excavated and re-sampled at the new excavation base depth. Excavated materials were added to windrows for ex-situ treatment. Excavation areas are shown on Figure 4. Based on the reported analytical results, there were no excavation base samples that exceeded the proposed SSRA criteria at the completion of the 2019 Remediation Program.

Soil analytical results from confirmatory excavation base samples are summarized in Table 3 (Appendix IV). Locations of all confirmatory excavation base samples are shown on Figure 6. Confirmatory excavation base samples presented in Table 3 and Figure 6 include base samples collected along the southern edge of the Site via test pitting with an excavator, in an area not excavated during previous remediation programs. Where these base samples met the SSRA criteria and no waste (e.g., polyurethane foam) was encountered, no additional excavation was conducted.

Treatment in each excavation area is described in further detail in the following subsections.

#### Excavation #1

Excavation #1 was initiated prior to receiving laboratory analytical results from the initial screening soil sampling program, in the vicinity of a 2018 remediation program confirmatory excavation base sample that exceeded the SSRA criteria (EX18-161). This area was excavated to a depth of 1 m bgs and confirmatory excavation base samples EX19-001 through EX19-005 were collected on July 4, 2019 in the area surrounding the EX18-161 sample that exceeded the SSRA criteria. The confirmatory excavation base samples analyzed in 2019 met the SSRA criteria.

Following receipt of the initial screening soil sampling program analytical results, Excavation #1 was expanded to include the area encompassing pre-treatment boreholes BH19-046 and BH19-047. This area was excavated to a depth of 0.6 m bgs and confirmatory excavation base samples EX19-057 through EX19-061 were collected on July 28, 2019. The confirmatory excavation base samples met the SSRA criteria.

### Excavation #2

Following removal of Shed #1 and prior to excavation, test pits TP19-001 through TP19-006 were advanced with an excavator on July 6, 2019. Test pits were located at the four shed corners, and in the centers of the east and west portions of the previous shed location. Test pit analytical results indicated that concentrations of PHC fractions F2 and F3 in surface soils in the vicinity of the former shed location exceeded the GNWT criteria. Test pit analytical results are provided in Table 2 (Appendix IV) and test pit locations are presented on Figure 5.

Excavation #2 was initiated in the vicinity of the decommissioned Shed #1 prior to receiving initial screening soil sampling analytical results, and subsequently expanded to include the area encompassing boreholes BH19-105 and BH19-106 (Figure 3) once the analytical data was reviewed. Excavation #2 was advanced to a depth of 0.6 m bgs, and confirmatory excavation base samples collected between July 9 and 20, 2019 indicated that the excavation base met the SSRA criteria, with the exception of base sample EX19-037 collected on July 20, 2019. An initial base sample at location EX19-007 also reported detectable PHC concentrations that were close to the SSRA criteria. As a result, the area encompassing both sample locations was re-excavated to a depth of 1 m bgs and re-sampled at the new base depth on August 2, 2019. The confirmatory excavation base samples (EX19-086 and EX19-087) met the SSRA criteria.

### Excavation #3

Following receipt of the initial screening soil analytical results, and natural drying of materials in this area, Excavation #3 was initiated to address exceedances noted in analytical results from boreholes located along the north boundary of the lease. Excavation #3 was generally advanced to a depth of 0.6 m bgs.

During the excavation process of Excavation #3, waste materials were encountered in the vicinity of the former tank farm. Waste materials were generally located at a depth of approximately 0.6 m bgs, although the depth was variable and likely followed the natural depth of permafrost. Waste materials appeared to consist of a straw layer contained within fiberglass or plywood (Appendix III, Photo 6). Although the purpose of the waste material is unknown, it may have been an insulating layer placed beneath the former tank farm to protect the permafrost in this area. The material appeared to be soaked with a fuel-like substance, a possible result of the 1981 tank farm release. As a result of the waste material discovery, Excavation #3 was expanded north approximately 4 m past the edge of vegetation until all encountered waste materials were removed. The insulating layer waste materials were separated from other waste materials and placed into either sea-cans (fiberglass, wood, and metals) or soil bags (straw materials) for removal from the Site and disposal at an appropriate waste facility.

During removal of the waste encountered in Excavation #3, test pit soil samples (TP19-037 through TP19-046) were collected from the excavation walls in order to assess PHC concentrations in soil both above (0-0.3 m bgs and 0.3-0.6 m bgs) and below (0.8 m bgs) the waste material layer. Test pit analytical results are provided in Table 2 (Appendix IV) and test pit locations are presented on Figure 5.

Confirmatory excavation base samples collected between July 18, 2019 and August 4, 2019 indicated that the Excavation #3 base met the SSRA criteria, with the exception of sample EX19-088 (collected on August 4, 2019 at a depth of 1 m bgs during the waste removal process), which exceeded the criteria. This area was re-excavated to a depth of 1.2 m bgs and re-sampled at the new base depth on August 13, 2019. The new confirmatory excavation base sample (EX19-091) met the SSRA criteria. Due to elevated PHC concentrations below but approaching the SSRA criteria in excavation base sample EX19-033 (collected on July 18, 2019 at a depth of 0.6 m bgs), this area was also re-excavated to a depth of 1 m bgs. A new excavation base sample was collected (EX19-067), which met the SSRA criteria.

#### Excavation #4

Excavation #4 was initiated after receipt of soil analytical results from test pit base samples along the southern edge of the Site indicated that base sample EX19-023 exceeded the SSRA criteria. The area was excavated to a depth of 1 m bgs and re-sampled on July 25, 2019. At this time, excavation base sample EX19-054 exceeded the SSRA criteria. The area in the vicinity of this base sample was re-excavated to a depth of 1.5 m bgs and re-sampled on August 6, 2019. The new confirmatory excavation base sample (EX19-090) met the SSRA criteria.

#### Excavation #5

Following receipt of the pre-treatment screening soil analytical results, and natural drying of materials in this area, Excavation #5 was initiated to address exceedances noted in pre-treatment soil samples from boreholes BH19-079 and BH19-083 (Figure 3). Excavation #5 was excavated to a depth of 0.6 m bgs and confirmatory base samples were collected on July 28, 2019. All confirmatory excavation base samples met the SSRA criteria.

### 7.3 Windrow Soil Sample Results and Soil Volumes

Composite soil samples were collected from 15 windrows of treated soil on-site between July 15, 2019 and August 22, 2019. Windrow soil analytical results along with sample dates are summarized in Table 4 (Appendix IV) and laboratory analytical reports are presented in Appendix V.

A total of approximately 9000 m<sup>3</sup> of surface soil was excavated and treated during the 2019 Remediation Program. Analytical data collected during the remediation program have indicated that residual soil PHC concentrations have been reduced as a result of the ex-situ ALLU bucket treatment. Analytical results of confirmatory sampling of the treated and sampled windrow soil stockpiles indicated that soil in Workshop Windrow and Windrow 3 met the GNWT Tier 1 guideline criteria at the time they were backfilled. Soil samples collected from Windrows 7 and 8 were generally below GNWT Tier 1 guideline criteria for PHC concentrations in soil. Each windrow reported one sample with an exceedance of the PHC fraction F3 guideline, but given the relatively small soil volume of the



exceedance the windrow soils were used as backfill material at the Site. The remaining windrowed and treated soil did not meet the GNWT Tier 1 guideline criteria at the end of the 2019 Remediation Program and remains at the Site. Excavated and treated soil was backfilled into the excavated areas at the Site and contoured to avoid leaving potential hazards of uneven ground or open excavations. Workshop Windrow was used as “spot” backfill throughout the Site to fill in depressions in preparation for final surface grading. The backfill locations of the remaining windrows are shown on Figure 7.

## 7.4 Off-Lease Soil Assessment

Laboratory analytical results of samples collected from the off-lease soil assessment boreholes indicated that concentrations of PHC parameters including toluene, ethylbenzene, xylenes, and PHC fractions F1 to F3 exceed the GNWT Tier 1 guideline criteria in areas north of the historical northern limit of remedial treatment (i.e., the vegetation boundary). Borehole sample locations are shown on Figure 5. Impacts identified at boreholes BH19-125 and BH19-126 appear to be horizontally delineated and contained within the lease boundary. In the absence of other PHC parameter exceedances, it is considered likely that PHC fraction F3 exceedances at boreholes BH19-128, BH19-131, and BH19-133 may be the result of naturally occurring hydrocarbons in the peat. The PHC parameter exceedances reported at borehole BH19-134 have not been horizontally delineated to the east. Vertical delineation of this borehole is also recommended as the reported PHC parameter exceedances also exceed the SSRA criteria. Off-lease soil assessment analytical results are summarized in Table 2 (Appendix IV).

## 7.5 Waste Removal

A total of 432 soil bags and eight sea-cans of polyurethane foam and other waste materials were removed from the Site in 2019, including 348 soil bags of waste that had been excavated during the 2018 program and stored at the Site over the winter. Waste materials were loaded onto barges and removed from the Site for transfer to the Inuvik SWDF.

## 7.6 Soil QA/QC Results

For quality assurance purposes, 29 replicate soil samples were collected for analysis of PHC parameters during the 2019 Remediation Program. Replicate samples included 12 replicates of pre-treatment screening soil samples, six replicated of test pit soil samples, three replicates of excavation base confirmatory soil samples, and eight replicates of windrow soil samples.

The laboratory results for the replicate and original samples were compared and evaluated for quality on the basis of either relative percent difference (RPD) or absolute difference (AD). There were eight replicate samples for PHC parameters (BTEX and PHC fractions F1 to F4) that were identified above the Zeiner (1994) criteria in the QA/QC review of results received under one or more AGAT work orders. However, the majority of the replicate samples met the QA/QC criteria. Based on the QA/QC assessment, the analytical results can generally be considered valid for their intended purpose.

A summary of soil QA/QC results are presented in Table 5 (Appendix IV). Laboratory quality assurance reports and analytical methods are presented in Appendix V.

## 7.7 Challenges and Setbacks

### 7.7.1 Soil Assessment

The manual auger drilling method that was used to advance both on-site (initial screening) and off-lease boreholes had several limitations. In areas where materials were very gravelly and where shallow permafrost was encountered, the maximum depth of sample collection was limited due to shallow auger refusal. Due to the coarse sandy soil conditions on-site, there was also some uncertainty of the depths at which discrete soil samples were due to borehole collapse and slough in of the non-cohesive gravelly coarse soils. Borehole instability was also noted during the installation of the shallow monitoring wells. Saturated soils encountered below the water table at some locations began to slough-in the borehole and prevented further advancement of the borehole. This also caused some uncertainty of collected soil sample depths.

### 7.7.2 Soil Treatment

The success of the ex-situ soil treatment with an ALLU bucket requires the volatilization of PHCs from impacted soil and typically has a much greater effect on the lighter range PHCs. The rate and extent of volatilization of PHCs in soil using these ex-situ treatment methods are improved with dry conditions at increased temperatures. There were significant periods of cooler weather and rain experienced during the 2019 Remediation Program, which created significant challenges to the effectiveness of the treatment method and handling of the impacted soil. This likely resulted in less than expected reductions in the soil concentrations of PHCs from the ex-situ treatment.

## 8 GROUNDWATER MONITORING RESULTS

### 8.1 Groundwater Flow Conditions

Groundwater monitoring results are summarized in Table 6 (Appendix IV). During the August 2019 sampling event, depth to groundwater ranged from 0.13 m bgs (P06-1) to 1.75 m bgs (P19-4). As the monitoring wells installed in 2019 have not been surveyed to date and there is no groundwater elevation data available for the Site, groundwater flow direction and horizontal hydraulic gradient have not been calculated. Based on topography and drainage patterns observed at the Site, groundwater is expected to flow in a southeasterly direction towards the Mackenzie River. This is also consistent with historical observations of groundwater flow direction at the Site that have been previously reported.

### 8.2 Field Measured Groundwater Parameters

Groundwater temperature, pH, EC, ORP, DO, and TDS were measured as field parameters at each monitoring well during the August 2019 sampling event. The results are presented in Table 7 (Appendix IV). A summary of each measured field parameter is listed below:

- pH values ranged from 6.80 (P19-6) to 8.00 (P06-7);
- EC values ranged from 270  $\mu\text{S}/\text{cm}$  (P06-7) to 1540  $\mu\text{S}/\text{cm}$  (P19-5);
- Temperatures ranged from 2.1 °C (P06-7) to 7.5 °C (P19-6);
- ORP values ranged from -65.8 mV (P06.7) to 199.9 mV (P19-4);
- DO concentrations ranged from 8.28 mg/L (P19-5) to 12.45 mg/L (P19-4); and
- TDS ranged from 176 mg/L (P06-7) to 1001 mg/L (P19-5).

### 8.3 Routine Potability and Dissolved Metals Analytical Results

Groundwater analytical results for the analyzed routine potability parameters are presented in Table 8 (Appendix IV). The sulphate and nitrate concentrations at monitoring well P06-6 and well P19-4, respectively, exceeded the Federal guideline. The remaining routine parameters were reported within the applicable guidelines and/or below the laboratory detection limit or within the guideline range (pH).

Groundwater analytical results for the analyzed dissolved metal parameters are presented in Table 9 (Appendix IV). The dissolved concentrations of aluminum, arsenic, barium, cadmium, chromium, copper, iron, molybdenum, nickel, selenium, silver, and zinc exceeded the Federal guidelines at one or more monitoring wells in August 2019.

### 8.4 Petroleum Hydrocarbon Analytical Results

Groundwater analytical results for the analyzed PHC parameters are presented in Table 10 (Appendix IV). Monitoring well P19-2 contained concentrations of toluene (0.113 mg/L) and PHC fractions F1 (1.5 mg/L) and F2 (5.3 mg/L) in exceedance of the Federal guidelines. Monitoring well

P19-6 contained a concentration of benzene (0.152 mg/L) in exceedance of the Federal guideline and monitoring well P19-5 contained a concentration of PHC fraction F2 (7.3 mg/L) in exceedance of the Federal guideline. The monitoring wells with the reported exceedances were located on the eastern side of the Site. The remaining PHC parameters were reported within the applied guidelines and/or below the laboratory detection limit.

Groundwater exceedances of PHC parameters are presented on Figure 8.

## 8.5 Groundwater QA/QC Results

For quality assurance purposes, one duplicate sample was collected from monitoring well P19-5 (labeled DUP1) during the August 2019 sampling event and submitted for analysis of routine potability parameters.

The calculated RPD and AD values met the Zeiner (1994) criteria for each parameter analyzed. Based on the Zeiner criteria, the routine parameter analytical results reported for other samples can be considered accurate and valid for their intended purpose.

A summary of groundwater analytical QA/QC results are presented in Table 11 (Appendix IV). Laboratory analytical reports are provided in Appendix V.

## 9 CONCLUSIONS

The key findings of the 2019 Remediation Program are listed below:

- Shed #1 was dismantled and removed from the Site during the 2019 Remediation Program. The emergency shelter is the only remaining infrastructure at the Site.
- Selected soil remediation criteria included a combination of GNWT Residential/Parkland guidelines for PHCs in surface soil (<0.6 m bgs) and the proposed SSRA criteria for subsoil (≥0.6 m bgs).
- An initial soil sampling program was conducted between July 1 and 3, 2019 and indicated that surface soil in multiple areas of the Site contained concentrations of PHC parameters in exceedance of the applicable GNWT Tier 1 guideline criteria.
- Soil was treated on-site using in-situ landfarming (rolling/aerating) and ex-situ (windrows and ALLU bucket aeration) methods.
- Soil was treated by landfarming (rolling/aerating the soil with a dozer) in two landfarming areas between July 4 and 20, 2019. Confirmatory soil samples collected via a Dutch auger indicated that concentrations of xylenes, and PHC fractions F2 and F3 remained in exceedance of the applicable guidelines at multiple test pit locations.
- Soil was excavated from five excavation areas and stockpiled on-site from July 4, 2019 to August 13, 2019. A total of approximately 9000 m<sup>3</sup> of soil was excavated during the program. Excavated soil was placed into windrows and treated with an ALLU bucket. Confirmatory soil samples collected from the excavation bases indicated that soils left in place at depths ≥0.6 m bgs were less than the proposed SSRA criteria of 5000 mg/kg F1-F3 soil concentration.
- Analytical data collected during the remediation program have indicated that residual soil PHC concentrations have been reduced as a result of the landfarming and ALLU bucket aeration treatments. While there was an overall reduction in PHC concentrations, most of the treated surface soil did not meet the GNWT guidelines at the end of the 2019 Remediation Program.
- Excavated and treated soils were used to backfill excavation areas at the end of the 2019 Remediation Program. Surfaces were contoured to reduce potential hazards at the Site due to uneven ground and open excavations.
- Analytical results of the off-lease soil assessment conducted north of the lease boundary indicate that surface soils in an area north of the lease boundary contain PHC concentrations in exceedance of the applicable GNWT Tier 1 guideline criteria. This area has not been horizontally delineated for PHC impacted soils.
- Updates to the groundwater monitoring network in 2019 included the repair of two existing wells (P06-01 and P06-7) and installation of four new monitoring wells (P19-2 and P19-4, P19-5 and P19-6).
- Analytical results for groundwater samples collected in 2019 indicated exceedances of applied groundwater guidelines for sulphate, nitrate, aluminum, arsenic, barium, cadmium,

chromium, copper, iron, molybdenum, nickel, selenium, silver, zinc, benzene, toluene, and PHC fractions F1 and F2 at one or more monitoring wells.

- Groundwater exceedances of applied guidelines for PHC parameters were reported in samples from monitoring wells P19-2, P19-5, and P19-6.
- A total of 84 soil bags and eight sea-cans of polyurethane foam and other waste materials were excavated from the Site during the program. Waste materials (including an additional 348 soil bags stored on-site from 2018) were transferred to the Inuvik SWDF.
- Shell maintained compliance with CWS Permit MM-NR-2019-NT-003 for the duration of the 2019 Remediation Program.
- Shell maintained compliance with Water Licence N7L1-1834 for the duration of the 2019 Remediation Program.

## 10 FUTURE SITE WORK

Shell intends to conduct a monitoring program at the Site in 2020 to assess the levels of residual hydrocarbons in the soil and groundwater on-site and delineate off-lease soil impacts identified in 2019. Along with the monitoring program, Shell will conduct a guideline pathway assessment in 2020 to potentially eliminate the pathway for exposure through freshwater aquatic life and confirm the most applicable guidelines are being used for surface soil at the Site.

Future work at the Site beyond 2020 may include additional remediation, reclamation monitoring, and groundwater monitoring network updates, soil and groundwater monitoring programs, and community consultations. Shell will continue to maintain compliance with Water Licence N7L1-1834, including performing the temporary and permanent closure activities outlined in the most recent *Closure and Reclamation Plan* (IEG 2019b).

## 11 CLARIFICATIONS OF THIS REPORT

The report's findings are based on conditions that existed at the time of the 2019 Remediation Program and should not be relied upon to precisely represent conditions at any other time. The conclusions in the report are based on IEG Consultant Ltd.'s observation of existing site conditions, and on soil sampling and chemical testing. The concentrations of contaminants measured may not be representative of conditions between locations sampled. Be aware that conditions may change with time. Conclusions about site conditions under no circumstances comprise a warranty that conditions in all areas within the Site and beneath structures are of the same quality as those sampled. Note also that changes in environmental regulations and interpretations may occur at any time, and such changes could affect the extent of remediation required. Any additional information about the Site that becomes available should be provided to IEG Consultants Ltd. for review and modification of its recommendations, as necessary.

This report is an instrument of service of IEG Consultants Ltd. The report has been prepared for the exclusive use of Shell Canada Energy (Client) and the Inuvialuit Land Administration for the specific application to the Former West Channel Staging Site Groundwater Monitoring and Remediation Program, and it may not be relied upon by any other party without IEG Consultant Ltd.'s written consent.

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## 12 CLOSING

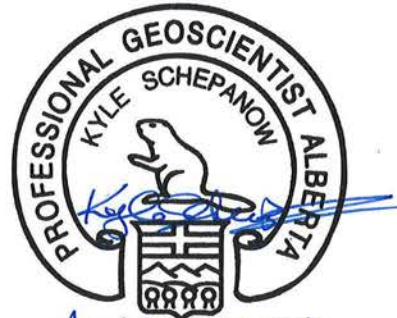
If you have any questions or comments regarding the above information, please contact Kyle Schepanow at (403) 648-4292.

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*April 15, 2020*

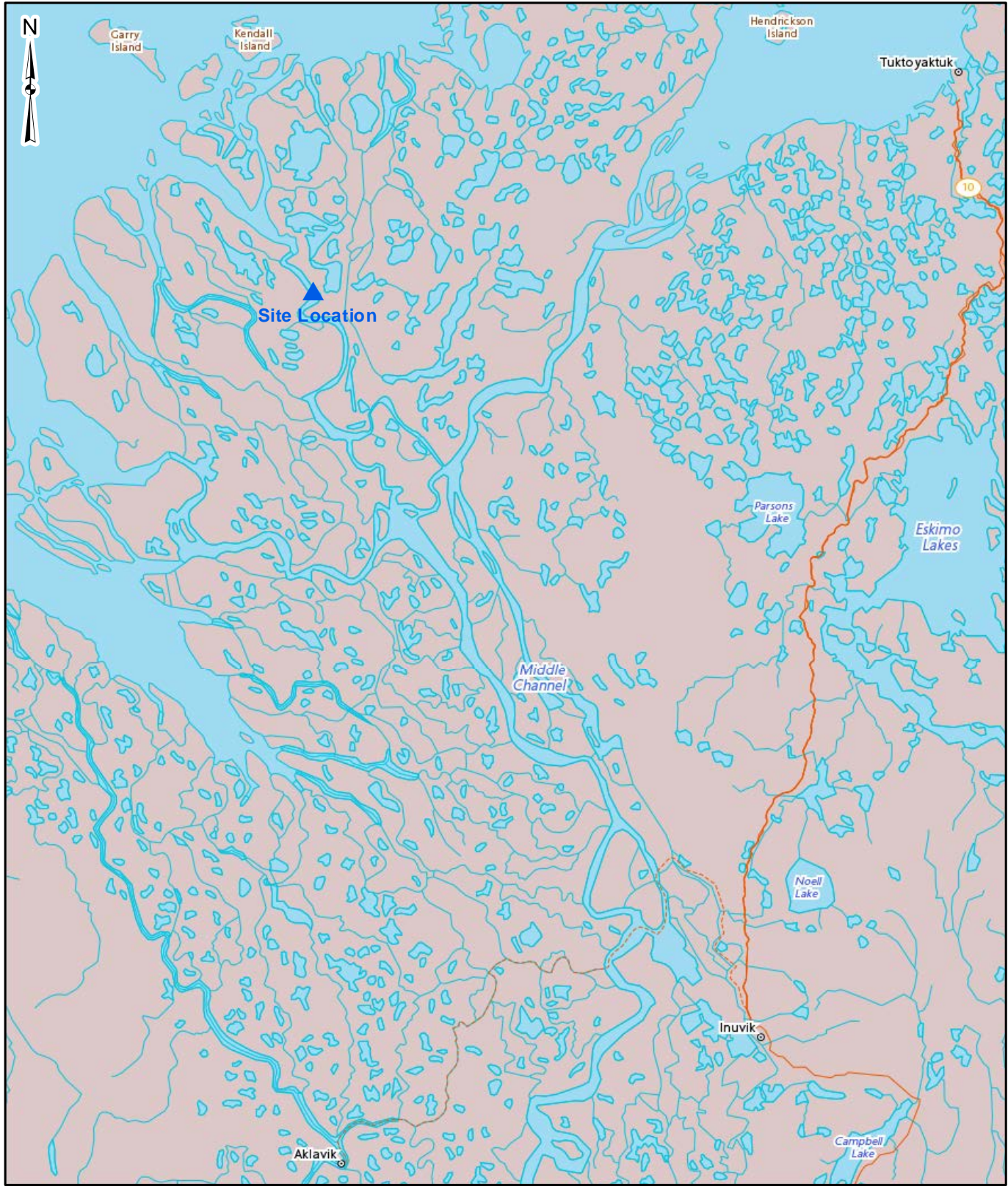
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## FIGURES

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Time: 15:14:49 PM  
 Date: March 10, 2020  
 File: Z:\A\CCS\Alberta\A04012A11\_SCF\_2019\_C.F. Actie\_Proc\_Env\_Ser\400\_Drawings\GIS\A04012A11\_SCF\_2019\_C.F. Actie\_Proc\_Env\_Ser\Report\Fig1\_Site\_Location\_202003.mxd

**NOTES:**

1. HORIZONTAL DATUM: NAD83
2. GRID ZONE: UTM Zone 8N
3. IMAGE SOURCE: The Toporama Web Map Service, [http://wms.ess-ws.nrcan.gc.ca/wms/toporama\\_en](http://wms.ess-ws.nrcan.gc.ca/wms/toporama_en), Government of Canada, Natural Resources Canada, Earth Sciences Sector

**CLIENT**

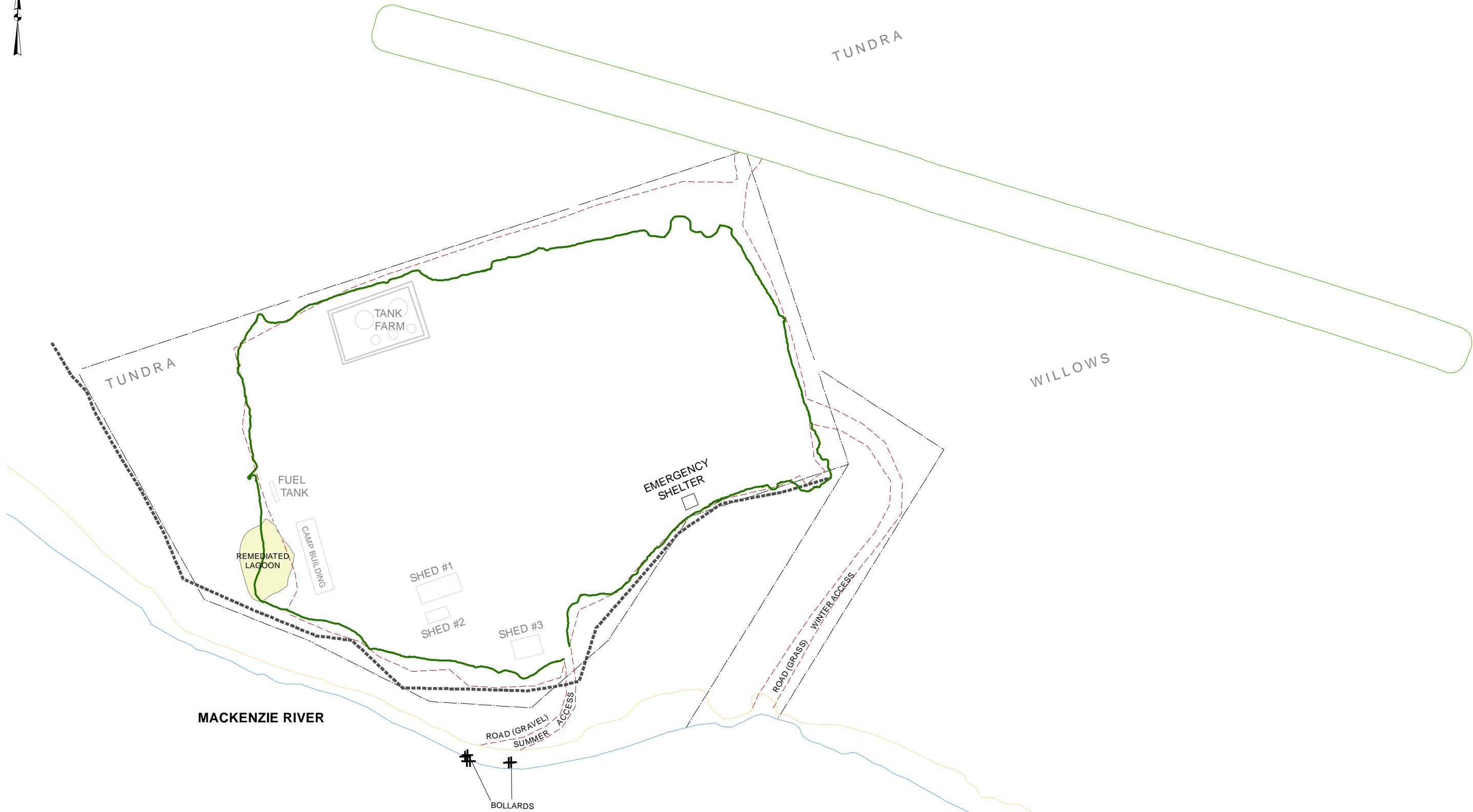


**Shell Canada Energy**



|                |   |                |
|----------------|---|----------------|
| <b>PROJECT</b> | CAMP FAREWELL REMEDIATION PROGRAM<br>ANNUAL REPORT 2019 |                |
| <b>TITLE</b>   | Site Location Map                                       |                |
| <b>SCALE</b>   | <b>PROJECT No.</b>                                      | <b>FIG No.</b> |
| 1:700,000      | A04012A11   | 1              |

File: Z:\AICG\Y\beria\A04012A11 SCE 2019 CF Artic Prog Env Ser\400 Drawings\GIS\MXD\2019 Rem Report\Fig2\_SitePlan\_200414.mxd Date: April 14, 2020 Time: 12:19:46 PM Creator: shamern



- Legend**
- Boundary
  - - - Edge of Gravel
  - River
  - Sand
  - Top of Bank
  - 2019 Revised Vegetation Boundary
  - Former Aboveground Storage Tank
  - Airstrip
  - Existing Infrastructure
  - Removed infrastructure

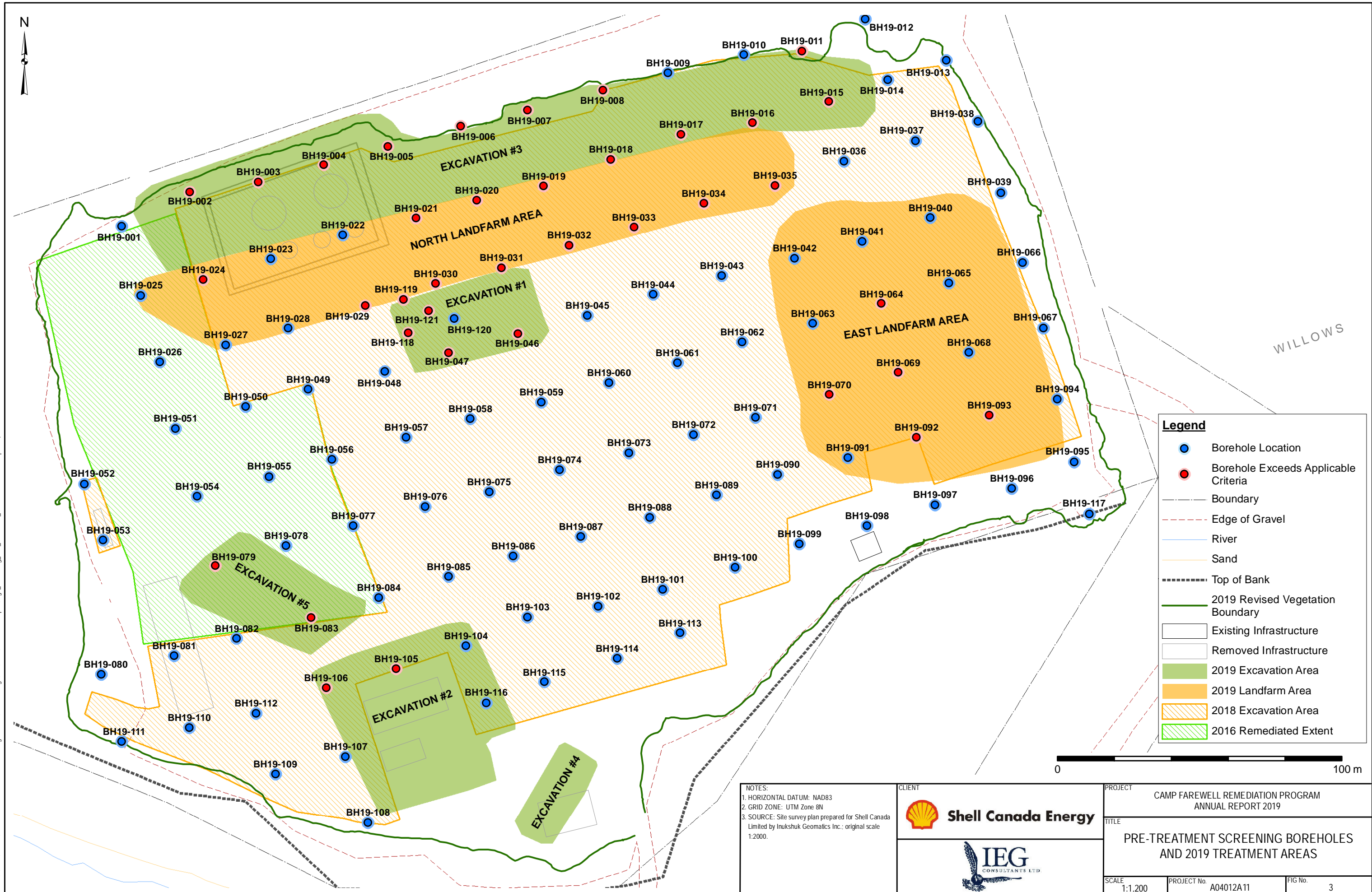


**NOTES:**  
 1. HORIZONTAL DATUM: NAD83  
 2. GRID ZONE: UTM Zone 8N  
 3. SOURCE: Site survey plan prepared for Shell Canada Limited by Inukshuk Geomatics Inc.; original scale 1:2000.



|         |             |   |  |
|---------|-------------|---|--|
| PROJECT |             | CAMP FAREWELL REMEDIATION PROGRAM<br>ANNUAL REPORT 2019 |  |
| TITLE   |             | SITE PLAN   |  |
| SCALE   | PROJECT No. | FIG No.   |  |
| 1:2,500 | A04012A11   | 2   |  |

File: Z:\AICG\Albernia\A04012A11 SCE 2019 CF Arlic Prog Env Ser\400 Drawings\GIS\X2019 Rem Report\Fig9\_Screening\_and\_Treatment\_200414.mxd Date: April 14, 2020 Time: 12:06:21 PM Creator: shanmam



**Legend**

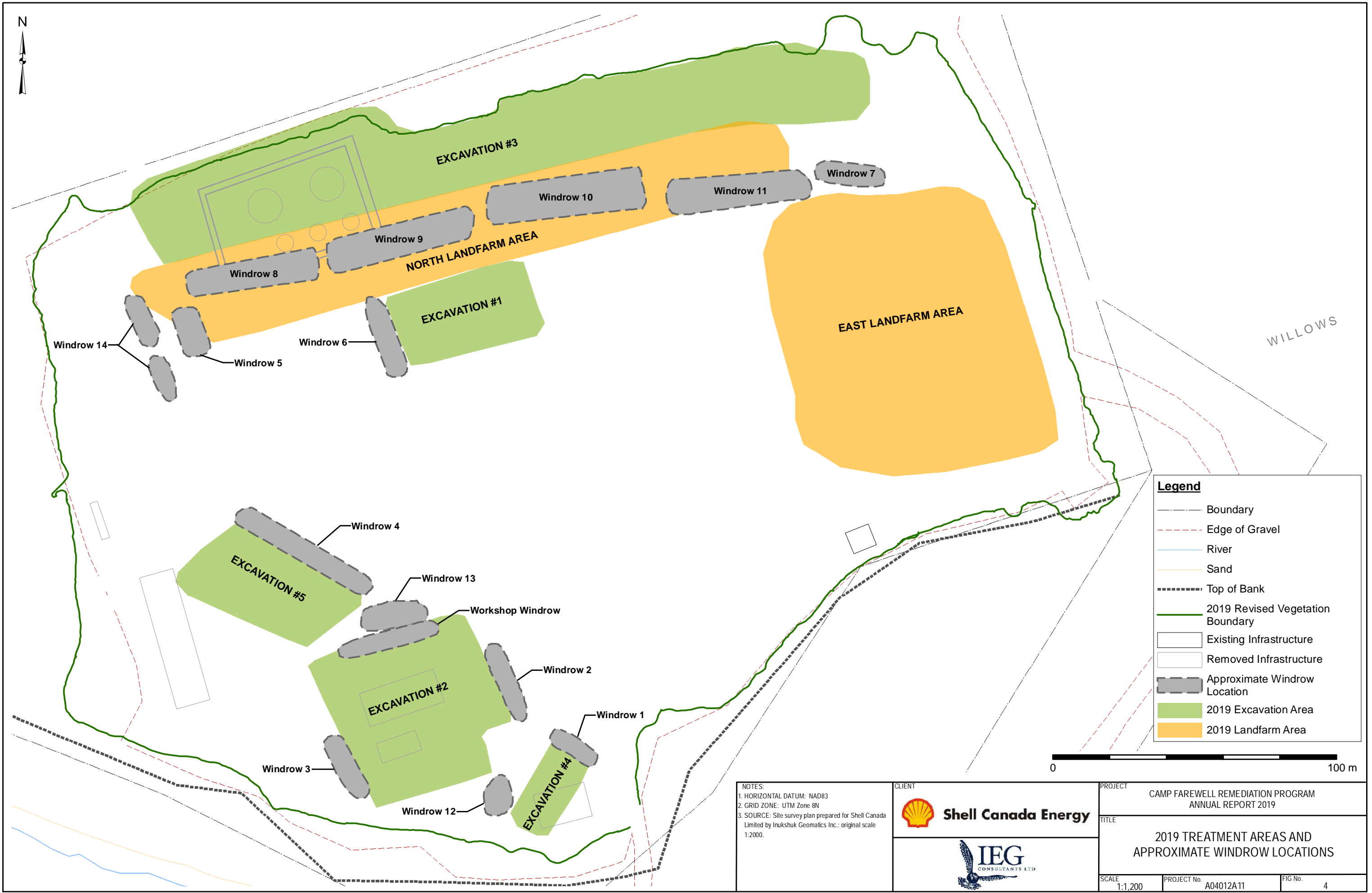
- Borehole Location
- Borehole Exceeds Applicable Criteria
- Boundary
- - - Edge of Gravel
- River
- Sand
- - - - - Top of Bank
- 2019 Revised Vegetation Boundary
- Existing Infrastructure
- Removed Infrastructure
- 2019 Excavation Area
- 2019 Landfarm Area
- 2018 Excavation Area
- 2016 Remediated Extent

**NOTES:**  
 1. HORIZONTAL DATUM: NAD83  
 2. GRID ZONE: UTM Zone 8N  
 3. SOURCE: Site survey plan prepared for Shell Canada Limited by Inukshuk Geomatics Inc.; original scale 1:2000.

CLIENT

|  |                          |
|--|--------------------------|
| PROJECT<br>CAMP FAREWELL REMEDIATION PROGRAM<br>ANNUAL REPORT 2019     |                          |
| TITLE<br>PRE-TREATMENT SCREENING BOREHOLES<br>AND 2019 TREATMENT AREAS |                          |
| SCALE<br>1:1,200   | PROJECT No.<br>A04012A11 |
| FIG No.<br>3   |                          |

File: Z:\ACG\Valberia\A04012A11 SCE 2019 CF Artic Prog Env Ser\400 Drawings\GIS\MXD\2019 Rem Report\Fig\_ Windrows\_200414.mxd Date: April 14, 2020 Time: 12:14:18 PM Creator: shanmem



**Legend**

- Boundary
- Edge of Gravel
- River
- Sand
- Top of Bank
- 2019 Revised Vegetation Boundary
- Existing Infrastructure
- Removed Infrastructure
- Approximate Windrow Location
- 2019 Excavation Area
- 2019 Landfarm Area

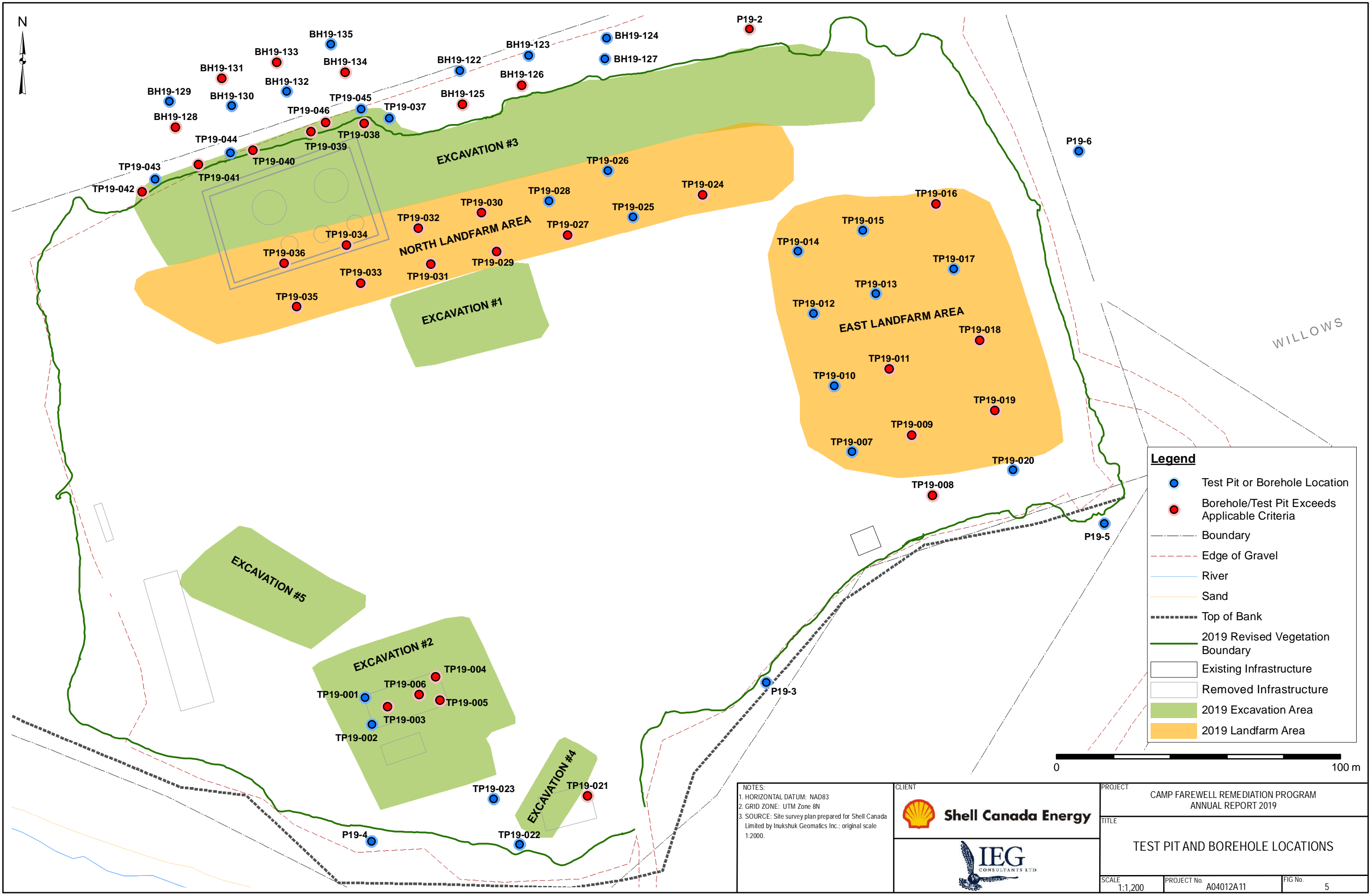
**NOTES:**  
 1. HORIZONTAL DATUM: NAD83  
 2. GRID ZONE: UTM Zone 8N  
 3. SOURCE: Site survey plan prepared for Shell Canada Limited by Inukshuk Geomatics Inc.; original scale 1:2000.

**CLIENT**




|   |                                 |                     |
|---|---------------------------------|---------------------|
| <b>PROJECT</b><br>CAMP FAREWELL REMEDIATION PROGRAM<br>ANNUAL REPORT 2019 |                                 |                     |
| <b>TITLE</b><br>2019 TREATMENT AREAS AND<br>APPROXIMATE WINDROW LOCATIONS |                                 |                     |
| <b>SCALE</b><br>1:1,200   | <b>PROJECT No.</b><br>A04012A11 | <b>FIG No.</b><br>4 |

File: Z:\AICG\Valberia\A04012A11 SCE 2019 CF Artic Prog Env Ser\400 Drawings\GIS\XDXD2019 Rem Report\Fig5\_TestPits\_and\_Boreholes\_200414.mxd Date: April 14, 2020 Time: 12:13:27 PM Creator: shannem



NOTES:  
 1. HORIZONTAL DATUM: NAD83  
 2. GRID ZONE: UTM Zone 8N  
 3. SOURCE: Site survey plan prepared for Shell Canada Limited by Inukshuk Geomatics Inc.; original scale 1:2000.

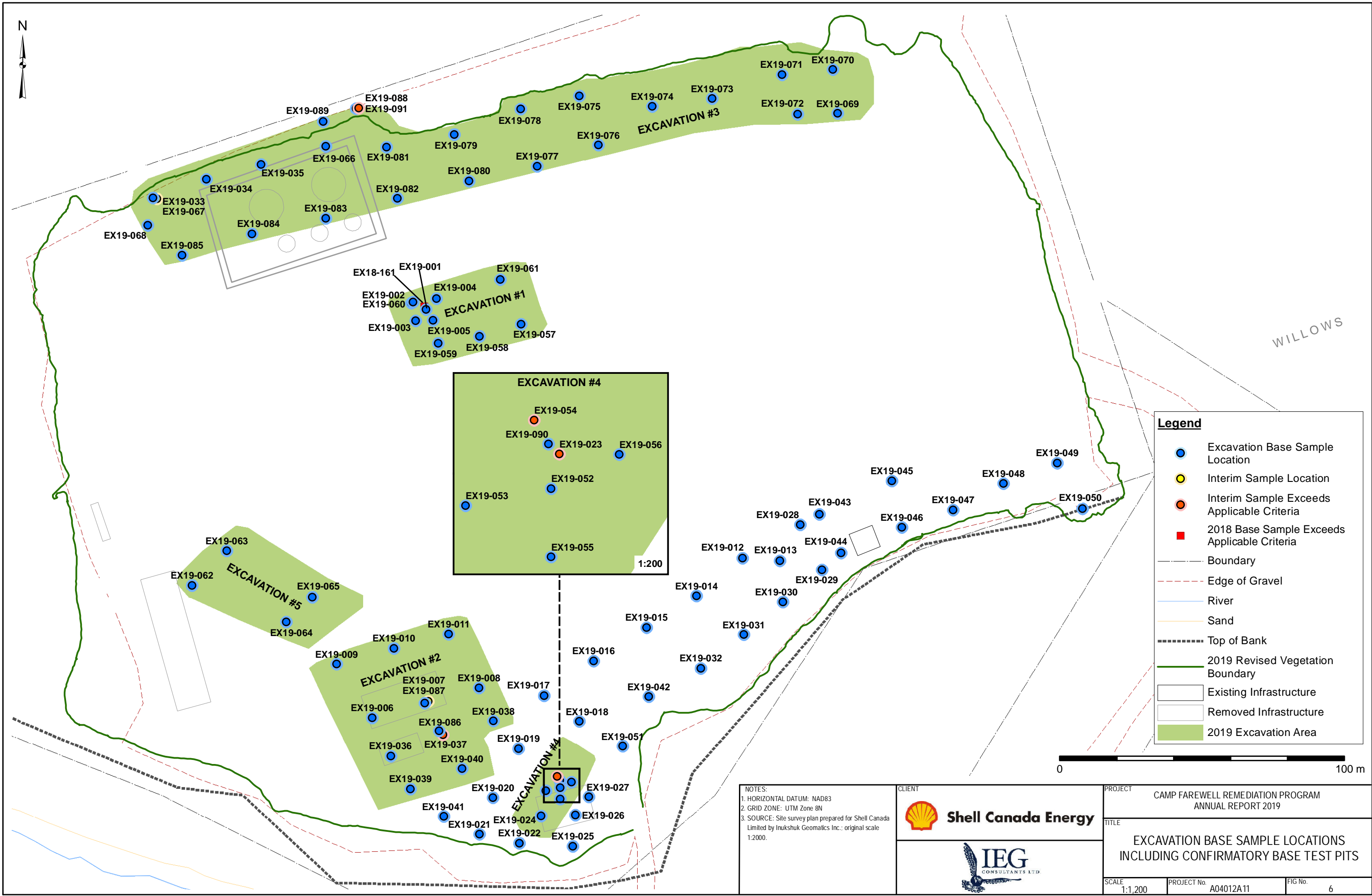
CLIENT




|  |                          |              |
|--|--------------------------|--------------|
| PROJECT<br>CAMP FAREWELL REMEDIATION PROGRAM<br>ANNUAL REPORT 2019 |                          |              |
| TITLE<br>TEST PIT AND BOREHOLE LOCATIONS                           |                          |              |
| SCALE<br>1:1,200   | PROJECT No.<br>A04012A11 | FIG No.<br>5 |



File: Z:\AICG\Valberia\A04012A11 SCE 2019 CF Artic Prog Env Ser\400 Drawings\GIS\XDXD2019 Rem Report\Fig\_ExcavationSamples\_200414.mxd Date: April 14, 2020 Time: 12:12:51 PM Creator: shtamm



**Legend**

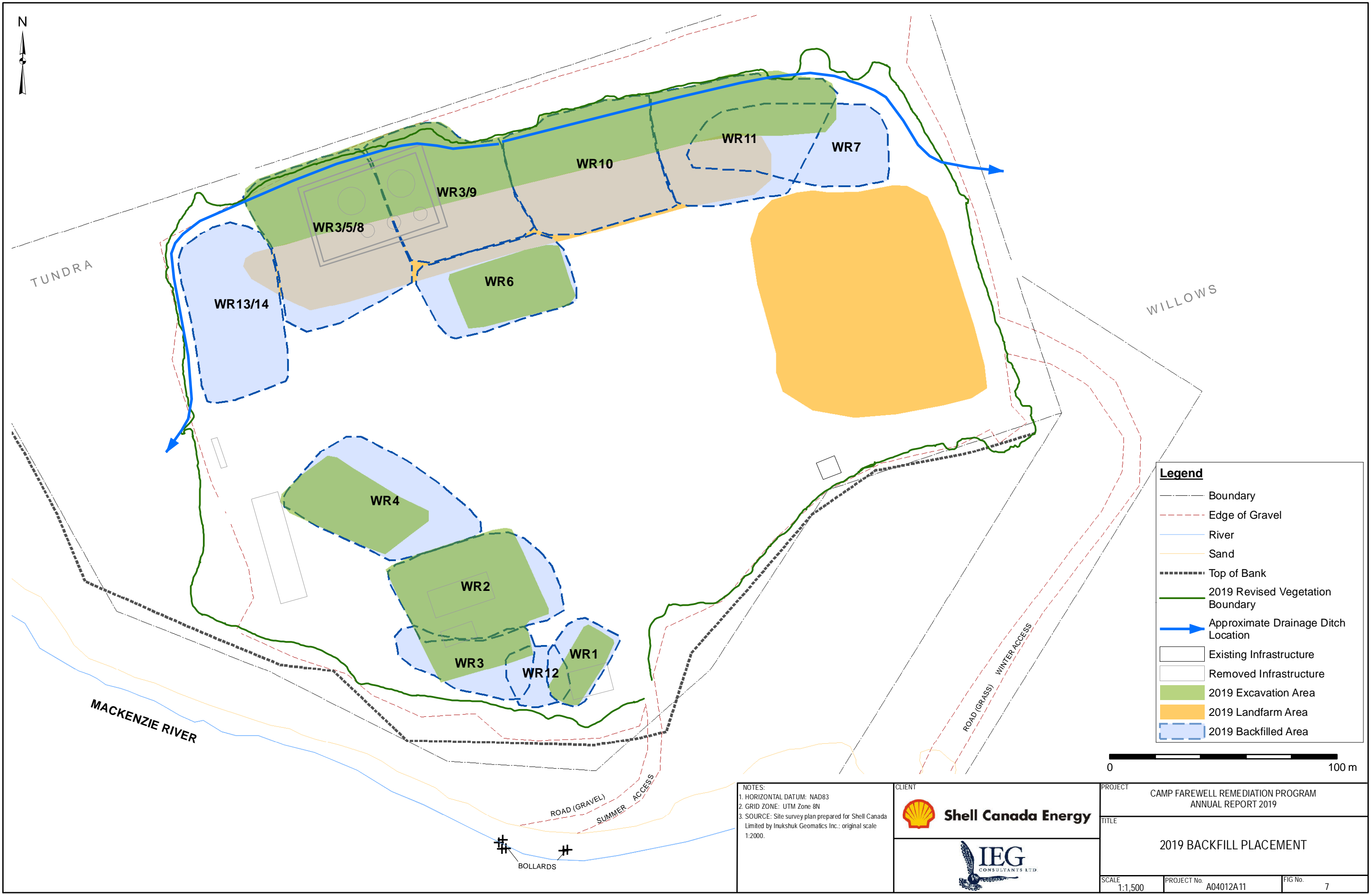
- Excavation Base Sample Location
- Interim Sample Location
- Interim Sample Exceeds Applicable Criteria
- 2018 Base Sample Exceeds Applicable Criteria
- Boundary
- - - - Edge of Gravel
- River
- Sand
- Top of Bank
- 2019 Revised Vegetation Boundary
- ▭ Existing Infrastructure
- ▭ Removed Infrastructure
- 2019 Excavation Area

**NOTES:**  
 1. HORIZONTAL DATUM: NAD83  
 2. GRID ZONE: UTM Zone 8N  
 3. SOURCE: Site survey plan prepared for Shell Canada Limited by Inukshuk Geomatics Inc.; original scale 1:2000.

CLIENT  
 **Shell Canada Energy**  


|  |                          |              |
|--|--------------------------|--------------|
| PROJECT<br>CAMP FAREWELL REMEDIATION PROGRAM<br>ANNUAL REPORT 2019                 |                          |              |
| TITLE<br>EXCAVATION BASE SAMPLE LOCATIONS<br>INCLUDING CONFIRMATORY BASE TEST PITS |                          |              |
| SCALE<br>1:1,200   | PROJECT No.<br>A04012A11 | FIG No.<br>6 |

File: Z:\AICG\Yalberta\A04012A11\_SCE 2019 CF Artic Prog Env Ser\400 Drawings\GIS\WXD2019 Rem Report\Fig7\_Backfill\_200414.mxd Date: April 14, 2020 Time: 12:23:09 PM Creator: shannem



**Legend**

- Boundary
- - - Edge of Gravel
- River
- Sand
- - - - - Top of Bank
- 2019 Revised Vegetation Boundary
- ➔ Approximate Drainage Ditch Location
- ▭ Existing Infrastructure
- ▭ Removed Infrastructure
- 2019 Excavation Area
- 2019 Landfarm Area
- ▭ 2019 Backfilled Area



NOTES:  
 1. HORIZONTAL DATUM: NAD83  
 2. GRID ZONE: UTM Zone 8N  
 3. SOURCE: Site survey plan prepared for Shell Canada Limited by Inukshuk Geomatics Inc.; original scale 1:2000.

CLIENT  
 Shell Canada Energy

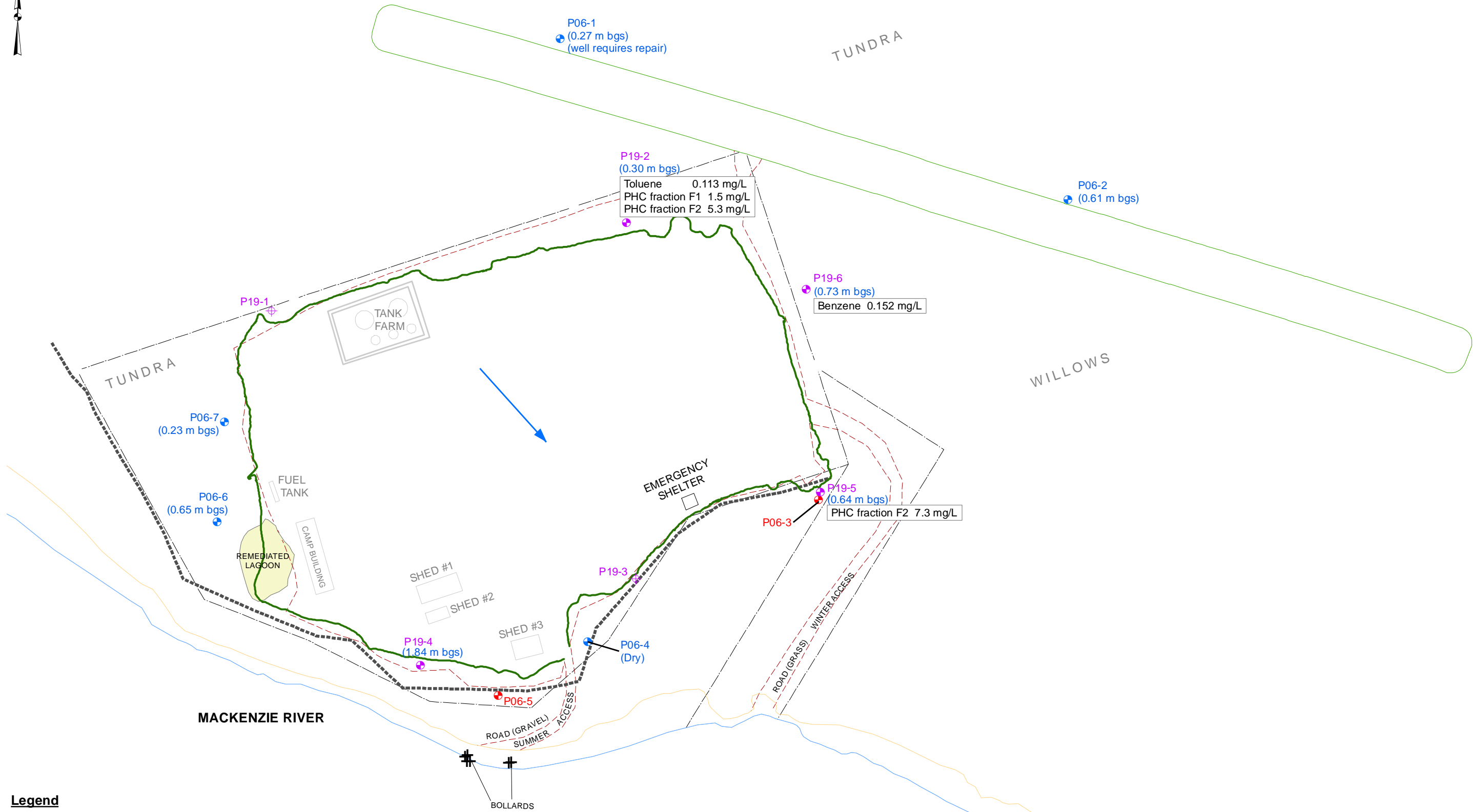
IEG CONSULTANTS LTD.

PROJECT CAMP FAREWELL REMEDIATION PROGRAM ANNUAL REPORT 2019

TITLE 2019 BACKFILL PLACEMENT

SCALE 1:1,500 PROJECT No. A04012A11 FIG No. 7

File: Z:\AICG\Yalberta\A04012A11 SCE 2019 CF Artic Prog Env Ser\400 Drawings\GIS\XDXD2019 Rem Report\Fig8\_Groundwater\_200414.mxd Date: April 14, 2020 Time: 12:24:25 PM Creator: shammem



**Legend**

- + Piezometer (Installed in 2006)
- + Piezometer (Destroyed/Not Found)
- + Piezometer (Installed in 2019)
- + Borehole (Advanced in 2019)
- Airstrip
- Existing Infrastructure
- Removed infrastructure
- Inferred Groundwater Flow Direction
- Boundary
- Edge of Gravel
- River
- Sand
- Top of Bank
- 2019 Revised Vegetation Boundary



**NOTES:**  
 1. HORIZONTAL DATUM: NAD83  
 2. GRID ZONE: UTM Zone 8N  
 3. SOURCE: Site survey plan prepared for Shell Canada Limited by Inukshuk Geomatics Inc.; original scale 1:2000.



|                    |   |                  |
|--------------------|---|------------------|
| <b>PROJECT</b>     | CAMP FAREWELL REMEDIATION PROGRAM<br>ANNUAL REPORT 2019   |                  |
| <b>TITLE</b>       | GROUNDWATER MONITORING NETWORK,<br>AUGUST 2019 GROUNDWATER LEVELS, AND<br>PHC PARAMETER EXCEEDANCES |                  |
| <b>SCALE</b>       | 1:2,500   | <b>FIG No.</b> 8 |
| <b>PROJECT No.</b> | A04012A11   |                  |

# APPENDIX I

## Permits and Licenses

---



## **ENVIRONMENTAL IMPACT SCREENING COMMITTEE**

March 25<sup>th</sup>, 2019

EISC Registry File: **[05-18-01]**

David Brown  
Shell Canada Energy  
400 4 Avenue SW  
Calgary, AB  
T2P 0J4

**Project Title: Camp Farewell 2018 Remediation Program**

**Proponent: Shell Canada Energy**

Dear Mr. Brown:

**RE: Request to Amend 05-18-01 - Date Extension**

Thank you for your letter of March 5<sup>th</sup>, 2019, in which you request an amendment to your previously screened file: 05-18-01.

During a meeting held March 15<sup>th</sup>, 2019, the Environmental Impact Screening Committee (EISC) reviewed the original file and your letter requesting the amendment. The EISC notes that this request is for a date extension to complete the activities proposed in the original project description.

The EISC determined that the requested amendment to EISC file 05-18-01 does not require any additional environmental impact screening, and approves the request subject to the proposed activities being completed by August 31<sup>st</sup>, 2019.

If you have any questions regarding this decision, please don't hesitate to contact me directly at 1(867)777-2828, Extension 1014.

Sincerely,

Michel Lindsay  
EIS Coordinator, Environmental Impact Screening Committee

Cc. EISC Distribution List

### **EISC Distribution List**

David Brown, Senior Environmental Engineer, Shell Canada Energy  
 Stephanie Hannem, Environmental Scientist, Klohn Crippen Berger  
 Larry Carpenter, Chair, Wildlife Management Advisory Committee (NWT)  
 Jodie Maring, Wildlife Management Advisory Committee (NWT)  
 Lindsay Staples, Chair, Wildlife Management Advisory Committee (NS)  
 Kaitlin Wilson, Wildlife Management Advisory Committee (NS)  
 Alan Kennedy, Chair, Fisheries Joint Management Committee  
 Vanessa Cunningham, Fisheries Joint Management Committee  
 Emily Way-Nee, Fisheries Joint Management Committee  
 Vernon Amos, Chair, Inuvialuit Game Council  
 Chanda Turner, Inuvialuit Game Council  
 John Donihee, Chair, Environmental Impact Review Board  
 Lenora McLeod, Coordinator, Environmental Impact Review Board  
 David Livingstone, Chair, Environmental Impact Screening Committee  
 Jennifer Lam, Committee Program Manager, Joint Secretariat  
 Chloe Brogan, Community-Based Monitoring Program, Joint Secretariat  
 Cassandra Elliott, TLK, Joint Secretariat  
 Kayla Hansen-Craik, MPA, Joint Secretariat  
 Paulatuk Hunters and Trappers Committee  
 Aklavik Hunters and Trappers Committee  
 Inuvik Hunters and Trappers Committee  
 Olokhaktomiut Hunters and Trappers Committee  
 Sachs Harbour Hunters and Trappers Committee  
 Tuktoyaktuk Hunters and Trappers Committee  
 Mardy Semmler, Executive Director, Inuvialuit Water Board  
 Bijaya Adhikari, Inuvialuit Water Board  
 Duane Smith, Chair, Inuvialuit Regional Corporation  
 Kate Darling, General Counsel, Inuvialuit Regional Corporation  
 Charles Klengenber, Director of Lands, Inuvialuit Land Administration  
 Glenna Noksana, Inuvialuit Land Administration  
 Alec Sandra Macdonald, Regulatory Specialist, GLWB  
 Erika Tramm-Tizya, Transboundary Specialist, Gwich'in Lands and Resources  
 Stephen Charlie, Director, Gwich'in Lands and Resources  
 GNWT Environmental Assessment and Monitoring  
 Nathen Richea Manager Water Regulatory, ENR, GNWT  
 Aurora Research Institute  
 Naomi Smethurst, Culture and Heritage, ECE, GNWT  
 Lorraine Seale, Department of Lands, GNWT  
 Dan Carmichael, Regional Superintendent, Department of Lands, GNWT  
 Marsha Branigan, Environment and Natural Resources, GNWT  
 Loretta Ransom, Environment and Natural Resources, GNWT  
 Patrick Clancy, Environment and Natural Resources, GNWT  
 Johnny Lennie, Manager Oil and Gas Planning, PR Division, GNWT

Ian Butters, Manager, Oil and Gas Rights, GNWT  
Peter Clarkson, Regional Director, Department of the Executive, GNWT  
Don Craik, Superintendent, ITI, GNWT  
Lorie Fyfe, Regional Superintendent, Inuvik Region, MACA  
Veronique D'Amours-Gauthier, DFO  
Fisheries Protection Program, Fisheries and Oceans Canada  
Beaufort Sea Partnership  
Nelson Perry, Parks Canada Agency  
Joe Costa, Resource Management Officer, Parks Canada  
Eric Reed, Canadian Wildlife Service, ECCC  
Marc LePointe, Environmental Assessment and Marine Program, ECCC  
Denis Lacroix, Environmental Assessment and Marine Program, ECCC  
Mark Dahl, Senior Oceans Disposal Officer, Environment Canada  
EA North NWT  
Christy Wickenheiser, National Energy Board  
Anne-Marie Hesse, National Energy Board  
Sarah Robertson, Senior Project Officer, CANNOR  
Georgina Williston, Senior Environmental Assessment Coordinator, EC  
Sarah Chan, Manager of Environmental Affairs, Department of Environment, YTG  
Mike Suitor, North Yukon Regional Biologist, Department of Environment, YTG  
Stephanie Muckenheim, IFA Implementation and Projects Coordinator, YTG  
Cameron Eckert, Special Projects Officer, YTG  
Carrie Mierau, Yukon Parks Branch, YTG  
Marc LePointe, Environment Canada  
YESAB, Dawson Office  
Colleen Parker, Western Arctic Specialist, WWF  
John Kaltenstein, Marine Program Manager, Friends of the Earth



July 13, 2017

David A. Brown  
Staff Environmental Engineer  
Shell Canada Energy  
150 N. Dairy Ashford Road  
Houston, Texas 77079

Dear Mr. Brown:

**Re: N7L1-1834 – Shell Canada Energy, Camp Farewell – Term Amendment of Type “B” Water Licence**

The Inuvialuit Water Board (IWB) is pleased to approve a term amendment of Water Licence N7L1-1834 for closure and remediation and post monitoring activities. In this regard, all terms and conditions for N7L1-1834 will remain as originally issued with the exception of:

1. the extension of the expiry date to July 17, 2029;
2. Part B: General Conditions, Item 12; and
3. Part D: Conditions Applying to Waste Disposal, Item 16.

Each of these are detailed in the attached licence amendment.

A copy of the amended Terms and Conditions and all documentation associated with the term amendment of the licence has been filed in the Public Register. Copies are available at the IWB office and on the IWB Electronic Register located on the IWB website: [www.inuvwb.ca](http://www.inuvwb.ca).

The IWB appreciates the cooperation of Shell Canada Energy in complying with the Terms and Conditions of the Water Licence. Should you have any questions or concerns, please contact Mardy Semmler, Executive Director, at (867) 678-2942.

Sincerely,

Roger Connolly  
Chairperson

Attachments

Copied to: Lloyd Gruben, ENR Water Resources Officer - Inuvik Region





## INUVIALUIT WATER BOARD LICENCE AMENDMENT

---

|                             |                     |
|-----------------------------|---------------------|
| Licensee                    | Shell Canada Energy |
| Licence Number              | N7L1-1834           |
| Effective Date of Amendment | July 18, 2017       |

---

Pursuant to the *Waters Act* and Waters Regulations the Inuvialuit Water Board hereby grants the following Licence Amendment.

### Term of Water Licence

The current expiry date has been extended to July 17, 2029 to ensure consistency with the Closure and Reclamation Plan that includes an eight (8) year monitoring, maintenance, and reporting program following the completion of the permanent closure activities.

### Part B: General Conditions

12. Consultation records, including a summary, with the Hunters and Trappers Committee (HTC) of Tuktoyaktuk must be submitted to the IWB at least thirty (30) days prior to conducting any activities at the site.

### Part D: Conditions Applying to Waste Disposal

16. A barge waste management and disposal plan must be submitted to the IWB at least thirty (30) days prior to mobilization of the barge to the site.

This Licence is amended and recorded at Inuvik, Northwest Territories.

INUVIALUIT WATER BOARD

A handwritten signature in black ink, appearing to be a stylized name, written over a horizontal line.

Chairperson

A handwritten date in black ink, written over a horizontal line.

Date July 13, 2017

**PART A: SCOPE AND DEFINITIONS**

**1. Scope**

- a) This Licence entitles Shell Canada Energy to use water and dispose of Waste as an industrial undertaking associated with oil and gas exploration and development in the Mackenzie Delta at Farewell Camp and Stockpile Site (Camp Farewell) located at Latitude 69°12'30" North, and Longitude 135°06'04" West, Northwest Territories;
- b) This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *Northwest Territories Waters Act*, or other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so deposited or under which any such Waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conforming to such Regulations; and
- c) Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.
- d) This Licence is issued subject to the conditions contained herein with respect to the use of Waters as prescribed in Section 8 of the *Act* and the deposit of Waste to any Waters as prescribed in Section 9 of the *Act*.

**2. Definitions**

In this Licence: **N7L1-1834**

**"Act"** means the *Northwest Territories Waters Act*;

**"Analyst"** means an Analyst designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

**“Average Concentration”** means the discrete average of up to four (4) consecutive analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the “Surveillance Network Program”;

**“Board”** means the Northwest Territories Water Board established under Section 10 of the *Northwest Territories Waters Act*;

**“Freeboard”** means the vertical distance between water line and the lowest elevation of the effective water containment crest on a dam or dyke’s upstream slope;

**“Geotechnical Engineer”** means a professional engineer registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists whose principal field of specialization is the design and construction of earthworks in a permafrost environment;

**“Greywater”** means all liquid Wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet Waste;

**“Inspector”** means an Inspector designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

**“Licensee”** means the holder of this Licence;

**“Minister”** means the Minister of Aboriginal Affairs and Northern Development Canada (AANDC);

**“Modification”** means an alteration to a physical work that introduces a new structure or replaces an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

**“Regulations”** mean Regulations proclaimed pursuant to Section 33 of the *Northwest Territories Waters Act*;

**“Sewage”** means all toilet Wastes and Greywater;

**“Sewage Treatment Facilities”** comprises the area and engineered structures designed to contain Sewage as identified in the project description and also include a Sump constructed of impervious material and/or with an impervious liner;

**“Sump”** means an excavation for the purpose of catching or storing water and/or Waste;

**“Waste”** means Waste as defined by Section 2 of the *Northwest Territories Waters Act*;

**“Waste Disposal Facilities”** mean all facilities designated for the disposal of Waste and include the Sewage disposal facilities, solid Waste disposal facilities, and bagged toilet Wastes disposal facilities;

**“Water Supply Facilities”** mean all facilities designed to collect, treat and supply water for industrial purposes; and

**“Waters”** mean Waters as defined by Section 2 of the *Northwest Territories Waters Act*;

**PART B: GENERAL CONDITIONS**

1. The Licensee shall file an Annual Report with the Board not later than March 31<sup>st</sup> of the year following the calendar year reported which shall contain the following information:
  - a) the monthly and annual quantities in cubic metres of fresh water obtained from all sources;
  - b) the monthly and annual quantities in cubic metres of each and all Waste discharged;
  - c) the location and direction of flow of all Waste discharged to the water or the land;
  - d) a summary of the monthly and annual quantities of Waste stored on site and transported off site;
  - e) the results of sampling carried out under the “Surveillance Network Program”;
  - f) a summary of any Modifications carried out on the Water Supply Facilities and Sewage Treatment Facilities, including all associated structures;
  - g) a list of any spills and unauthorized discharges;
  - h) details on the restoration of any Sumps;
  - i) a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;

- j) a summary of any studies requested by the Board that relate to Waste disposal, water use, or reclamation, and a brief description of any future studies planned;
  - k) notation of updates and/or revisions to the approved Spill Contingency Plan, Waste Disposal Facilities operations and maintenance plan, and sewage treatment plan;
  - l) an outline of any spill training and communications exercises carried out; and
  - m) any other details on water use or Waste disposal requested by the Board within forty-five (45) days before the annual report is due.
2. The Licensee shall comply with the "Surveillance Network Program" annexed to this Licence, and any amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this Licence.
  3. The "Surveillance Network Program" and compliance dates specified in the Licence may be modified at the discretion of the Board.
  4. The Licensee shall, within thirty (30) days of the issuance of this Licence, submit to the Board for approval a map or drawing indicating the location of all Surveillance Network Program sampling stations.
  5. The Licensee shall, within thirty (30) days of the issuance of this Licence, post the necessary signs to identify the stations of the "Surveillance Network Program". All postings shall be located and maintained to the satisfaction of an Inspector.
  6. Any meters, devices or other such methods used for measuring the volumes of water used or Waste disposed and discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
  7. The Licensee shall immediately report to the 24 Hour Spill Report Line (867-920-8130) any spills which are reported to, or observed by, the Licensee within the project boundaries.
  8. All monitoring data shall be submitted in printed form and electronically in spreadsheet format on a diskette or other electronic forms acceptable to the Board.
  9. All reports shall be submitted to the Board in printed format accompanied by an electronic copy in a common word processing format on diskette or other electronic forms acceptable to the Board.

10. Within thirty (30) days of issuance of this Licence, the Licensee shall have posted and shall maintain a security deposit in the amount of Two Million (\$2,000,000.00) Dollars pursuant to Section 17 of the Act and Section 12 of the Regulations, in a form suitable to the Minister. The security deposit shall be maintained until such time as it is fully or in part refunded by the Minister pursuant to Section 17 of the Act.
11. The Licensee shall ensure a copy of this Licence is maintained at the site of operation at all times.

**PART C: CONDITIONS APPLYING TO WATER USE**

1. The Licensee shall obtain water from the Middle Channel of the Mackenzie River in winter or the unnamed lake north of the camp in summer as described in the project description, or as otherwise approved by an Inspector.
2. The daily quantity of water used for all purposes shall not exceed 150 cubic metres.

**PART D: CONDITIONS APPLYING TO WASTE DISPOSAL**

1. The Licensee shall within thirty (30) days of the issuance of this Licence, submit to the Board for approval an updated operation and maintenance plan for the Waste Disposal Facilities. This plan shall include but not necessarily be limited to details on the design, operational capacity, management and maintenance, and disposal of sludges.
2. All Sewage shall be directed to the onsite Sewage Treatment Facilities as approved by an Inspector.
3. The Sewage Treatment Facilities shall be maintained and operated in such a manner as to prevent structural failure to the satisfaction of the Inspector.
4. All Waste discharged from the onsite Sewage lagoon shall be directed to the channel of the Mackenzie River at a location approved by an Inspector.
5. There should be no discharge of floating solids, garbage, grease, free oil or foam.

6. All effluent discharged by the Licensee from the Sewage lagoon at "Surveillance Network Program" Station Number 1834-1 shall meet the following effluent quality requirements:

| Sample Parameter              | Average Concentration      |
|-------------------------------|----------------------------|
| BOD <sub>5</sub>              | 70.0 mg/L                  |
| Total Suspended Solids        | 70.0 mg/L                  |
| Faecal Coliforms              | 1 X 10 <sup>4</sup> CFU/dL |
| Oil and Grease                | 5.0 mg/L                   |
| Total Residual Chlorine (TRC) | 0.1 mg/L                   |

7. The effluent discharged shall have a pH between six (6) and nine (9) and no visible sheen of oil and grease.
8. Introduction of water to Waste for the purpose of achieving effluent quality requirements in Part D, Item 7 is prohibited.
9. A Freeboard limit of 1.0 metre shall be maintained at all times in the Sewage lagoon, or as recommended by a qualified Geotechnical Engineer and/or as approved by the Board.
10. The Licensee shall advise an Inspector at least five (5) days prior to initiating and decant of the Sewage lagoon.
11. All analyses shall be conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of water and Wastewater" or by such other methods as may be approved by an Analyst.
12. The Licensee shall contain all contaminated soil or contaminated snow in such a manner as to minimize the potential for migration of contaminants into any Waters, to the satisfaction of an Inspector.
13. The Licensee shall store, segregate and dispose of all solid and hazardous Wastes in a manner acceptable to the Inspector.
14. Unless authorized by this Licence, the Licensee shall ensure that any Wastes associated with this undertaking do not enter any water body.
15. The Licensee shall submit to the Board a copy of each agreement(s) between third parties to store, transport or dispose of Wastes. The copy submitted to the Board shall include, at a minimum, the following:

- a. type of Waste;
- b. quantities of Waste;
- c. disposal location(s), and
- d. proof of acceptance from third parties.

**PART E: CONDITIONS APPLYING TO MODIFICATIONS**

1. The Licensee may, without written approval from the Board, carry out Modifications to the planned undertakings provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
  - a) the Licensee has notified an Inspector in writing of such proposed Modifications at least five (5) days prior to beginning the Modifications;
  - b) such Modifications do not place the Licensee in contravention of either the Licence or the Act;
  - c) an Inspector has not, during the five (5) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than five (5) days; and
  - d) an Inspector has not rejected the proposed Modifications.
2. Modifications for which all of the conditions referred to in Part F, Item 1 have not been met may be carried out only with written approval from an Inspector.
3. The Licensee shall provide to the Board as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modifications.

**PART F: CONDITIONS APPLYING TO CONTINGENCY PLANNING**

1. The Licensee shall submit to the Board for approval within thirty (30) days of issuance of this Licence an updated Emergency Response & Spill Contingency Plan in accordance, for example, with the *Guidelines for Spill Contingency Planning, April 2007*, developed by AANDC-Water Resources Division.



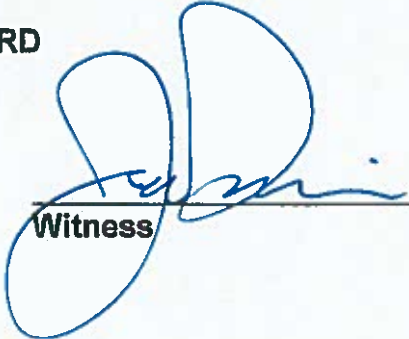
2. The Licensee will maintain a copy of the approved Emergency Response & Spill Contingency Plan onsite in a readily available location, to the satisfaction of an Inspector.
3. The Licensee shall ensure that petroleum products, hazardous material and other Wastes associated with the project do not enter any Waters.
4. The Licensee shall ensure that all containment berms are constructed of an impermeable material, to the satisfaction of an Inspector.
5. The Licensee shall ensure that fuel stored in each tank within the tank farm be no greater than 85% of the tank's capacity to allow for expansion and avoid overflows.
6. If, during the period of this Licence, an unauthorised discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
  - a) report the incident immediately via the 24 Hour Spill Reporting Line (867) 920-8130; and
  - b) submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.

**PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION**

1. The Licensee shall submit to the Board for approval within one (1) year of issuance of this Licence, an updated Interim Abandonment and Restoration Plan including plans for the abandonment and restoration of the Sewage lagoon and a complete Phase II environmental site assessment of Camp Farewell. This assessment will include the full delineation of contamination (soil and water) associated with Camp Farewell operations, located both on and off the gravel base pad.
2. The Licensee shall implement this Plan as and when approved by the Board.
3. Following approval of the Plan, the Licensee shall review the Abandonment and Restoration Plan every two (2) years and shall modify the Plan as necessary to reflect changes in operations and technology. All proposed Modifications to the Plan shall be submitted to the Board for approval.

**NORTHWEST TERRITORIES WATER BOARD**

  
Chairman

  
Witness

Kyle Schepanow

June 6, 2019

IEG Consultants Ltd.

500 – 2618 Hopewell Place NE

Calgary, AB T1Y 7J7

Dear Mr. Schepanow:

**Inuvialuit Water Board License N7L1 – 1834 – Shell Canada Energy Camp Farewell**

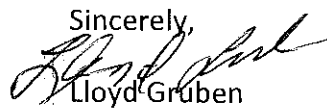
**Proposed Amendment to existing Water License Part C, Item 1.**

I am writing you regarding Water License N7L1 – 1834. Mr. Kyle Schepanow, representing IEG Consultants representing Shell Canada Energy regarding Water License N7L1 – 1834, requesting an amendment to the water license. Right now the current water license Part C, Item 1 states that

1. The licensee shall obtain water from the Middle Channel of the Mackenzir River in the winter or the unnamed lake north of the camp in summer as described in the project description, or as otherwise approved by an inspector.

The amendment requested would be to withdraw water directly from the Middle Channel of the Mackenzie River during summer activities. The water will be used as a potable water source in the Wurmlinger barge camp at the Site. Activities at the Site will be from approximately June 26 through August 31. 2019, **has been approved dated this 6<sup>th</sup> Day of June 2019.**

If you require more information regarding this letter, please call me at the number below.

Sincerely,  
  
Lloyd Gruben

Water Resources Officer

Environment and Natural Resources

P.O. Box 2749

Inuvik , NT X0E 0T0

Ph: 867 – 678 - 6676



**Migratory Bird Sanctuary Permit**  
**issued under section 9 of the *Migratory Bird Sanctuary Regulations, C.R.C., c. 1036* made pursuant to section 12 of the *Migratory Birds Convention Act, 1994, S.C. 1994, c.22***

---

**Permit number:**

MM-NR-2019-NT-003

---

**Valid From:** (yyyy/mm/dd)

2019/06/01

**Expiry date:** (yyyy/mm/dd)

2019/12/31

---

**Report due by:** (yyyy/mm/dd)

12/31/2019

---

**Permit holder:**

Rob Gray  
Shell Canada Energy

---

**Telephone number**

403-384-5091

**Email:**

r.gray@shell.com

---

**Migratory Bird Sanctuary:**

Kendall Island Migratory Bird Sanctuary

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**Activities authorized under this permit:**

Disturb migratory birds or eggs, nests or habitat of migratory birds

Enter a Migratory Bird Sanctuary in CWS Northern Region

Possess any firearm or hunting appliance except as otherwise provided in these Regs (S4)

---

**Species Affected**

All Migratory Birds (SARA Not Included)

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**Location(s) where activities are authorized:**

Kendall Island Migratory Bird Sanctuary (Camp Farewell Site -NAD 83, UTM Zone 8:  
496036.53 E, 7677724.25 N)

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**Specific Terms and Conditions:**

**Permit number:**

MM-NR-2019-NT-003

1. This permit is not transferable and is not valid unless it is signed by the person to whom it is issued. By signing this permit, the permit holder agrees to abide by all conditions stated below and confirms that all information contained in their application was accurate. Permit holders are responsible for the actions of the nominees under this permit.
2. The permit holder and nominees must carry a signed copy of the permit on their person when conducting the activities authorized by the permit. Details of authorized activities are provided in the specific and additional terms and conditions of this permit.
3. The permit holder is responsible for informing the CWS regional office immediately of any changes to nominees or project activities authorized in the permit, and if necessary, applying for a new or amended permit to conduct the new activities.
4. A copy of the permit must be shown to any Game Officer, or other authorized officer, forthwith upon request. The permit holder shall, at all reasonable times, allow a Game Officer, or other authorized officer, to enter and inspect the premises used in their operations and the books and records required to be kept under the permit.
5. The issuance of this permit does not exempt the permit holder from compliance with all relevant Canadian, Provincial and Territorial Laws, and Regulations otherwise applicable, nor does it exempt the permit holder from complying with applicable jurisdictional bylaws.
6. Additional restrictions may be required and may be added to this permit by the Minister if it is deemed necessary to ensure compliance with the Migratory Birds Convention Act and the Migratory Bird Sanctuary Regulations.
7. Regardless of the expiry date of the permit, the Permittee will be responsible for activities and costs associated with the clean-up or restoration of habitat as deemed necessary by Environment and Climate Change Canada, as a result of activities carried out under the authority of this permit. The Permittee shall restore the surface of all altered habitat to a condition as close as possible to its natural state and to the satisfaction of the Minister, in writing.
8. The Permittee shall submit a detailed annual permit report in the proper form (see Canadian Wildlife Service - Northern Region Guidelines for Annual Permit Reports for National Wildlife Area and Migratory Bird Sanctuary Permits) to the Canadian Wildlife Service by December 31 of each year that the permit is valid. Please contact the CWS-Northern Region office for more information.
9. This permit may be revoked at any time at the discretion of the Minister.

**Disturbing migratory birds or eggs, nests or habitat of migratory birds**

1. Authorized activities must be undertaken in such a way as to minimize disturbance to migratory birds and their habitat.
2. At no time shall persons under the authority of this permit feed wildlife, or attempt to attract wildlife into an area of human activity.
3. At no time shall persons under the authority of this permit harass wildlife. This includes persistently circling, chasing, hovering over, pursuing or in any other way harassing wildlife, or disturbing large groups of animals for purposes other than those specified in the additional terms and conditions of this permit.
4. The presence of a wild animal that may potentially create a hazard to people or property shall be reported immediately to the nearest Wildlife Enforcement Officer or RCMP

**Permit number:**

MM-NR-2019-NT-003

officer.

5. The Permittee shall not establish any camps or store equipment or supplies not specifically mentioned in the additional terms and conditions of this permit.
6. The Permittee shall not operate within the Migratory Bird Sanctuary any motorized vehicles, other than those indicated in the additional terms and conditions of this permit.
7. The Permittee shall not move any equipment or vehicles unless the ground is in a state capable of fully supporting the equipment or vehicles without rutting or gouging.
8. The Permittee shall not remove or relocate earth, unless otherwise indicated in the additional terms and conditions of this permit.

Use of a vessel to carry out an activity that is harmful to migratory birds or eggs, nests or habitat of migratory birds

1. Command of a vessel entering the Migratory Bird Sanctuary must notify the Canadian Wildlife Service and Wildlife Enforcement Division 72 hours and 48 hours prior to entering the Migratory Bird Sanctuary at [ec.dalfnord-wednorth.ec@canada.ca](mailto:ec.dalfnord-wednorth.ec@canada.ca)
2. The permit holder is responsible for ensuring that all passengers and crew/clients on board the vessel comply with the permit terms and condition and requirements.
3. All vessels (except small launch vessels) must maintain a minimum distance of 500 m from seabird colonies and concentrations of coastal waterfowl and seaducks, unless otherwise stated on this permit.
4. Unless otherwise stated on this permit, the permit holder shall follow Environment and Climate Change Canada's Guidelines to Avoid Disturbance to Seabird and Waterbird Colonies in Canada, as follows:
  - a. Only approach seabird colonies as close as 100 m in small launch vessels (zodiacs, kayaks, canoes).
  - b. Travel at steady speeds when close to seabird colonies, moving parallel to the shore rather than approaching the colony directly.
  - c. Avoid sharp or loud noises (e.g. sounding the ship's horn) while within the Migratory Bird Sanctuary.
  - d. Do not pursue seabirds or waterbirds swimming on the water surface, and avoid concentrations of these birds on the water.
5. The permittee may only operate in the MBS vessels specifically indicated in the additional terms and conditions of this permit.

Waste and Harmful Substances

1. The Permittee shall ensure that all domestic garbage and other wildlife attractants are inaccessible to wildlife at all times.
2. The Permittee shall regularly collect all waste, debris and domestic garbage and dispose of it using appropriate technology and accepted practices.
3. All access must be "no trace" and all garbage and debris must be removed from the Migratory Bird Sanctuary.

**Permit number:**

MM-NR-2019-NT-003

4. Fuel may not be cached unless the amount and type of fuel to be stored is explicitly stated on this permit. The permittee shall report the location and quantity of all caches of fuel and other substances to the Canadian Wildlife Service within ten (10) days after the cache is established.
5. All fuel containers with a capacity of 205 - 2500 litres must have secondary containment with a holding capacity of 110% of the largest volume of fuel to be stored at the site. Secondary fuel containment shall consist of a barrier such as neoprene with clay liner, or a steel or concrete berm, or similar apparatus approved by the Minister.
6. The Permittee shall not place any fuel storage containers in such a manner that it may enter any waterbody.
7. The Permittee shall permanently mark all fuel containers, including 205 L drums, with the Permittee's name.
8. All leaks and spills of fuel or hazardous material shall be cleaned up immediately. The Permittee shall keep a log of all spills. The log should include amount of spill, specific location including GPS coordinates, and clean-up undertaken. The spill log shall be submitted in the Annual Report.
9. The Permittee shall report all spills to the Nunavut/ NWT 24-hr Spill Report Line (867-920-8130).
10. Any spill area shall be restored as soon as possible to the satisfaction of the Minister, in writing.
11. Cached fuel, including empty fuel containers, must be removed from the Migratory Bird Sanctuary upon cessation of project activities.

**Possess a firearm**

1. Firearms shall only be used for the purpose of protection from wildlife, unless otherwise specified on this permit.

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**Additional Terms and Conditions:**

1. The permittee may only enter the MBS between June 1-August 31 2019 to conduct the following activities at the Camp Farewell Site:
  - a. dismantle and remove the remaining storage building at the site (Shed #1);
  - b. conduct an initial screening soil sampling event to determine the residual hydrocarbon concentrations within shallow soil at the site;
  - c. excavate impacted soil identified during the soil sampling event;
  - d. remove and dispose of (package and transport to an approved facility) waste materials uncovered during excavation activities (i.e. Styrofoam and debris);
  - e. till and/or windrow impacted soil;
  - f. treat windrowed soil on-site with an Allu bucket;
  - g. collect soil samples, as required, and submit for laboratory analysis. Discrete confirmatory soil samples will be collected from the excavation base. Composite soil samples will be collected from tilled areas and windrowed soil

**Permit number:**

MM-NR-2019-NT-003

- h. piles; and
  - h. backfill excavated areas with treated soil that meets applicable guidelines.
2. The permittee may use the following motorized vehicles within the MBS to conduct the activities indicated above at the Camp Farewell Site, as well as transport equipment/personnel via boat and barge through the MBS to the Camp Farewell Site: 1 barge for accommodation purposes, 1 small boat for emergency purposes, 1 fuel truck, 1 rock truck, 1 loader truck, 1 picker truck, 2 ATVs, 2 Excavators, 2 dozers, 1 loader, 1 zoom boom, 2 pick-up trucks, and 1 skid steer.

**Nominee(s):**

| <b>Name</b>      | <b>Organization</b>      |
|------------------|--------------------------|
| David Brown      | Shell Canada Energy      |
| Grahame Bensted  | Shell Canada Energy      |
| Jeff Thompson    | Tervita Corporation Inc. |
| Kyle Schepanow   | IEG Consultants Inc.     |
| Stephanie Hannem | IEG Consultants Inc.     |

I declare that I have read and understand this permit, including all of the terms and conditions, and understand that I (permit holder) may be subject to prosecution for any violations.

**Permit holder (printed name)**

**Rob Gray**




**Permit holder (signature)**

**Date:** 19/05/02 (yyyy/mm/dd)



**Permit number:**

MM-NR-2019-NT-003

|   |  |
|---|--|
| <b>Permit issuer</b> (printed name)   | <b>Permit issuer</b> (signature)   |
| <b>Danica Hogan</b>   |  |
| Canadian Wildlife Service, on behalf of the<br>Minister of Environment and Climate Change<br>Canada | <b>Date:</b> <u>2019/05/02</u> (yyyy/mm/dd)  |

**General Information:**

1. The holder of a migratory bird sanctuary permit must ensure compliance with the Species at Risk Act, S.C. 2002, c. 29 (SARA) when undertaking any actions affecting migratory bird species, or their residences or habitat, that are listed as threatened, endangered or extirpated pursuant to Schedule 1 of SARA.

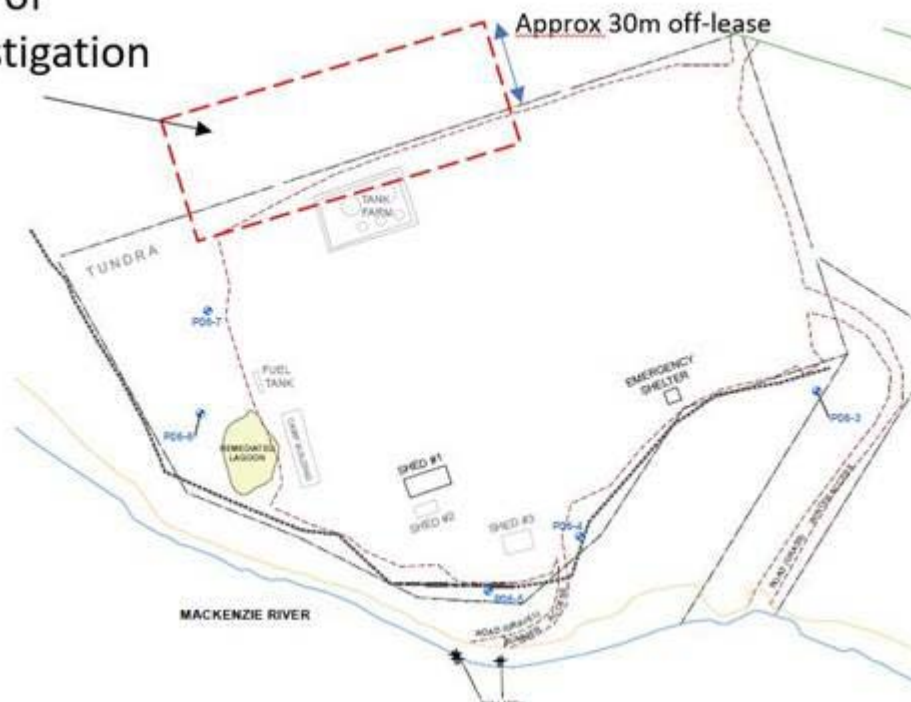
**From:** TNOpermisSCF / CWSpermitNWT (EC) <ec.tnopermisscf-cwspermitnwt.ec@canada.ca>  
**Sent:** July 23, 2019 2:31 PM  
**To:** Schepanow, Kyle  
**Subject:** RE: Off Lease Soil Confirmation Sampling at Camp Farewell

Hi Kyle,

Please keep this email attached to Rob's permit (MM-NR-2019-NT-003) while conducting authorized activities in Kendall Island MBS, as proof of authorization for the following:

- 1) The permittee is authorized to sample soil using a hand auger to a max depth of 1mbgs and perform localized excavation of soil within a 400m x 30m site north and adjacent to the Camp Farewell Site (referred to as the Area of Investigation in the diagram below). This amendment takes effect July 23, 2019.

## Area of Investigation



If you have any questions or concerns regarding the amendment to your permit, please do not hesitate to contact [ec.tnopermisscf-cwspermitnwt.ec@canada.ca](mailto:ec.tnopermisscf-cwspermitnwt.ec@canada.ca) .

Have a great day!

Danica

Danica Hogan

Habitat Specialist, Northern Region, Canadian Wildlife Service (Yellowknife)  
Environment and Climate Change Canada / Government of Canada  
[ec.tnopermisscf-cwspermitnwt.ec@canada.ca](mailto:ec.tnopermisscf-cwspermitnwt.ec@canada.ca) / Tel: 867-669-4754

Spécialiste de l'habitat, Région du Nord, Service canadien de la faune (Yellowknife)  
Environnement et Changement climatique Canada / Gouvernement du Canada  
[ec.tnopermisscf-cwspermitnwt.ec@canada.ca](mailto:ec.tnopermisscf-cwspermitnwt.ec@canada.ca) / Tél. : 867-669-4754

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**From:** Schepanow, Kyle <[KSchepanow@klohn.com](mailto:KSchepanow@klohn.com)>  
**Sent:** July 23, 2019 1:22 PM  
**To:** TNOpermisSCF / CWSpermitNWT (EC) <[ec.tnopermisscf-cwspermitnwt.ec@canada.ca](mailto:ec.tnopermisscf-cwspermitnwt.ec@canada.ca)>  
**Subject:** Re: Off Lease Soil Confirmation Sampling at Camp Farewell

Danica,  
great news. for the dimensions we can assume a length along the north side of the lease boundary of 400m. please update our permit with this new activity.

thanks so very much for your help

Kyle Schepanow

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**From:** TNOpermisSCF / CWSpermitNWT (EC) <[ec.tnopermisscf-cwspermitnwt.ec@canada.ca](mailto:ec.tnopermisscf-cwspermitnwt.ec@canada.ca)>  
**Sent:** Tuesday, July 23, 2019 1:13:44 PM  
**To:** Schepanow, Kyle <[KSchepanow@klohn.com](mailto:KSchepanow@klohn.com)>  
**Subject:** RE: Off Lease Soil Confirmation Sampling at Camp Farewell

Hi Kyle,

Since your permit covers activities on the Camp Farewell Site, and the proposed hand augering and excavation is outside the lease area (site), it would have to be added to your permitted activities to avoid any ambiguity. I can add this to your permit, I just need the dimensions of the "area of investigation" in order to do so (i.e., 30m by **XX** meters).

I'll be away from the office starting tomorrow until mid-August, but if you can send me dimensions today, I can provide you with the amendment.

Danica

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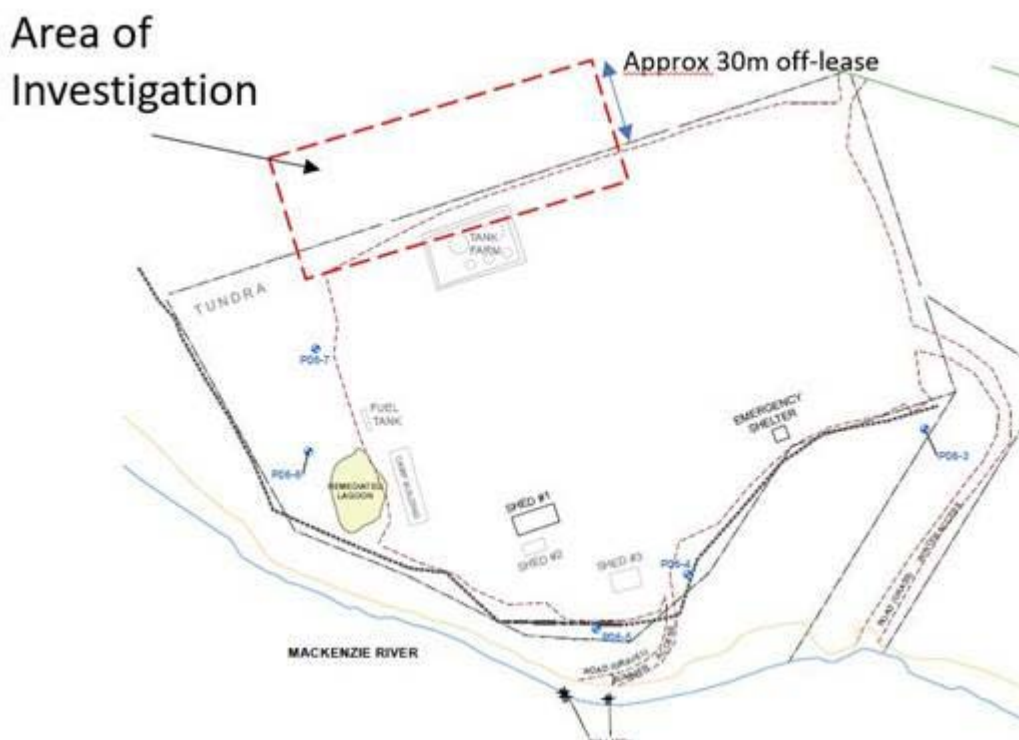
**From:** Schepanow, Kyle <[KSchepanow@klohn.com](mailto:KSchepanow@klohn.com)>  
**Sent:** July 20, 2019 3:10 PM  
**To:** TNOpermisSCF / CWSpermitNWT (EC) <[ec.tnopermisscf-cwspermitnwt.ec@canada.ca](mailto:ec.tnopermisscf-cwspermitnwt.ec@canada.ca)>  
**Subject:** RE: Off Lease Soil Confirmation Sampling at Camp Farewell

Danica (or to whom it may concern),

The adjustment to the permit I am seeking does not include any additional activities. However, the activity is occurring outside the lease boundary (north of the boundary), as outlined in the map below. The only activities we anticipate completing this year in the outlined area would be the following tasks, which are already covered on our existing permit.

- Soil sampling using a hand auger to a max depth of 1mbgs
- Localized excavation of soil along boundary, and potential extending north of the lease boundary

We do not anticipate much in the way of soil excavation outside the boundary, but I wanted to include that possibility in case we begin to chase some impacted soil to the north of the site. This area has some existing vegetation, and based on the results of the soil sampling with the hand auger we would be evaluating the benefit of extending the soil excavation and treatment into the vegetated area.



Please let me know if this work could still be covered under our existing permit, and let me know if you have any further questions.

Regards,

**Kyle Schepanow, M.Sc., P.Geo.**  
*Senior Hydrogeologist*

**Klohn Crippen Berger** 500-2618 Hopewell Place NE, Calgary Alberta T1Y 7J7, CANADA  
T 403.648.4292 | [kschepanow@klohn.com](mailto:kschepanow@klohn.com) | [www.klohn.com](http://www.klohn.com)

If you have received this e-mail in error, please delete the original message.

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**From:** TNOpermisSCF / CWSpermitNWT (EC) <[ec.tnopermisscf-cwspermitnwt.ec@canada.ca](mailto:ec.tnopermisscf-cwspermitnwt.ec@canada.ca)>  
**Sent:** July 19, 2019 2:38 PM  
**To:** Schepanow, Kyle <[KSchepanow@klohn.com](mailto:KSchepanow@klohn.com)>  
**Subject:** RE: Off Lease Soil Confirmation Sampling at Camp Farewell

Hi Kyle,

Can you provide me with a list of activities that you are hoping to add/change on your permit, given the below? A description of what, exactly, you are asking to change will better enable us to decide if this falls within the originally permitted activities.

Also, please be sure to reply to this permitting e-mail, not my person e-mail, as I will shortly be away from the office for an extended period of time.

Thanks,  
Danica

---

**From:** Schepanow, Kyle <[KSchepanow@klohn.com](mailto:KSchepanow@klohn.com)>  
**Sent:** July 19, 2019 1:23 PM  
**To:** Hogan, Danica (EC) <[danica.hogan@canada.ca](mailto:danica.hogan@canada.ca)>  
**Cc:** Hannem, Stephanie <[shannem@klohn.com](mailto:shannem@klohn.com)>; [Grahame.Bensted@shell.com](mailto:Grahame.Bensted@shell.com); MacKenzie, Kim <[kmackenzie@klohn.com](mailto:kmackenzie@klohn.com)>; [David.A.Brown2@shell.com](mailto:David.A.Brown2@shell.com)  
**Subject:** FW: Off Lease Soil Confirmation Sampling at Camp Farewell

Danica,

I am forwarding this email from the GNWT Lands Department regarding our proposed soil sampling program at the Camp Farewell Site. Details of the proposed soil sampling program are included in the email sent to GNWT Lands representative Don Arey. Please see below.

We would like to complete the proposed off-lease soil sampling as part of the 2019 program and we were wondering if you required further assessment or amendments to our current permit. Please let me know if we could proceed with the proposed soil sampling program. And, if you have any questions or concerns please contact me.

Thank you for your time and assistance.

Regards,

**Kyle Schepanow, M.Sc., P.Geo.**  
*Senior Hydrogeologist*

**Klohn Crippen Berger** 500-2618 Hopewell Place NE, Calgary Alberta T1Y 7J7, CANADA  
T 403.648.4292 | [kschepanow@klohn.com](mailto:kschepanow@klohn.com) | [www.klohn.com](http://www.klohn.com)

If you have received this e-mail in error, please delete the original message.

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**From:** Donald Arey <[Donald\\_Arey@gov.nt.ca](mailto:Donald_Arey@gov.nt.ca)>  
**Sent:** July 19, 2019 1:11 PM  
**To:** Schepanow, Kyle <[KSchepanow@klohn.com](mailto:KSchepanow@klohn.com)>  
**Cc:** [Grahame.Bensted@shell.com](mailto:Grahame.Bensted@shell.com); Hannem, Stephanie <[shannem@klohn.com](mailto:shannem@klohn.com)>; MacKenzie, Kim <[kmackenzie@klohn.com](mailto:kmackenzie@klohn.com)>; [David.A.Brown2@shell.com](mailto:David.A.Brown2@shell.com); Dan Carmichael <[Dan\\_Carmichael@gov.nt.ca](mailto:Dan_Carmichael@gov.nt.ca)>; Bradley Voudrach <[Bradley\\_Voudrach@gov.nt.ca](mailto:Bradley_Voudrach@gov.nt.ca)>; Herbert Allen <[Herbert\\_Allen@gov.nt.ca](mailto:Herbert_Allen@gov.nt.ca)>  
**Subject:** RE: Off Lease Soil Confirmation Sampling at Camp Farewell

Kyle

The department of has the following comment to inform; The hand auguring is below territorial permit thresholds and D.O.L. does not have an issue with this. However as this is in the Bird sanctuary it would be best to consult from them to allow this as this is outside the lease boundary. They can be reached at

Environment and Climate Change Canada – Northern Region  
Canadian Wildlife Service  
Western Arctic Unit  
P.O. Box 2310  
5019 52nd Street, 4th Floor  
Yellowknife NT X1A 2P7

Toll Free: 1-800-668-6767 (in Canada only)  
Email: [ec.enviroinfo.ec@canada.ca](mailto:ec.enviroinfo.ec@canada.ca)

Thanks

don

Donald Arey  
Manager, Resource Management (Inspector)  
Department of Lands  
Beaufort Delta Region  
86 Duck Lake Road, Bag Service # 1  
Inuvik NT, X0E 0T0  
(W) 867 777 8906  
(C) 867 678 0056

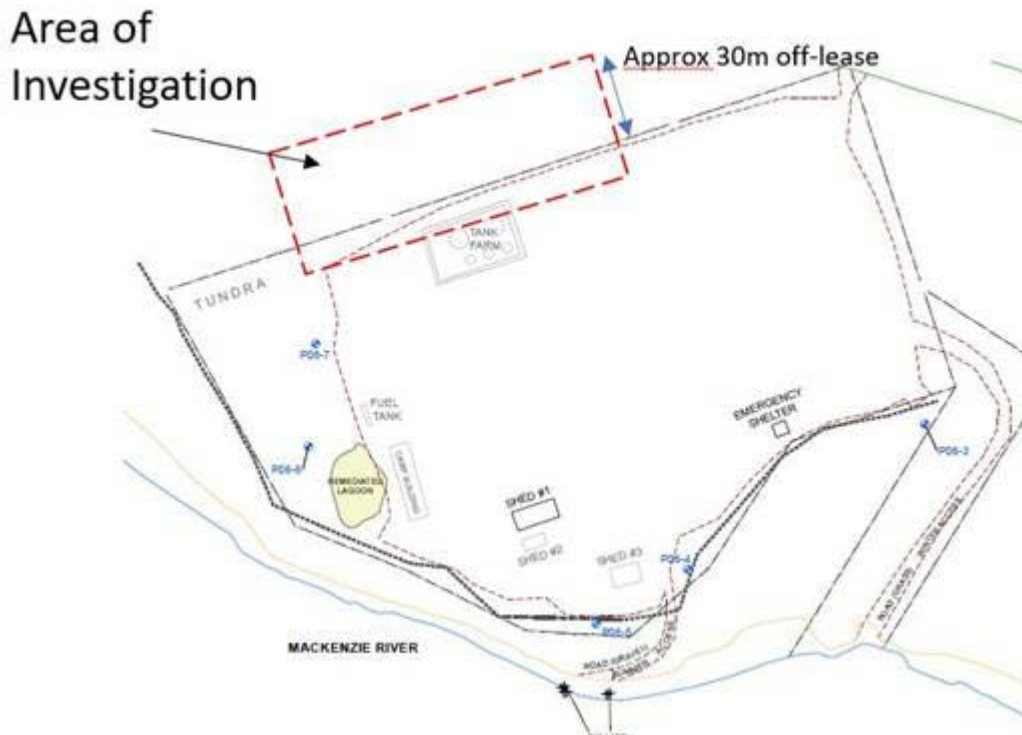
---

**From:** Schepanow, Kyle [<mailto:KSchepanow@klohn.com>]  
**Sent:** Friday, July 19, 2019 11:56 AM  
**To:** Donald Arey  
**Cc:** [Grahame.Bensted@shell.com](mailto:Grahame.Bensted@shell.com); Hannem, Stephanie; MacKenzie, Kim; [David.A.Brown2@shell.com](mailto:David.A.Brown2@shell.com)  
**Subject:** Off Lease Soil Confirmation Sampling at Camp Farewell

Don,

We have noted a need to conduct soe confirmatory soil sampling at extends off the Camp Farewell lease property. We would like to collect some soil samples using a hand auger from areas within the vegetated area north of the lease boundary. See map proposed investigation area. The area is vegetated with mostly grasses and some willows, but our selected field sampling method is low impact. We will not be using any heavy equipment and field staff will be travelling by foot. We are wondering if we can complete this work under our existing permits, or whether we need to seek out an exemption or amendment.

Would you be able to let us know if we can proceed with the soil sampling program? Any information that you could provide would be most helpful.



Thanks for your time and assistance

Regards,

**Kyle Schepanow, M.Sc., P.Geo.**  
*Senior Hydrogeologist*

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## APPENDIX II

# Water Licence N7L1-1834 Reporting Requirements

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## Appendix II Water Licence N7L1-1834 Reporting Requirements

### II-1 CONCORDANCE TABLE

Conditions in Part B through D of Water Licence N7L1-1834, along with the appropriate report section in which they are addressed, are summarized in the concordance table below (Table II-1).

**Table II-1 Water Licence N7L1-1834 Concordance Table**

| No. | Description  | Reference Section<br>in Report                                 | Additional Comments  |
|-----|--|--|--|
| B   | GENERAL CONDITIONS   |  |  |
| 1.  | The Licensee shall file an Annual Report with the Board not later than March 31 <sup>st</sup> of the year following the calendar year reported which shall contain the following information: (See Section II-2)                                       | Appendix II,<br>Section II-2                                   |  |
| 2.  | The Licensee shall comply with the “Surveillance Network Program” annexed to this Licence, and any amendment to the said “Surveillance Network Program” as may be made from time to time, pursuant to the conditions of this Licence.                  | Not applicable   | Sewage lagoon has been decommissioned and remediated.        |
| 3.  | The “Surveillance Network Program” and compliance dates specified in the Licence may be modified at the discretion of the Board.   | Not applicable   | Sewage lagoon has been decommissioned and remediated.        |
| 4.  | The Licensee shall, within thirty (30) days of the issuance of this Licence, submit to the Board for approval a map or drawing indicating the location of all Surveillance Network Program sampling stations.  | Not applicable   | Sewage lagoon has been decommissioned and remediated.        |
| 5.  | The Licensee shall, within thirty (30) days of the issuance of this Licence, post the necessary signs to identify the stations of the “Surveillance Network Program”. All posting shall be located and maintained to the satisfaction of an Inspector. | Not applicable   | Sewage lagoon has been decommissioned and remediated.        |
| 6.  | Any meters, devices or other such methods used for measuring the volumes of water used or Waste disposed and discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.                               | Not applicable   | Sewage lagoon has been decommissioned and remediated.        |
| 7.  | The Licensee shall immediately report to the 24-Hour Spill Report Line (867-920-8130) any spills which are reported to, or observed by, the Licensee within the project boundaries.  | Appendix II,<br>Section II-2, g)                               |  |
| 8.  | All monitoring data shall be submitted in printed form and electronically in a spreadsheet format on a diskette or other electronic forms acceptable to the Board.   | Not applicable   | Sewage lagoon has been decommissioned and remediated.        |
| 9.  | All reports shall be submitted to the Board in printed format accompanied by an electronic copy in a common word processing format on diskette or other electronic forms acceptable to the Board.  | Camp Farewell<br>Remediation<br>Program, Annual<br>Report 2019 | Report has been submitted in printed and electronic formats. |
| 10. | Within thirty (30) days of issuance of this Licence, the Licensee shall have posted and shall maintain a security deposit in the amount of Two Million (\$2,000,000.00)  | Not applicable.  | Security deposit was posted at time of Licence renewal.      |

| No. | Description   | Reference Section<br>in Report | Additional Comments  |
|-----|---|--------------------------------|--|
| B   | GENERAL CONDITIONS  |                                |  |
|     | Dollars pursuant to Section 17 of the Act and Section 12 of the Regulations, in a form suitable to the Minister. The security deposit shall be maintained until such time as it is fully or in part refunded by the Minister pursuant to Section 17 of the Act.   |                                |  |
| 11. | The Licensee shall ensure a copy of this Licence is maintained at the site of operation at all times.   | Not applicable.                | Licence was posted at barge camp for duration of 2019 Remediation Program.   |
| 12. | Consultation records, including a summary, with the Hunters and Trappers Committee (HTC) of Tuktoyaktuk must be submitted to the IWB at least thirty (30) days prior to conducting any activities at the site.  | Not applicable                 | Consultation records were included in Project Description, submitted under separate cover.   |
| C   | CONDITIONS APPLYING TO WATER USE  |                                |  |
| 1.  | The Licensee shall obtain water from the Middle Channel of the Mackenzie River in winter or the unnamed lake north of the camp in summer as described in the project description, or as otherwise approved by an Inspector.   | Appendix II, Section II-2, a)  | Water for daily operation of the camp barge was obtained from a spacer barge and from Middle Channel. Amendment request to withdraw water directly from Middle Channel was approved on June 6, 2019. |
| 2.  | The daily quantity of water used for all purposes shall not exceed 150 cubic metres.  | Appendix II, Section II-2, a)  | Quantity of water obtained did not exceed this limit.  |
| D   | CONDITIONS APPLYING TO WASTE DISPOSAL   |                                |  |
| 1.  | The Licensee shall within thirty (30) days of the issuance of this Licence, submit to the Board for approval an updated operation and maintenance plan for the Waste Disposal Facilities. This plan shall include but not necessarily be limited to details on the design, operational capacity, management and maintenance, and disposal of sludges. | Not applicable                 | Sewage lagoon has been decommissioned and remediated.  |
| 2.  | All sewage shall be directed to the onsite Sewage Treatment Facilities as approved by an Inspector.   | Not applicable                 | Sewage lagoon has been decommissioned and remediated.  |
| 3.  | The Sewage Treatment Facilities shall be maintained and operated in such a manner as to prevent structural failure to the satisfaction of the Inspector.  | Not applicable                 | Sewage lagoon has been decommissioned and remediated.  |
| 4.  | All Waste discharged from the onsite Sewage lagoon shall be directed to the channel of the Mackenzie River at a location approved by an Inspector.  | Not applicable                 | Sewage lagoon has been decommissioned and remediated.  |
| 5.  | There should be no discharge of floating solids, garbage, grease, free oil or foam.   | Not applicable                 | Sewage lagoon has been decommissioned and remediated.  |
| 6.  | All effluent discharged by the Licensee from the Sewage lagoon at "Surveillance Network Program" Station Number   | Not applicable                 | Sewage lagoon has been decommissioned and remediated.  |

| No.                           | Description   | Reference Section             | Additional Comments   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
|-------------------------------|---|-------------------------------|---|------------------|-----------|------------------------|-----------|------------------|----------------------------|----------------|----------|-------------------------------|----------|--|--|
| B                             | GENERAL CONDITIONS  | in Report                     |   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
|                               | <p>1834-1 shall meet the following effluent quality requirements:</p> <table border="1" data-bbox="272 394 873 583"> <thead> <tr> <th data-bbox="272 394 602 424"><u>Sample Parameter</u></th> <th data-bbox="602 394 873 424"><u>Average Concentration</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="272 424 602 453">BOD<sub>5</sub></td> <td data-bbox="602 424 873 453">70.0 mg/L</td> </tr> <tr> <td data-bbox="272 453 602 483">Total Suspended Solids</td> <td data-bbox="602 453 873 483">70.0 mg/L</td> </tr> <tr> <td data-bbox="272 483 602 512">Faecal Coliforms</td> <td data-bbox="602 483 873 512">1 X 10<sup>4</sup> CFU/dL</td> </tr> <tr> <td data-bbox="272 512 602 541">Oil and Grease</td> <td data-bbox="602 512 873 541">5.0 mg/L</td> </tr> <tr> <td data-bbox="272 541 602 571">Total Residual Chlorine (TRC)</td> <td data-bbox="602 541 873 571">0.1 mg/L</td> </tr> </tbody> </table> | <u>Sample Parameter</u>       | <u>Average Concentration</u>  | BOD <sub>5</sub> | 70.0 mg/L | Total Suspended Solids | 70.0 mg/L | Faecal Coliforms | 1 X 10 <sup>4</sup> CFU/dL | Oil and Grease | 5.0 mg/L | Total Residual Chlorine (TRC) | 0.1 mg/L |  |  |
| <u>Sample Parameter</u>       | <u>Average Concentration</u>  |                               |   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| BOD <sub>5</sub>              | 70.0 mg/L   |                               |   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| Total Suspended Solids        | 70.0 mg/L   |                               |   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| Faecal Coliforms              | 1 X 10 <sup>4</sup> CFU/dL  |                               |   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| Oil and Grease                | 5.0 mg/L  |                               |   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| Total Residual Chlorine (TRC) | 0.1 mg/L  |                               |   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| 7.                            | The effluent discharged shall have a pH between six (6) and nine (9) and no visible sheen of oil and grease.  | Not applicable                | Sewage lagoon has been decommissioned and remediated.   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| 8.                            | Introduction of water to Waste for the purpose of achieving effluent quality requirements in Part D, Item 7 is prohibited.  | Not applicable                | Sewage lagoon has been decommissioned and remediated.   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| 9.                            | A Freeboard limit of 1.0 metre shall be maintained at all times in the Sewage lagoon, or as recommended by a qualified Geotechnical Engineer and/or as approved by the Board.   | Not applicable                | Sewage lagoon has been decommissioned and remediated.   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| 10.                           | The Licensee shall advise an Inspector at least five (5) days prior to initiating and decant of the Sewage lagoon.  | Not applicable                | Sewage lagoon has been decommissioned and remediated.   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| 11.                           | All analyses shall be conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of water and Wastewater" or by such other methods as may be approved by an Analyst.   | Not applicable                | Sewage lagoon has been decommissioned and remediated.   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| 12.                           | The Licensee shall contain all contaminated soil or contaminated snow in such a manner as to minimize the potential for migration of contaminants into any Waters, to the satisfaction of an Inspector.   | Section 4.9                   | Contaminated soil backfilled into excavations at end of 2019 Remediation Program.   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| 13.                           | The Licensee shall store, segregate and dispose of all solid and hazardous Wastes in a manner acceptable to the Inspector.  | Appendix II, Section II-2, b) | Solid waste was incinerated on the barge and ashes were returned to Inuvik for disposal at the Inuvik Solid Waste Disposal Facility |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| 14.                           | Unless authorized by this Licence, the Licensee shall ensure that any Wastes associated with this undertaking do not enter any water body.  | Not applicable                | No Wastes entered a water body during the 2019 Remediation Program.   |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |
| 15.                           | <p>The Licensee shall submit to the Board a copy of each agreement(s) between third parties to store, transport or dispose of Wastes. The copy submitted to the Board shall include, at a minimum, the following:</p> <ol style="list-style-type: none"> <li data-bbox="289 1738 493 1768">type of Waste;</li> <li data-bbox="289 1768 553 1797">quantities of Waste;</li> <li data-bbox="289 1797 594 1827">disposal location(s), and</li> <li data-bbox="289 1827 753 1856">proof of acceptance from third parties.</li> </ol>  | Not applicable                | Submitted to the Board at the time of Licence renewal.  |                  |           |                        |           |                  |                            |                |          |                               |          |  |  |

| No. | Description   | Reference Section<br>in Report | Additional Comments  |
|-----|---|--------------------------------|--|
| B   | GENERAL CONDITIONS  |                                |  |
| 16. | A barge waste management and disposal plan must be submitted to the IWB at least thirty (30) days prior to mobilization of the barge to the site. | Not applicable                 | Barge Waste Management and Disposal Plan was submitted under separate cover on May 24, 2019. |

## II-2 PART B, ITEM 1 REPORTING REQUIREMENTS

IEG is providing the following information on behalf of Shell Canada Energy as per the requirements listed in Part B, Item 1. of Water License N7L1-1834. The following responses outline water use and waste discharge during the 2019 field program, conducted between June and September 2019.

**a) Monthly and annual quantities in cubic metres of fresh water obtained from all sources.**

Approximately 60 m<sup>3</sup> of fresh water was obtained from a spacer barge and approximately 27 m<sup>3</sup> of fresh water was obtained from the Middle Channel of the Mackenzie River. This water was used for the daily operation of the camp barge. Fresh water was not obtained from other sources during the 2019 Remediation Program.

**b) Monthly and annual quantities in cubic metres of each and all Waste discharged.**

Waste water generated at the barge camp was contained in a waste water holding AST and returned to Inuvik for disposal by the barge operator. Approximately 175 m<sup>3</sup> of wastewater was generated and was disposed of at the Inuvik Sewage Lagoon.

Domestic waste was incinerated on the barge and the ashes were disposed of at the Inuvik Solid Waste Disposal Facility (SWDF). A total of 450 lbs of domestic waste was burnt in the incinerator during the 2019 field program, resulting in 450 lbs of ash transferred to the Inuvik SWDF.

**c) Location and direction of flow of all Waste discharged to the water or the land.**

Several precipitation events caused water to pond in areas of the excavation over the course of the 2019 Remediation Program. Throughout the program, water was pumped to off-lease vegetated areas, and at the completion of the program, a drainage ditch was constructed at the edge of the gravel pad to direct surface water flow to natural drainage areas in the surrounding landscape. On-site water was monitored for field parameters and checked for visible sheen and was not considered to constitute a Waste. Drainage channel discharge locations are included on report Figure 7.

**d) Summary of monthly and annual quantities of Waste stored on site and transported off site.**

As described in the response to item b), 175 m<sup>3</sup> of waste water was generated at the barge camp and was contained in a waste water holding AST prior to disposal at the Inuvik Sewage Lagoon by the barge operator. Domestic waste was incinerated on the barge and the ashes

were disposed of at the Inuvik SWDF. A total of 450 lbs of domestic waste was burnt in the incinerator during the 2019 field program, resulting in 450 lbs of ash transferred to the Inuvik SWDF.

A total of 432 soil bags and 8 sea-cans of polyurethane foam and other waste materials were removed from the Site in 2019, including 348 soil bags of waste that had been excavated during the 2018 program and stored at the Site over the winter. Waste materials were loaded onto barges and removed from the Site for transfer to the Inuvik SWDF.

**e) Results of sampling carried out under the “Surveillance Network Program”.**

The “Surveillance Network Program” applies to the sewage lagoon (Station Number 1834-1) which was remediated in 2013. Therefore, there has been no sampling carried out under the “Surveillance Network Program” since 2013. Refer to Appendix I for a summary of historical activities at the site or the annual report submitted to the IWB in 2014 entitled “*Camp Farewell Lagoon Remediation*” for additional detail.

**f) Summary of any Modifications carried out on the Water Supply Facilities and Sewage Treatment Facilities, including all associated structures.**

Water Supply Facilities and Sewage Treatment Facilities were removed in 2013. Refer to Appendix I for a summary of historical activities at the Site.

**g) List of any spills and unauthorized discharges.**

There was one unauthorized discharge of ponded runoff from the lease to an off-lease vegetated area, which is described in the response to item c).

There were no other spills or unauthorized discharges during the 2019 Remediation Program.

**h) Details on the restoration of any Sumps.**

There were no sumps restored during the 2019 Remediation Program.

**i) Summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year.**

A summary of work completed in 2019 is included in Sections 4 and 5. Proposed activities for the Site in 2020 are included in Section 10.

**j) Summary of any studies requested by the Board that relate to Waste disposal, water use, or reclamation, and a brief description of any future studies planned.**

There have been no studies requested by the Board that relate to waste disposal, water use or reclamation. There are no future studies planned at this time.

**k) Notation of updates and/or revisions to the approved Spill Contingency Plan, Waste Disposal Facilities operations and maintenance plan, and sewage treatment plan.**

The Waste Disposal Facilities Operations and Maintenance Plan and Sewage Treatment Plan no longer apply as there is no longer waste disposal facilities or a sewage lagoon. Shell requests that these plans be disregarded.

The prime contractor, Tervita, prepared a Site Emergency Response Plan (ERP) for the 2019 remediation program, which included the following directions regarding spill response:

- A Sea can spill kit container will be readily available on site. This kit will have all the necessary equipment and materials to handle minor spills.
- In the event of a spill of any kind, if safe to do so, the spill will be contained and/or controlled and then the area will be cordoned off, the spill will be reported to the Site Supervisor and the Environmental Monitor/Consultant before proceeding with clean up. Appropriate MSDS will be reviewed for safe and proper handling procedures.
- The spill will be handled and cleaned as necessary as well as disposal of such material spilled.

**l) Outline of any spill training and communications exercises carried out.**

The ERP was reviewed with all on-site personnel and posted at the camp accommodations. An overview of appropriate spill response actions and communications was reviewed at morning tailgate meeting.

**m) Any other details on water use or Waste disposal requested by the Board within forty-five (45) days before the annual report is due.**

At the time of reporting, the Board has not requested additional details on water use or waste disposal.

## APPENDIX III

### Site Photographs

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## Appendix III Site Photographs

**Photo 1** View of barge camp secured to on-shore bollards at Camp Farewell.



**Photo 2** Dismantling of Shed #1 with Picker Truck.

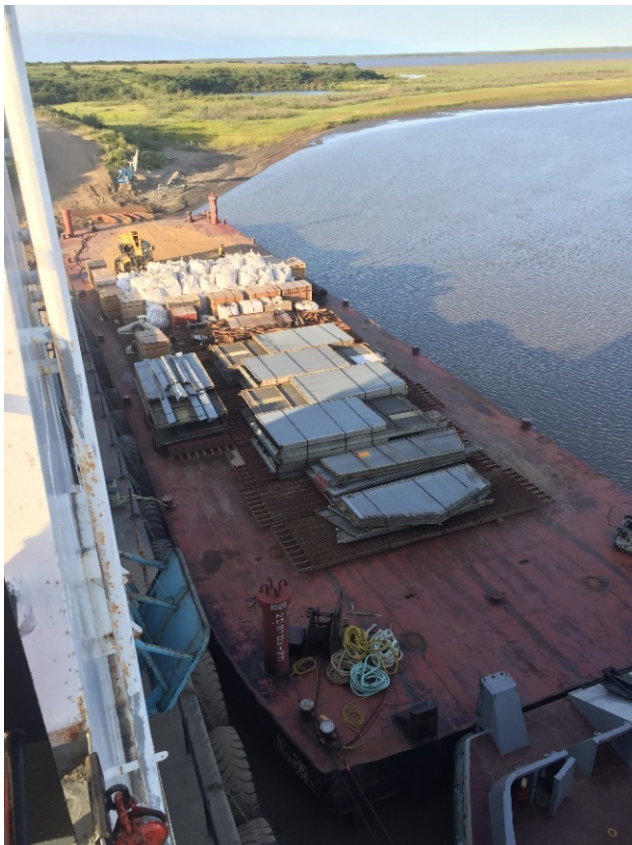




**Photo 3 Treatment of impacted surface soil with ALLU bucket.**



**Photo 4 Waste-filled soil bags and pieces of Shed #1 loaded onto barge for transfer to Inuvik.**



**Photo 5**      **Drainage ditch constructed at north edge of gravel pad.**



**Photo 6**      **Waste materials (straw and fibreglass) encountered in Excavation #3.**



## APPENDIX IV

### Laboratory Data Summary Tables

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**Table 1: Pre-Treatment Screening Soil Sample Analytical Results for Petroleum Hydrocarbons**

| GENERAL  |                      |                          | PETROLEUM HYDROCARBONS |            |              |          |            |            |            |             |
|--|----------------------|--------------------------|------------------------|------------|--------------|----------|------------|------------|------------|-------------|
| Sample Designation                                       | Sample Depth (m bgs) | Sample Date (yyyy-mm-dd) | Benzene                | Toluene    | Ethylbenzene | Xylenes  | F1         | F2         | F3         | F4          |
|  |                      |                          | mg/kg                  | mg/kg      | mg/kg        | mg/kg    | mg/kg      | mg/kg      | mg/kg      | mg/kg       |
| <b>GUIDELINES</b>  |                      |                          |                        |            |              |          |            |            |            |             |
| Residential/Parkland - Surface (0-1.5 m bgs) (GNWT 2003) |                      |                          | <b>0.5</b>             | <b>0.8</b> | <b>1.2</b>   | <b>1</b> | <b>130</b> | <b>150</b> | <b>400</b> | <b>2800</b> |
| <b>RESULTS</b>   |                      |                          |                        |            |              |          |            |            |            |             |
| BH19-098   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 80         | 60         | <10         |
| BH19-099   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 50         | 160        | 40          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 80         | 180        | 50          |
| BH19-100   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 80         | 160        | 40          |
|  | 0-30 (dup)           | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 50         | 150        | 40          |
| BH19-101   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 20         | 100        | 30          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 30         | 60         | 10          |
| BH19-102   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 60         | 270        | 80          |
|  | 30-60                | 2019-07-03               | <0.005                 | 2.43       | <0.01        | <0.05    | <10        | 120        | 1910       | 680         |
| BH19-103   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 20         | 190        | 70          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | <10        | 30         | 20          |
| BH19-104   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 80         | 200        | 60          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 110        | 280        | 80          |
| BH19-105   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 90         | 320        | 80          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 180        | 70         | 20          |
| BH19-106   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 80         | 300        | 80          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 170        | 380        | 90          |
| BH19-107   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 10         | 130        | 50          |
| BH19-108   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | <10        | 70         | 30          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | <10        | 150        | 70          |
| BH19-109   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | <10        | 380        | 180         |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | <10        | 100        | 50          |
| BH19-110   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 30         | 800        | 320         |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | <10        | 10         | <10         |
| BH19-111   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | <10        | 60         | 30          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | <10        | 40         | 20          |
| BH19-112   | 0-30                 | 2019-07-03               | <0.005                 | 0.74       | <0.01        | <0.05    | <10        | <10        | 170        | 70          |
|  | 30-60                | 2019-07-03               | <0.005                 | 0.37       | <0.01        | <0.05    | <10        | <10        | 100        | 50          |
| BH19-113   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 20         | 270        | 140         |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 20         | 240        | 120         |
| BH19-114   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 60         | 150        | 50          |
|  | 30-60                | 2019-07-03               | <0.005                 | 0.87       | <0.01        | <0.05    | <10        | 30         | 180        | 80          |
| BH19-115   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 20         | 170        | 70          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | <10        | 60         | 30          |
| BH19-116   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 30         | 150        | 60          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 10         | 210        | 90          |
| BH19-117   | 0-30                 | 2019-07-03               | 0.021                  | 0.32       | 0.04         | 0.35     | <10        | 60         | 390        | 170         |
|  | 30-60                | 2019-07-03               | 0.016                  | <0.05      | 0.75         | 6.95     | 100        | 20         | 400        | 350         |
| BH19-118   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 330        | 550        | 40          |
|  | 30-60                | 2019-07-03               | 0.006                  | <0.05      | <0.01        | <0.05    | <10        | 190        | 340        | 10          |
| BH19-119   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | 0.02         | 0.12     | 20         | 130        | 260        | <10         |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | 0.02         | 0.13     | 10         | 390        | 410        | 50          |
|  | 30-60 (dup)          | 2019-07-03               | <0.005                 | <0.05      | 0.02         | 0.14     | 10         | 300        | 420        | 70          |
| BH19-120   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 50         | 130        | 10          |
|  | 30-60                | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 90         | 190        | <10         |
| BH19-121   | 0-30                 | 2019-07-03               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 200        | 380        | 60          |
|  | 30-60                | 2019-07-03               | <0.005                 | 0.14       | 0.03         | 0.36     | 100        | 150        | 380        | 90          |

**Notes:**

1. m bgs = metres below ground surface
2. Yellow highlight = exceeds applicable guidelines
3. GNWT 2003 = Government of Northwest Territories (GNWT). 2003. Environmental Guideline for Contaminated Site Remediation. November 2003.





**Table 2: Test Pit and Borehole Soil Sample Analytical Results for Petroleum Hydrocarbons**

| GENERAL  |                      |                          | PETROLEUM HYDROCARBONS |         |              |         |       |       |       |       |             |
|--|----------------------|--------------------------|------------------------|---------|--------------|---------|-------|-------|-------|-------|-------------|
| Sample Designation                                       | Sample Depth (m bgs) | Sample Date (yyyy-mm-dd) |                        |         |              |         |       |       |       |       |             |
|  |                      |                          | Benzene                | Toluene | Ethylbenzene | Xylenes | F1    | F2    | F3    | F4    | Total F1-F3 |
| Units  |                      |                          | mg/kg                  | mg/kg   | mg/kg        | mg/kg   | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg       |
| <b>GUIDELINES</b>  |                      |                          |                        |         |              |         |       |       |       |       |             |
| Residential/Parkland - Surface (0-1.5 m bgs) (GNWT 2003) |                      |                          | 0.5                    | 0.8     | 1.2          | 1       | 130   | 150   | 400   | 2800  | -           |
| Proposed SSRA Criteria (GPRA 2018)                       |                      |                          | -                      | -       | -            | -       | -     | -     | -     | -     | 5000        |
| <b>RESULTS</b>   |                      |                          |                        |         |              |         |       |       |       |       |             |
| <b>North Landfarm Area Confirmatory Test Pits</b>        |                      |                          |                        |         |              |         |       |       |       |       |             |
| TP19-033   | 0-0.3                | 2019-07-21               | <0.005                 | <0.05   | 0.03         | 0.27    | <10   | 280   | 460   | 130   | -           |
|  | 0-0.3 (dup)          | 2019-07-21               | <0.005                 | 0.28    | 0.03         | 0.22    | <10   | 250   | 340   | 80    | -           |
|  | 0.3-0.6              | 2019-07-21               | <0.005                 | 0.06    | 0.01         | 0.09    | <10   | 300   | 530   | 150   | -           |
| TP19-034   | 0-0.3                | 2019-07-21               | 0.011                  | 0.08    | 0.08         | 1.14    | 20    | 330   | 380   | 110   | -           |
|  | 0.3-0.6              | 2019-07-21               | 0.005                  | <0.05   | 0.04         | 0.59    | <10   | 670   | 450   | 80    | -           |
| TP19-035   | 0-0.3                | 2019-07-21               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 170   | 290   | 70    | -           |
|  | 0.3-0.6              | 2019-07-21               | <0.005                 | <0.05   | 0.01         | 0.09    | <10   | 190   | 360   | 90    | -           |
| TP19-036   | 0-0.3                | 2019-07-21               | 0.073                  | 0.14    | 0.84         | 3.47    | 60    | 150   | 320   | 100   | -           |
|  | 0-0.3 (dup)          | 2019-07-21               | 0.056                  | 0.08    | 0.45         | 1.57    | 20    | 210   | 480   | 150   | -           |
|  | 0.3-0.6              | 2019-07-21               | 0.088                  | 0.09    | 1.14         | 4.99    | 50    | 530   | 680   | 220   | -           |
| <b>Excavation #3 Side Wall Confirmatory Test Pits</b>    |                      |                          |                        |         |              |         |       |       |       |       |             |
| TP19-037   | 0.3-0.6              | 2019-07-27               | 0.007                  | <0.05   | 0.04         | 0.22    | <10   | 80    | 20    | <10   | -           |
|  | 0.8                  | 2019-07-27               | 0.157                  | 0.08    | 0.99         | 2.18    | <10   | 20    | 40    | 20    | 60          |
| TP19-038   | 0-0.3                | 2019-07-27               | <0.005                 | <0.05   | 0.01         | 0.08    | <10   | <10   | <10   | <10   | -           |
|  | 0.3-0.6              | 2019-07-27               | 0.117                  | 0.28    | 0.87         | 2.85    | 460   | 2680  | 990   | 120   | -           |
|  | 0.8                  | 2019-07-27               | 2.21                   | 9.99    | 8.1          | 67.1    | 4170  | 31700 | 6580  | 160   | 42450       |
| TP19-039   | 0-0.3                | 2019-07-29               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | <10   | 10    | -           |
|  | 0.3-0.6              | 2019-07-29               | <0.005                 | 1.68    | 1.75         | 6.64    | 260   | 2470  | 510   | 30    | -           |
|  | 0.3-0.6 (dup)        | 2019-07-29               | <0.005                 | 0.31    | 0.57         | 2.01    | 100   | 1540  | 400   | 20    | -           |
|  | 0.8                  | 2019-07-29               | 1.99                   | 5.58    | 0.14         | 0.44    | <10   | 60    | 680   | 320   | 740         |
| TP19-040   | 0-0.3                | 2019-07-29               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 280   | 360   | 40    | -           |
|  | 0.3-0.6              | 2019-07-29               | <0.005                 | <0.05   | 0.06         | 1.05    | 110   | 3290  | 1650  | 60    | -           |
| TP19-041   | 0-0.2                | 2019-07-29               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 470   | 1150  | 80    | -           |
|  | 0.2-0.5              | 2019-07-29               | <0.005                 | <0.05   | 1.1          | 0.87    | 40    | 2080  | 2720  | 60    | -           |
|  | 0.6                  | 2019-07-29               | <0.005                 | 0.05    | 0.33         | 1.12    | <10   | 110   | 230   | 80    | 340         |
| TP19-042   | 0-0.4                | 2019-07-29               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 190   | 740   | 50    | -           |
|  | 0.5                  | 2019-07-29               | 0.034                  | 0.29    | 0.42         | 1.72    | <10   | 380   | 1020  | 270   | -           |
| TP19-043   | 1.0                  | 2019-08-02               | <0.005                 | <0.05   | 0.01         | <0.05   | <10   | <10   | <10   | 10    | 0           |
| TP19-044   | 1.0                  | 2019-08-02               | 0.023                  | <0.05   | 0.18         | 0.75    | <10   | 60    | 390   | 140   | 450         |
| TP19-045   | 0-0.3                | 2019-08-04               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 30    | 30    | -           |
|  | 0.3-0.6              | 2019-08-04               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 20    | 10    | -           |
| TP19-046   | 0-0.3                | 2019-08-04               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 10    | 60    | 10    | -           |
|  | 0.3-0.6              | 2019-08-04               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 240   | 400   | 20    | -           |
| <b>Off-Site (North) Test Pits</b>                        |                      |                          |                        |         |              |         |       |       |       |       |             |
| BH19-122   | 0-0.3                | 2019-08-06               | <0.005                 | <0.05   | 0.01         | 0.06    | <10   | <10   | 30    | <10   | -           |
|  | 0.3-0.45             | 2019-08-06               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 20    | <10   | -           |
| BH19-123   | 0-0.3                | 2019-08-06               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 30    | <10   | -           |
|  | 0.3-0.45             | 2019-08-06               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 30    | <10   | -           |
| BH19-124   | 0-0.3                | 2019-08-06               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 100   | 20    | -           |
|  | 0.3-0.45             | 2019-08-06               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 20    | <10   | -           |
| BH19-125   | 0-0.3                | 2019-08-06               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 180   | 10    | <10   | -           |
| BH19-126   | 0-0.3                | 2019-08-06               | <0.005                 | 1.59    | <0.01        | <0.05   | <10   | <10   | 80    | 10    | -           |
|  | 0.3-0.6              | 2019-08-06               | 0.274                  | 5.75    | 0.17         | 1.9     | <10   | 300   | 200   | 30    | -           |
| BH19-127   | 0-0.3                | 2019-08-06               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 80    | 30    | -           |
|  | 0.3-0.45             | 2019-08-06               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 100   | 30    | -           |
| BH19-128   | 0.15-0.45            | 2019-08-08               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 60    | 560   | 160   | -           |
| BH19-129   | 0.15-0.45            | 2019-08-08               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 20    | 400   | 130   | -           |
| BH19-130   | 0.15-0.45            | 2019-08-08               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 20    | 190   | 40    | -           |
| BH19-131   | 0.15-0.45            | 2019-08-08               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 60    | 2680  | 1070  | -           |
| BH19-132   | 0.15-0.45            | 2019-08-08               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 20    | 380   | 160   | -           |
| BH19-133   | 0.15-0.45            | 2019-08-08               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 50    | 1900  | 630   | -           |
| BH19-134   | 0.15-0.45            | 2019-08-08               | 0.04                   | 0.57    | 4.21         | 14.7    | 830   | 8700  | 1930  | 600   | -           |
| BH19-135   | 0.15-0.45            | 2019-08-08               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | 30    | 240   | 80    | -           |
| <b>Monitoring Well Installation Boreholes</b>            |                      |                          |                        |         |              |         |       |       |       |       |             |
| P19-2  | 0.5-0.8              | 2019-08-21               | 0.058                  | 0.6     | 2.52         | 21.9    | 630   | 700   | 100   | 10    | -           |
|  | 0.8-0.9              | 2019-08-21               | <0.005                 | <0.05   | <0.01        | 0.05    | <10   | 90    | 90    | <10   | 180         |
| P19-3  | 0.7-1.0              | 2019-08-21               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 70    | 20    | 70          |
| P19-4  | 0.6-1.7              | 2019-08-21               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 30    | <10   | 30          |
|  | 1.7-2.1              | 2019-08-21               | <0.005                 | <0.05   | <0.01        | <0.05   | <10   | <10   | 20    | 20    | 20          |
| P19-5  | 0.9-1.2              | 2019-08-21               | <0.005                 | <0.05   | 0.04         | <0.05   | <10   | <10   | <10   | <10   | 0           |
| P19-6  | 0.1-0.4              | 2019-08-21               | <0.005                 | <0.05   | 0.01         | 0.06    | <10   | <10   | 40    | 10    | -           |

**Notes:**

1. m bgs = metres below ground surface
2. Yellow highlight = exceeds applicable guidelines
3. GNWT 2003 = Government of Northwest Territories (GNWT). 2003. Environmental Guideline for Contaminated Site Remediation. November 2003.
4. GPRA 2018 = GatePost Risk Analysis (GPRA). 2018. Site-Specific Risk Assessment: Camp Farewell, Mackenzie Delta, Northwest Territories. Final Report. July 2018.



**Table 3: Interim and Confirmatory Excavation Base Soil Sample Analytical Results for Petroleum Hydrocarbons**

| GENERAL  |                         |                             | PETROLEUM HYDROCARBONS |            |              |          |       |       |       |       |             |
|--|-------------------------|-----------------------------|------------------------|------------|--------------|----------|-------|-------|-------|-------|-------------|
| Sample Designation   | Sample Depth<br>(m bgs) | Sample Date<br>(yyyy-mm-dd) | Benzene                | Toluene    | Ethylbenzene | Xylenes  | F1    | F2    | F3    | F4    | Total F1-F3 |
|  |                         |                             | mg/kg                  | mg/kg      | mg/kg        | mg/kg    | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg       |
| <b>GUIDELINES</b>  |                         |                             |                        |            |              |          |       |       |       |       |             |
| Residential/Parkland - Surface (0-1.5 m bgs) (GNWT 2003)             |                         |                             | <b>0.5</b>             | <b>0.8</b> | <b>1.2</b>   | <b>1</b> | 130   | 150   | 400   | 2800  | -           |
| Proposed SSRA Criteria (GPRA 2018)                                   |                         |                             | -                      | -          | -            | -        | -     | -     | -     | -     | <b>5000</b> |
| <b>INTERIM RESULTS</b>   |                         |                             |                        |            |              |          |       |       |       |       |             |
| EX19-007   | 0.6                     | 2019-07-09                  | 0.365                  | 4.92       | 2.85         | 28.3     | 360   | 3050  | 370   | 40    | 3820        |
| EX19-023   | 0.6                     | 2019-07-14                  | <0.005                 | 0.11       | <0.01        | <0.05    | 160   | 8900  | 1580  | 130   | 10770       |
| EX19-033   | 0.6                     | 2019-07-18                  | <0.005                 | <0.05      | <0.01        | <0.05    | 20    | 2260  | 2670  | 30    | 4980        |
| EX19-037   | 0.6                     | 2019-07-20                  | <0.005                 | <0.05      | <0.01        | 0.05     | <10   | 4650  | 490   | 40    | 5180        |
| EX19-054   | 1.0                     | 2019-07-25                  | <0.005                 | <0.05      | 0.36         | 4.04     | 780   | 4270  | 810   | <10   | 5860        |
| EX19-088   | 1.0                     | 2019-08-04                  | <0.005                 | 0.15       | 1.67         | 2.79     | 140   | 5470  | 1580  | 170   | 7360        |
| <b>CONFIRMATORY RESULTS</b>  |                         |                             |                        |            |              |          |       |       |       |       |             |
| <b>Confirmatory Sampling in vicinity of EX18-161 (Excavation #1)</b> |                         |                             |                        |            |              |          |       |       |       |       |             |
| EX19-001   | 1.0                     | 2019-07-04                  | 0.083                  | 0.95       | 0.29         | 1.36     | 20    | 510   | 90    | 10    | 630         |
| EX19-002   | 1.0                     | 2019-07-04                  | <0.005                 | 0.05       | 0.01         | 0.08     | <10   | 280   | 400   | 70    | 750         |
| EX19-003   | 1.0                     | 2019-07-04                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 50    | 120   | <10   | 170         |
| EX19-004   | 1.0                     | 2019-07-04                  | 0.007                  | 0.3        | 0.11         | 0.54     | <10   | 40    | 10    | <10   | 50          |
| EX19-005   | 1.0                     | 2019-07-04                  | <0.005                 | 0.09       | 0.04         | 0.14     | <10   | <10   | <10   | <10   | 0           |
| <b>Confirmatory Sampling of Excavation #1</b>                        |                         |                             |                        |            |              |          |       |       |       |       |             |
| EX19-057   | 0.6                     | 2019-07-28                  | <0.005                 | 0.09       | 0.06         | 0.17     | <10   | 130   | 140   | 30    | 300         |
| EX19-058   | 0.6                     | 2019-07-28                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 250   | 180   | 50    | 480         |
| EX19-059   | 0.6                     | 2019-07-28                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 340   | 190   | 50    | 580         |
| EX19-060   | 0.6                     | 2019-07-28                  | <0.005                 | <0.05      | <0.01        | <0.05    | 20    | 270   | 270   | 60    | 620         |
| EX19-061   | 0.6                     | 2019-07-28                  | <0.005                 | 0.06       | <0.01        | <0.05    | <10   | 300   | 270   | 70    | 640         |
| <b>Confirmatory Sampling of Excavation #2</b>                        |                         |                             |                        |            |              |          |       |       |       |       |             |
| EX19-006   | 0.6                     | 2019-07-09                  | <0.005                 | 0.25       | <0.01        | <0.05    | <10   | <10   | 180   | 40    | 220         |
| EX19-008   | 0.6                     | 2019-07-09                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 350   | 220   | 40    | 610         |
| EX19-009   | 0.6                     | 2019-07-11                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 50    | 140   | 20    | 210         |
| EX19-010   | 0.6                     | 2019-07-11                  | <0.005                 | 1.22       | 0.02         | 0.07     | <10   | 50    | 220   | 60    | 330         |
| EX19-011   | 0.6                     | 2019-07-11                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 10    | 150   | 50    | 210         |
| EX19-036   | 0.6                     | 2019-07-20                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-038   | 0.6                     | 2019-07-20                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-039   | 0.6                     | 2019-07-20                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-040   | 0.6                     | 2019-07-20                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-041   | 0.6                     | 2019-07-20                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 20    | <10   | 20          |
| EX19-086   | 1.0                     | 2019-08-02                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 200   | 40    | <10   | 240         |
| EX19-087   | 1.0                     | 2019-08-02                  | 0.008                  | <0.05      | <0.01        | <0.05    | <10   | 30    | 20    | 10    | 60          |
| <b>Confirmatory Base Test Pits along Southern Edge of Site</b>       |                         |                             |                        |            |              |          |       |       |       |       |             |
| EX19-012   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 30    | 140   | 40    | 210         |
| EX19-013   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-014A  | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | 10    | 10          |
| EX19-014B  | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | 10    | 10          |
| EX19-015   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | 10    | 10          |
| EX19-016   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | 10    | 10          |
| EX19-017   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | 10    | 10          |
| EX19-018   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | 10    | 10          |
| EX19-019   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 40    | 30    | 70          |
| EX19-020   | 0.6                     | 2019-07-14                  | <0.005                 | 0.1        | 0.01         | <0.05    | <10   | <10   | 280   | 100   | 380         |
| EX19-021   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 10    | 30    | 40          |
| EX19-022   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 110   | 50    | 20    | 180         |
| EX19-024   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 750   | 1260  | 200   | 2210        |
| EX19-025   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 60    | <10   | 60          |
| EX19-026   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 30    | 280   | 60    | 370         |
| EX19-027   | 0.6                     | 2019-07-14                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 40    | 250   | 60    | 350         |
| EX19-028   | 0.6                     | 2019-07-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-029   | 0.6                     | 2019-07-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 40    | 20    | 60          |
| EX19-030   | 0.6                     | 2019-07-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 20    | <10   | 20          |
| EX19-031   | 0.6                     | 2019-07-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-032   | 0.6                     | 2019-07-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 10    | <10   | 10          |
| EX19-042   | 0.6                     | 2019-07-21                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 30    | <10   | 30          |
| EX19-043   | 0.6                     | 2019-07-21                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 50    | 130   | 40    | 220         |
| EX19-044   | 0.6                     | 2019-07-21                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 180   | 90    | 270         |
| EX19-045   | 0.6                     | 2019-07-21                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 50    | 50    | 30    | 130         |
| EX19-046   | 0.6                     | 2019-07-21                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-047   | 0.6                     | 2019-07-21                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-048   | 0.6                     | 2019-07-21                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-049   | 0.6                     | 2019-07-21                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-050   | 0.6                     | 2019-07-21                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 60    | 250   | 120   | 430         |
| EX19-051   | 0.6                     | 2019-07-21                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |

**Notes:**

1. m bgs = metres below ground surface
2. Current and/or applicable guidelines are bolded
3. Yellow highlight = exceeds applicable guidelines
4. GNWT 2003 = Government of Northwest Territories (GNWT). 2003. Environmental Guideline for Contaminated Site Remediation. November 2003.
5. GPRA 2018 = GatePost Risk Analysis (GPRA). 2018. Site-Specific Risk Assessment: Camp Farewell, Mackenzie Delta, Northwest Territories. Final Report. July 2018.

**Table 3: Interim and Confirmatory Excavation Base Soil Sample Analytical Results for Petroleum Hydrocarbons**

| GENERAL  |                      |                          | PETROLEUM HYDROCARBONS |            |              |          |       |       |       |       |             |
|--|----------------------|--------------------------|------------------------|------------|--------------|----------|-------|-------|-------|-------|-------------|
| Sample Designation                                       | Sample Depth (m bgs) | Sample Date (yyyy-mm-dd) | Benzene                | Toluene    | Ethylbenzene | Xylenes  | F1    | F2    | F3    | F4    | Total F1-F3 |
|  |                      |                          | mg/kg                  | mg/kg      | mg/kg        | mg/kg    | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg       |
| <b>GUIDELINES</b>  |                      |                          |                        |            |              |          |       |       |       |       |             |
| Residential/Parkland - Surface (0-1.5 m bgs) (GNWT 2003) |                      |                          | <b>0.5</b>             | <b>0.8</b> | <b>1.2</b>   | <b>1</b> | 130   | 150   | 400   | 2800  | -           |
| Proposed SSRA Criteria (GPRA 2018)                       |                      |                          | -                      | -          | -            | -        | -     | -     | -     | -     | <b>5000</b> |
| <b>CONFIRMATORY RESULTS</b>                              |                      |                          |                        |            |              |          |       |       |       |       |             |
| <b>Confirmatory Sampling of Excavation #3</b>            |                      |                          |                        |            |              |          |       |       |       |       |             |
| EX19-034A  | 0.6                  | 2019-07-18               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 100   | 170   | 20    | 290         |
| EX19-034B  | 0.6                  | 2019-07-18               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 80    | 170   | 10    | 260         |
| EX19-035   | 0.6                  | 2019-07-18               | 0.009                  | 0.18       | 0.28         | 1.27     | 100   | 2690  | 1100  | 90    | 3980        |
| EX19-066   | 1.0                  | 2019-07-29               | 0.006                  | 0.21       | 0.09         | 0.48     | 60    | 770   | 1060  | 140   | 2030        |
| EX19-067   | 1.0                  | 2019-07-29               | <0.005                 | <0.05      | 0.03         | 0.17     | <10   | <10   | 30    | 20    | 50          |
| EX19-068   | 1.0                  | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | 10    | 10          |
| EX19-069   | 0.6                  | 2019-07-30               | 0.014                  | 5.59       | <0.01        | <0.05    | <10   | 20    | 780   | 300   | 1100        |
| EX19-070   | 0.6                  | 2019-07-30               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 20    | 140   | 60    | 220         |
| EX19-071   | 0.6                  | 2019-07-30               | <0.005                 | 0.12       | <0.01        | <0.05    | <10   | 140   | 810   | 280   | 1230        |
| EX19-072   | 0.6                  | 2019-07-30               | <0.005                 | 0.06       | <0.01        | <0.05    | <10   | 70    | 380   | 140   | 590         |
| EX19-073   | 0.6                  | 2019-07-30               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 40    | 20    | 60          |
| EX19-074   | 0.6                  | 2019-07-30               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | 20    | <10   | 20          |
| EX19-075   | 0.6                  | 2019-07-30               | <0.005                 | 0.17       | <0.01        | <0.05    | <10   | 150   | 140   | <10   | 290         |
| EX19-076   | 0.6                  | 2019-07-30               | 0.119                  | 5.03       | <0.01        | <0.05    | <10   | 30    | 980   | 380   | 1390        |
| EX19-077   | 0.6                  | 2019-07-30               | 0.301                  | 5.96       | 0.26         | 0.96     | 10    | 40    | 400   | 150   | 600         |
| EX19-078   | 0.6                  | 2019-07-30               | <0.005                 | 0.1        | <0.01        | <0.05    | <10   | 280   | 780   | 160   | 1220        |
| EX19-079   | 0.6                  | 2019-07-30               | 0.123                  | 1.79       | 0.25         | 1.13     | <10   | 20    | 200   | 70    | 290         |
| EX19-080   | 0.6                  | 2019-07-30               | 0.169                  | 1.36       | 0.19         | 0.46     | <10   | 40    | 680   | 270   | 990         |
| EX19-081   | 0.6                  | 2019-07-30               | <0.005                 | <0.05      | 0.01         | <0.05    | <10   | 150   | 390   | 90    | 630         |
| EX19-082   | 0.6                  | 2019-07-30               | 0.015                  | <0.05      | <0.01        | <0.05    | <10   | <10   | 20    | <10   | 20          |
| EX19-083   | 0.6                  | 2019-07-30               | <0.005                 | 3.28       | <0.01        | <0.05    | <10   | 10    | 710   | 350   | 1070        |
| EX19-084   | 0.6                  | 2019-07-30               | <0.005                 | 0.08       | <0.01        | <0.05    | <10   | 200   | 490   | 180   | 870         |
| EX19-084R  | 0.6                  | 2019-07-30               | <0.005                 | 0.06       | <0.01        | <0.05    | <10   | 160   | 370   | 120   | 650         |
| EX19-085   | 0.6                  | 2019-07-30               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 250   | 220   | 20    | 490         |
| EX19-089   | 1.0                  | 2019-08-04               | 0.202                  | <0.05      | 0.23         | 0.08     | <10   | 50    | 590   | 290   | 930         |
| EX19-091   | 1.2                  | 2019-08-13               | 0.259                  | <0.05      | 1.57         | 3.47     | <10   | 260   | 560   | 260   | 1080        |
| <b>Confirmatory Sampling of Excavation #4</b>            |                      |                          |                        |            |              |          |       |       |       |       |             |
| EX19-052   | 1.0                  | 2019-07-25               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| EX19-053   | 1.0                  | 2019-07-25               | <0.005                 | <0.05      | 0.01         | 0.08     | <10   | <10   | 30    | <10   | 30          |
| EX19-055   | 1.0                  | 2019-07-25               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 40    | 80    | <10   | 120         |
| EX19-056   | 1.0                  | 2019-07-25               | <0.005                 | <0.05      | 0.02         | 0.15     | <10   | <10   | 130   | 50    | 180         |
| EX19-090   | 1.5                  | 2019-08-06               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | <10   | <10   | <10   | 0           |
| <b>Confirmatory Sampling of Excavation #5</b>            |                      |                          |                        |            |              |          |       |       |       |       |             |
| EX19-062   | 0.6                  | 2019-07-28               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 20    | 60    | 20    | 100         |
| EX19-063   | 0.6                  | 2019-07-28               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 80    | 130   | 20    | 230         |
| EX19-064   | 0.6                  | 2019-07-28               | <0.005                 | 0.29       | <0.01        | 0.07     | <10   | 1070  | 960   | 150   | 2180        |
| EX19-065   | 0.6                  | 2019-07-28               | <0.005                 | <0.05      | <0.01        | <0.05    | <10   | 180   | 240   | 60    | 480         |

**Notes:**

1. m bgs = metres below ground surface
2. Current and/or applicable guidelines are bolded
3. Yellow highlight = exceeds applicable guidelines
4. GNWT 2003 = Government of Northwest Territories (GNWT). 2003. Environmental Guideline for Contaminated Site Remediation. November 2003.
5. GPRA 2018 = GatePost Risk Analysis (GPRA). 2018. Site-Specific Risk Assessment: Camp Farewell, Mackenzie Delta, Northwest Territories. Final Report. July 2018.

Table 4: Windrow Soil Sample Analytical Results for Petroleum Hydrocarbons

| GENERAL  |                    |                          | PETROLEUM HYDROCARBONS |       |       |       |       |       |       |       |
|--|--------------------|--------------------------|------------------------|-------|-------|-------|-------|-------|-------|-------|
| Location   | Sample Designation | Sample Date (yyyy-mm-dd) |                        |       |       |       |       |       |       |       |
|  |                    |                          | Units                  | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| <b>GUIDELINES</b>  |                    |                          |                        |       |       |       |       |       |       |       |
| Residential/Parkland - Surface (0-1.5 m bgs) (GNWT 2003) |                    |                          | 0.5                    | 0.8   | 1.2   | 1     | 130   | 150   | 400   | 2800  |
| <b>RESULTS</b>   |                    |                          |                        |       |       |       |       |       |       |       |
| Workshop Windrow   | WRSHOPN - 01       | 2019-07-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 40    | 200   | 60    |
|  | WRSHOPN - 02       | 2019-07-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 90    | 210   | 50    |
|  | WRSHOPN - 03       | 2019-07-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 50    | 150   | 30    |
|  | WRSHOPN - 04       | 2019-07-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 50    | 120   | 20    |
|  | WRSHOPN - 05       | 2019-07-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 80    | 200   | 20    |
|  | WRSHOPN - 06       | 2019-07-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 40    | 120   | 10    |
|  | WRSHOPN - 07       | 2019-07-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 130   | 140   | 10    |
|  | WRSHOPN - 08       | 2019-07-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 30    | 150   | 30    |
| Windrow 1  | WR1-001            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | 30    | 330   | 990   | 320   |
|  | WR1-002            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | 20    | 320   | 920   | 290   |
|  | WR1-003            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | 10    | 380   | 1160  | 360   |
|  | WR1-004            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 280   | 1010  | 330   |
|  | WR1-005            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 350   | 920   | 270   |
|  | WR1-006            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 170   | 780   | 210   |
|  | WR1-007            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 200   | 830   | 240   |
|  | WR1-008            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 220   | 910   | 290   |
|  | WR1-009            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 220   | 740   | 220   |
|  | WR1-010            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 490   | 200   | 50    |
| WR1-R010   | 2019-08-16         | <0.005                   | <0.05                  | <0.01 | <0.05 | <10   | 190   | 790   | 240   |       |
| Windrow 2  | WR2-001            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | 10    | 830   | 340   | 110   |
|  | WR2-002            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 650   | 250   | 80    |
|  | WR2-003            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | 20    | 640   | 230   | 70    |
|  | WR2-004            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 580   | 180   | 50    |
|  | WR2-005            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 770   | 320   | 100   |
|  | WR2-006            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 540   | 210   | 50    |
|  | WR2-007            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 460   | 180   | <10   |
|  | WR2-008            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 510   | 140   | 50    |
|  | WR2-009            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 610   | 260   | 60    |
|  | WR2-010            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 310   | 1070  | 340   |
|  | WR2-011            | 2019-08-16               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 130   | 290   | 80    |
|  | WR2-012            | 2019-08-19               | <0.005                 | <0.05 | <0.01 | <0.05 | 20    | 630   | 290   | 70    |
|  | WR2-013            | 2019-08-19               | <0.005                 | <0.05 | <0.01 | <0.05 | 10    | 500   | 310   | 100   |
|  | WR2-014            | 2019-08-19               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 390   | 230   | 70    |
|  | WR2-015            | 2019-08-19               | <0.005                 | <0.05 | <0.01 | <0.05 | 30    | 540   | 250   | 70    |
| WR2-016  | 2019-08-19         | <0.005                   | <0.05                  | <0.01 | <0.05 | 20    | 490   | 240   | 70    |       |
| WR2-017  | 2019-08-19         | <0.005                   | <0.05                  | <0.01 | <0.05 | 10    | 470   | 280   | 90    |       |
| WR2-R017   | 2019-08-19         | <0.005                   | <0.05                  | <0.01 | <0.05 | 10    | 480   | 330   | 90    |       |
| Windrow 3  | WR3-001            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 20    | 140   | 70    |
|  | WR3-002            | 2019-07-29               | <0.005                 | 0.06  | <0.01 | <0.05 | <10   | 100   | 270   | 110   |
|  | WR3-003            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 80    | 200   | 80    |
|  | WR3-004            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 20    | 140   | 70    |
|  | WR3-005            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 70    | 210   | 80    |
|  | WR3-006            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 30    | 130   | 60    |
| Windrow 4  | WR4-001            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 80    | 200   | 40    |
|  | WR4-002            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 150   | 310   | 70    |
|  | WR4-003            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 270   | 350   | 60    |
|  | WR4-004            | 2019-07-29               | <0.005                 | 0.05  | <0.01 | 0.06  | <10   | 520   | 490   | 70    |
|  | WR4-005            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 250   | 350   | 60    |
|  | WR4-006            | 2019-07-29               | <0.005                 | 0.08  | <0.01 | 0.09  | <10   | 310   | 410   | 70    |
|  | WR4-007            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 220   | 400   | 100   |
|  | WR4-008            | 2019-07-29               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 350   | 500   | 100   |
|  | WR4-009            | 2019-08-12               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 240   | 400   | 50    |
|  | WR4-010            | 2019-08-12               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 150   | 250   | <10   |
|  | WR4-011            | 2019-08-12               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 540   | 660   | 60    |
|  | WR4-012            | 2019-08-12               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 300   | 490   | 90    |
|  | WR4-013            | 2019-08-12               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 350   | 570   | 110   |
|  | WR4-014            | 2019-08-12               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 190   | 320   | <10   |
|  | WR4-015            | 2019-08-12               | <0.005                 | 0.05  | <0.01 | <0.05 | <10   | 390   | 550   | 60    |
|  | WR4-016            | 2019-08-12               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 260   | 450   | 80    |
|  | WR4-017            | 2019-08-18               | <0.005                 | <0.05 | <0.01 | <0.05 | 20    | 150   | 300   | 40    |
|  | WR4-018            | 2019-08-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 160   | 320   | 50    |
|  | WR4-019            | 2019-08-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 150   | 360   | 70    |
|  | WR4-020            | 2019-08-18               | <0.005                 | <0.05 | <0.01 | <0.05 | 20    | 370   | 510   | 60    |
|  | WR4-021            | 2019-08-18               | <0.005                 | <0.05 | <0.01 | <0.05 | 10    | 190   | 350   | 60    |
|  | WR4-022            | 2019-08-18               | <0.005                 | <0.05 | <0.01 | <0.05 | <10   | 160   | 320   | 50    |
| WR4-023  | 2019-08-18         | <0.005                   | <0.05                  | <0.01 | <0.05 | <10   | 120   | 280   | 50    |       |
| WR4-024  | 2019-08-18         | <0.005                   | <0.05                  | <0.01 | <0.05 | <10   | 200   | 370   | 50    |       |

Notes:

1. m bgs = metres below ground surface
2. Yellow highlight = exceeds applicable guidelines
3. GNWT 2003 = Government of Northwest Territories (GNWT). 2003. Environmental Guideline for Contaminated Site Remediation. November 2003.

**Table 4: Windrow Soil Sample Analytical Results for Petroleum Hydrocarbons**

| GENERAL  |                    |                          | PETROLEUM HYDROCARBONS |            |              |          |            |            |            |             |
|--|--------------------|--------------------------|------------------------|------------|--------------|----------|------------|------------|------------|-------------|
| Location   | Sample Designation | Sample Date (yyyy-mm-dd) | Benzene                | Toluene    | Ethylbenzene | Xylenes  | F1         | F2         | F3         | F4          |
|  |                    | Units                    | mg/kg                  | mg/kg      | mg/kg        | mg/kg    | mg/kg      | mg/kg      | mg/kg      | mg/kg       |
| <b>GUIDELINES</b>  |                    |                          |                        |            |              |          |            |            |            |             |
| Residential/Parkland - Surface (0-1.5 m bgs) (GNWT 2003) |                    |                          | <b>0.5</b>             | <b>0.8</b> | <b>1.2</b>   | <b>1</b> | <b>130</b> | <b>150</b> | <b>400</b> | <b>2800</b> |
| <b>RESULTS</b>   |                    |                          |                        |            |              |          |            |            |            |             |
| Windrow 5  | WR5-001            | 2019-07-29               | <0.005                 | <0.05      | 0.02         | 0.26     | <10        | 290        | 480        | 110         |
|  | WR5-002            | 2019-07-29               | <0.005                 | 0.15       | <0.01        | <0.05    | <10        | 380        | 550        | 130         |
|  | WR5-003            | 2019-07-29               | <0.005                 | <0.05      | 0.02         | 0.09     | <10        | 400        | 640        | 140         |
|  | WR5-004            | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 320        | 440        | 90          |
|  | WR5-005            | 2019-07-29               | <0.005                 | 0.06       | <0.01        | 0.07     | <10        | 330        | 430        | 80          |
|  | WR5-R005           | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 320        | 480        | 110         |
|  | WR5-006            | 2019-08-12               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 400        | 550        | 90          |
|  | WR5-007            | 2019-08-12               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 350        | 550        | 90          |
|  | WR5-008            | 2019-08-12               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 290        | 470        | 70          |
|  | WR5-009            | 2019-08-12               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 320        | 490        | 270         |
| WR5-010  | 2019-08-12         | <0.005                   | <0.05                  | <0.01      | <0.05        | <10      | 300        | 490        | 80         |             |
| Windrow 6  | WR6-001            | 2019-07-29               | <0.005                 | <0.05      | <0.01        | 0.05     | <10        | 200        | 280        | 60          |
|  | WR6-002            | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 170        | 250        | 80          |
|  | WR6-003            | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 220        | 260        | 80          |
|  | WR6-004            | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 190        | 350        | 100         |
|  | WR6-005            | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 160        | 280        | 80          |
|  | WR6-006            | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 170        | 220        | 40          |
|  | WR6-007            | 2019-08-12               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 160        | 220        | 30          |
|  | WR6-008            | 2019-08-12               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 300        | 660        | 270         |
|  | WR6-009            | 2019-08-12               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 170        | 240        | 60          |
|  | WR6-010            | 2019-08-12               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 220        | 130        | <10         |
|  | WR6-011            | 2019-08-12               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 200        | 290        | 60          |
|  | WR6-012            | 2019-08-12               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 210        | 280        | 30          |
| Windrow 7  | WR7-001            | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 70         | 300        | 90          |
|  | WR7-002            | 2019-07-29               | <0.005                 | 0.06       | <0.01        | <0.05    | <10        | 90         | 410        | 120         |
|  | WR7-003            | 2019-07-29               | <0.005                 | 0.05       | <0.01        | <0.05    | <10        | 50         | 260        | 80          |
|  | WR7-004            | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 50         | 260        | 80          |
|  | WR7-005            | 2019-07-29               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 60         | 220        | 60          |
| WR7-R005   | 2019-07-29         | <0.005                   | 0.06                   | 0.01       | <0.05        | <10      | 60         | 270        | 80         |             |
| Windrow 8  | WR08-01            | 2019-08-09               | <0.005                 | 0.07       | <0.01        | <0.05    | <10        | 60         | 180        | 40          |
|  | WR08-02            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | 0.05     | <10        | 100        | 470        | 80          |
|  | WR08-03            | 2019-08-09               | <0.005                 | 0.07       | <0.01        | 0.05     | <10        | 100        | 210        | 40          |
|  | WR08-04            | 2019-08-09               | <0.005                 | 0.05       | <0.01        | <0.05    | <10        | 120        | 330        | 80          |
|  | WR08-R04           | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 100        | 250        | 50          |
|  | WR08-05            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 110        | 300        | 70          |
|  | WR08-06            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 90         | 220        | 50          |
| WR08-07  | 2019-08-09         | <0.005                   | <0.05                  | <0.01      | <0.05        | <10      | 80         | 240        | 60         |             |
| Windrow 9  | WR09-01            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | 0.15     | <10        | 160        | 290        | 50          |
|  | WR09-02            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 180        | 320        | 60          |
|  | WR09-03            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 210        | 340        | 60          |
|  | WR09-04            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 150        | 180        | 30          |
|  | WR09-05            | 2019-08-09               | <0.005                 | <0.05      | 0.01         | 0.08     | <10        | 140        | 310        | 70          |
|  | WR09-06            | 2019-08-09               | <0.005                 | 0.11       | <0.01        | <0.05    | <10        | 150        | 280        | 60          |
|  | WR09-07            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | 0.05     | <10        | 80         | 150        | 40          |
|  | WR09-08            | 2019-08-09               | <0.005                 | 0.05       | 0.02         | 0.08     | <10        | 180        | 280        | 50          |
|  | WR9-009            | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 180        | 300        | 50          |
|  | WR9-010            | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 200        | 440        | 130         |
|  | WR9-011            | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 170        | 460        | 130         |
|  | WR9-012            | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 160        | 410        | 120         |
|  | WR9-013            | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 190        | 420        | 140         |
|  | WR9-014            | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 190        | 390        | 90          |
|  | WR9-015            | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 360        | 680        | 130         |
|  | WR9-016            | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 160        | 470        | 130         |
| Windrow 10   | WR10-01            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 220        | 620        | 210         |
|  | WR10-02            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 150        | 330        | 70          |
|  | WR10-03            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 130        | 280        | 30          |
|  | WR10-04            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 70         | 220        | 40          |
|  | WR10-05            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 170        | 360        | 70          |
|  | WR10-06            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 140        | 460        | 130         |
|  | WR10-07            | 2019-08-09               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 200        | 410        | 100         |
|  | WR10-08            | 2019-08-09               | <0.005                 | 0.06       | <0.01        | <0.05    | <10        | 150        | 420        | 120         |
|  | WR10-009           | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 140        | 400        | 40          |
|  | WR10-R009          | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 110        | 300        | 50          |
|  | WR10-010           | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 100        | 300        | 90          |
|  | WR10-011           | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 1090       | 1870       | 1150        |
|  | WR10-012           | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 130        | 500        | 140         |
|  | WR10-013           | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | <10        | 10         | <10         |
|  | WR10-014           | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 80         | 190        | 40          |
|  | WR10-015           | 2019-08-15               | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 130        | 250        | 120         |
| WR10-016   | 2019-08-15         | <0.005                   | <0.05                  | <0.01      | <0.05        | <10      | 120        | 460        | 90         |             |

**Notes:**

1. m bgs = metres below ground surface

2. Yellow highlight = exceeds applicable guidelines

3. GNWT 2003 = Government of Northwest Territories (GNWT). 2003. Environmental Guideline for Contaminated Site Remediation. November 2003.



Table 4: Windrow Soil Sample Analytical Results for Petroleum Hydrocarbons

| GENERAL  |                    |                             | PETROLEUM HYDROCARBONS |            |              |          |            |            |            |             |
|--|--------------------|-----------------------------|------------------------|------------|--------------|----------|------------|------------|------------|-------------|
| Location   | Sample Designation | Sample Date<br>(yyyy-mm-dd) | Benzene                | Toluene    | Ethylbenzene | Xylenes  | F1         | F2         | F3         | F4          |
| Units  |                    |                             | mg/kg                  | mg/kg      | mg/kg        | mg/kg    | mg/kg      | mg/kg      | mg/kg      | mg/kg       |
| <b>GUIDELINES</b>  |                    |                             |                        |            |              |          |            |            |            |             |
| Residential/Parkland - Surface (0-1.5 m bgs) (GNWT 2003) |                    |                             | <b>0.5</b>             | <b>0.8</b> | <b>1.2</b>   | <b>1</b> | <b>130</b> | <b>150</b> | <b>400</b> | <b>2800</b> |
| <b>RESULTS</b>   |                    |                             |                        |            |              |          |            |            |            |             |
| Windrow 11   | WR11-01            | 2019-08-09                  | <0.005                 | 0.11       | <0.01        | <0.05    | <10        | 120        | 440        | 130         |
|  | WR11-02            | 2019-08-09                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 120        | 460        | 150         |
|  | WR11-03            | 2019-08-09                  | 0.036                  | 1.24       | 0.07         | 0.24     | <10        | 110        | 400        | 120         |
|  | WR11-04            | 2019-08-09                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 90         | 300        | 100         |
|  | WR11-05            | 2019-08-09                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 110        | 320        | 90          |
|  | WR11-06            | 2019-08-09                  | <0.005                 | 0.05       | 0.01         | 0.08     | <10        | 250        | 720        | 280         |
|  | WR11-07            | 2019-08-09                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 130        | 420        | 120         |
|  | WR11-08            | 2019-08-09                  | <0.005                 | 0.08       | <0.01        | <0.05    | <10        | 140        | 390        | 90          |
|  | WR11-009           | 2019-08-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 100        | 450        | 100         |
|  | WR11-010           | 2019-08-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 120        | 480        | 30          |
|  | WR11-011           | 2019-08-15                  | <0.005                 | 0.08       | 0.11         | 1.9      | 60         | 90         | 350        | 110         |
|  | WR11-012           | 2019-08-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 80         | 310        | 70          |
|  | WR11-013           | 2019-08-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 160        | 290        | <10         |
|  | WR11-014           | 2019-08-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 400        | 610        | 330         |
|  | WR11-015           | 2019-08-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 480        | 210        | 90          |
|  | WR11-016           | 2019-08-15                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 20         | 380        | 170         |
| Windrow 12   | WR12-001           | 2019-08-09                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 230        | 490        | 120         |
|  | WR12-R01           | 2019-08-09                  | <0.005                 | <0.05      | <0.01        | <0.05    | 10         | 920        | 660        | 80          |
|  | WR12-002           | 2019-08-09                  | <0.005                 | <0.05      | <0.01        | <0.05    | 10         | 290        | 860        | 260         |
|  | WR12-003           | 2019-08-09                  | <0.005                 | <0.05      | <0.01        | <0.05    | 10         | 290        | 400        | 100         |
|  | WR12-004           | 2019-08-16                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 100        | 190        | 70          |
|  | WR12-005           | 2019-08-16                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 60         | 280        | 70          |
|  | WR12-006           | 2019-08-16                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 140        | 270        | <10         |
|  | WR12-007           | 2019-08-19                  | <0.005                 | <0.05      | <0.01        | <0.05    | 10         | 220        | 320        | 90          |
|  | WR12-008           | 2019-08-19                  | <0.005                 | <0.05      | <0.01        | <0.05    | 10         | 130        | 310        | 70          |
| WR12-009   | 2019-08-19         | <0.005                      | <0.05                  | <0.01      | <0.05        | <10      | 200        | 410        | 100        |             |
| Windrow 13   | WR13-001           | 2019-08-09                  | <0.005                 | <0.05      | <0.01        | 0.07     | 40         | 1010       | 190        | 40          |
|  | WR13-002           | 2019-08-09                  | <0.005                 | <0.05      | 0.02         | 0.79     | 140        | 2000       | 300        | 130         |
|  | WR13-003           | 2019-08-09                  | <0.005                 | <0.05      | 0.01         | 0.27     | 70         | 920        | 170        | 40          |
|  | WR13-004           | 2019-08-09                  | <0.005                 | <0.05      | 0.02         | 0.21     | 80         | 1030       | 150        | 10          |
|  | WR13-005           | 2019-08-09                  | <0.005                 | 0.07       | 0.02         | 0.69     | 100        | 1710       | 270        | 50          |
|  | WR13-006           | 2019-08-09                  | <0.005                 | <0.05      | 0.01         | 0.23     | 70         | 1000       | 190        | 30          |
|  | WR13-007           | 2019-08-09                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 380        | 10         | <10         |
|  | WR13-008           | 2019-08-16                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 720        | 170        | 50          |
|  | WR13-009           | 2019-08-16                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 890        | 160        | 40          |
|  | WR13-010           | 2019-08-16                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 670        | 180        | 40          |
|  | WR13-011           | 2019-08-16                  | <0.005                 | <0.05      | <0.01        | 0.08     | <10        | 730        | 260        | 120         |
|  | WR13-012           | 2019-08-16                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 810        | 130        | <10         |
| Windrow 14   | WR14-001           | 2019-08-12                  | 0.005                  | 0.08       | 0.06         | 0.25     | 20         | 960        | 800        | 40          |
|  | WR14-002           | 2019-08-12                  | <0.005                 | 0.1        | 0.02         | 0.08     | <10        | 2020       | 1780       | 170         |
|  | WR14-003           | 2019-08-12                  | <0.005                 | 0.05       | 0.07         | 0.26     | 20         | 1240       | 1050       | 100         |
|  | WR14-004           | 2019-08-12                  | <0.005                 | <0.05      | 0.01         | <0.05    | <10        | 2190       | 1580       | 140         |
|  | WR14-005           | 2019-08-12                  | <0.005                 | 0.07       | 0.08         | 0.17     | 30         | 990        | 940        | 140         |
|  | WR14-006           | 2019-08-12                  | <0.005                 | <0.05      | 0.02         | 0.1      | 20         | 1090       | 1020       | 130         |
|  | WR14-007           | 2019-08-12                  | <0.005                 | <0.05      | <0.01        | <0.05    | <10        | 1290       | 1030       | 80          |
|  | WR14-R007          | 2019-08-12                  | 0.006                  | 0.06       | 0.02         | 0.11     | 20         | 880        | 840        | 100         |
|  | WR14-008           | 2019-08-22                  | <0.005                 | <0.05      | 0.01         | 0.07     | 20         | 590        | 360        | 20          |
|  | WR14-009           | 2019-08-22                  | <0.005                 | <0.05      | <0.01        | <0.05    | 10         | 780        | 520        | 30          |
|  | WR14-010           | 2019-08-22                  | <0.005                 | <0.05      | 0.02         | <0.05    | 20         | 1100       | 760        | 50          |
|  | WR14-011           | 2019-08-22                  | <0.005                 | <0.05      | 0.11         | 0.48     | 20         | 590        | 380        | 20          |
|  | WR14-012           | 2019-08-22                  | <0.005                 | <0.05      | 0.02         | 0.08     | 30         | 650        | 450        | 30          |
|  | WR14-013           | 2019-08-22                  | <0.005                 | <0.05      | <0.01        | <0.05    | 10         | 780        | 470        | 30          |
| WR14-014   | 2019-08-22         | <0.005                      | <0.05                  | 0.01       | 0.05         | 20       | 990        | 710        | 60         |             |

- Notes:
1. m bgs = metres below ground surface
  2. Yellow highlight = exceeds applicable guidelines
  3. GNWT 2003 = Government of Northwest Territories (GNWT). 2003. Environmental Guideline for Contaminated Site Remediation. November 2003.

Table 5: Summary of Soil Quality Assurance / Quality Control Results for Petroleum Hydrocarbons

| GENERAL                                      |                      |                          | PETROLEUM HYDROCARBONS |                      |                      |                      |       |       |       |       |
|--|----------------------|--------------------------|------------------------|----------------------|----------------------|----------------------|-------|-------|-------|-------|
| Sample Designation                           | Sample Depth (m bgs) | Sample Date (yyyy-mm-dd) | Benzene                | Toluene              | Ethylbenzene         | Xylenes              | E1    | E2    | E3    | E4    |
| Units  |                      |                          | mg/kg                  | mg/kg                | mg/kg                | mg/kg                | mg/kg | mg/kg | mg/kg | mg/kg |
| <b>Reported Detection Limits</b>             |                      |                          | 0.005                  | 0.05                 | 0.01                 | 0.05                 | 10    | 10    | 10    | 10    |
| BH19-060A                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 50    | 150   | 40    |
| BH19-060B                                    | 0-0.3                | 2019-07-02               | <0.005                 | 0.07                 | 0.03                 | <0.05                | <10   | 10    | 100   | 30    |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | -                    | -                    | 0%                   | 0%    | 133%  | 40%   | 29%   |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0.045 <sup>(a)</sup> | 0.025 <sup>(a)</sup> | 0                    | 0     | 40    | 50    | 10    |
| BH19-064A                                    | 0-0.3                | 2019-07-02               | <0.005                 | 0.06                 | 0.01                 | 0.06                 | <10   | 90    | 310   | 70    |
| BH19-064C                                    | 0-0.3                | 2019-07-02               | 0.008                  | 0.1                  | 0.01                 | 0.07                 | <10   | 150   | 400   | 80    |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | -                      | 50%                  | 0%                   | 15%                  | 0%    | 50%   | 25%   | 13%   |
| <b>Absolute Difference</b>                   |                      |                          | 0.0055 <sup>(a)</sup>  | 0.04                 | 0                    | 0.01                 | 0     | 60    | 90    | 10    |
| BH19-068B                                    | 0.3-0.6              | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 140   | 320   | 60    |
| BH19-068D                                    | 0.3-0.6              | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 140   | 310   | 60    |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | 0%                   | 0%    | 0%    | 3%    | 0%    |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0                    | 0     | 0     | 10    | 0     |
| BH19-070A                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | <0.01                | 0.05                 | <10   | 160   | 250   | 30    |
| BH19-070C                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 190   | 230   | 20    |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | -                    | 0%    | 17%   | 8%    | 40%   |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0.025 <sup>(a)</sup> | 0     | 30    | 20    | 10    |
| BH19-071A                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 30    | 290   | 80    |
| BH19-071C                                    | 0-0.3                | 2019-07-02               | <0.005                 | 0.13                 | 0.03                 | 0.16                 | <10   | 40    | 450   | 130   |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | -                    | -                    | -                    | 0%    | 29%   | 43%   | 48%   |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0.105 <sup>(a)</sup> | 0.025 <sup>(a)</sup> | 0.135 <sup>(a)</sup> | 0     | 10    | 160   | 50    |
| BH19-075A                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | 0.01                 | 0.05                 | <10   | 20    | 130   | 40    |
| BH19-075C                                    | 0-0.3                | 2019-07-02               | <0.005                 | 0.09                 | <0.01                | <0.05                | <10   | 20    | 130   | 40    |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | -                    | -                    | -                    | 0%    | 0%    | 0%    | 0%    |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0.065 <sup>(a)</sup> | 0.005 <sup>(a)</sup> | 0.025 <sup>(a)</sup> | 0     | 0     | 0     | 0     |
| BH19-078A                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 80    | 620   | 220   |
| BH19-078C                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 60    | 390   | 140   |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | 0%                   | 0%    | 29%   | 46%   | 44%   |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0                    | 0     | 20    | 230   | 80    |
| BH19-081A                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 40    | 200   | 70    |
| BH19-081C                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 30    | 370   | 160   |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | 0%                   | 0%    | 29%   | 60%   | 78%   |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0                    | 0     | 10    | 170   | 90    |
| BH19-084A                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 30    | 130   | 50    |
| BH19-084C                                    | 0-0.3                | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 20    | 80    | 30    |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | 0%                   | 0%    | 40%   | 48%   | 50%   |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0                    | 0     | 10    | 50    | 20    |
| BH19-092B                                    | 0.3-0.6              | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 120   | 400   | 140   |
| BH19-092D                                    | 0.3-0.6              | 2019-07-02               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 130   | 450   | 150   |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | 0%                   | 0%    | 8%    | 12%   | 7%    |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0                    | 0     | 10    | 50    | 10    |
| BH19-100A                                    | 0-0.3                | 2019-07-03               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 80    | 160   | 40    |
| BH19-100B                                    | 0-0.3                | 2019-07-03               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 50    | 150   | 40    |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | 0%                   | 0%    | 46%   | 6%    | 0%    |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0                    | 0     | 30    | 10    | 0     |
| BH19-119B                                    | 0.3-0.6              | 2019-07-03               | <0.005                 | <0.05                | 0.02                 | 0.13                 | 10    | 390   | 410   | 50    |
| BH19-119D                                    | 0.3-0.6              | 2019-07-03               | <0.005                 | <0.05                | 0.02                 | 0.14                 | 10    | 300   | 420   | 70    |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | 7%                   | 0%    | 26%   | 2%    | 33%   |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0.01                 | 0     | 90    | 10    | 20    |
| TP19-006                                     | 0.3-0.5              | 2019-07-06               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 160   | 250   | 140   |
| TP19-106                                     | 0.3-0.5              | 2019-07-06               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 130   | 270   | 160   |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | 0%                   | 0%    | 21%   | 8%    | 13%   |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0                    | 0     | 30    | 20    | 20    |
| TP19-016A                                    | 0-0.3                | 2019-07-13               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 150   | 390   | 100   |
| TP19-016C                                    | 0-0.3                | 2019-07-13               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 180   | 450   | 120   |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | 0%                   | 0%    | 18%   | 14%   | 18%   |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0                    | 0     | 30    | 60    | 20    |
| TP19-017B                                    | 0.3-0.6              | 2019-07-13               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 140   | 270   | 40    |
| TP19-017D                                    | 0.3-0.6              | 2019-07-13               | <0.005                 | <0.05                | <0.01                | <0.05                | <10   | 200   | 450   | 120   |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                     | 0%                   | 0%                   | 0%                   | 0%    | 35%   | 50%   | 100%  |
| <b>Absolute Difference</b>                   |                      |                          | 0                      | 0                    | 0                    | 0                    | 0     | 60    | 180   | 80    |

Notes:

1. Applicable values (RPD or AD) are bolded. RPD is applicable if parameter concentrations in both samples are greater than or equal to 5x the detection limit; otherwise AD is applicable
2. Yellow highlight = exceeds Zeiner criteria (RPD must be less than or equal to 40%, or AD is greater than twice the reported detection limit)
3. View analytical report for more comprehensive results
4. <sup>(a)</sup> = Difference between the reported concentration and half the detection limit

Table 5: Summary of Soil Quality Assurance / Quality Control Results for Petroleum Hydrocarbons

| GENERAL                                      |                      |                          | PETROLEUM HYDROCARBONS      |                            |                            |                             |                         |             |             |             |
|--|----------------------|--------------------------|-----------------------------|----------------------------|----------------------------|-----------------------------|-------------------------|-------------|-------------|-------------|
| Sample Designation                           | Sample Depth (m bgs) | Sample Date (yyyy-mm-dd) | Benzene                     | Toluene                    | Ethylbenzene               | Xylenes                     | E1                      | E2          | E3          | E4          |
| Units  |                      |                          | mg/kg                       | mg/kg                      | mg/kg                      | mg/kg                       | mg/kg                   | mg/kg       | mg/kg       | mg/kg       |
| <b>Reported Detection Limits</b>             |                      |                          | 0.005                       | 0.05                       | 0.01                       | 0.05                        | 10                      | 10          | 10          | 10          |
| EX19-014A                                    | 0.6                  | 2019-07-14               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | <10         | <10         | 10          |
| EX19-014B                                    | 0.6                  | 2019-07-14               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | <10         | <10         | 10          |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | 0%                         | 0%                         | 0%                          | 0%                      | 0%          | 0%          | 0%          |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0</b>                   | <b>0</b>                   | <b>0</b>                    | <b>0</b>                | <b>0</b>    | <b>0</b>    | <b>0</b>    |
| EX19-034A                                    | 0.6                  | 2019-07-18               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 100         | 170         | 20          |
| EX19-034B                                    | 0.6                  | 2019-07-18               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 80          | 170         | 10          |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | 0%                         | 0%                         | 0%                          | 0%                      | <b>22%</b>  | <b>0%</b>   | 67%         |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0</b>                   | <b>0</b>                   | <b>0</b>                    | <b>0</b>                | 20          | 0           | <b>10</b>   |
| TP19-033A                                    | 0-0.3                | 2019-07-21               | <0.005                      | <0.05                      | 0.03                       | 0.27                        | <10                     | 280         | 460         | 130         |
| TP19-033C                                    | 0-0.3                | 2019-07-21               | <0.005                      | 0.28                       | 0.03                       | 0.22                        | <10                     | 250         | 340         | 80          |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | -                          | 0%                         | 20%                         | 0%                      | <b>11%</b>  | <b>30%</b>  | <b>48%</b>  |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0.255<sup>(a)</sup></b> | <b>0</b>                   | <b>0.05</b>                 | <b>0</b>                | 30          | 120         | 50          |
| TP19-036A                                    | 0-0.3                | 2019-07-21               | 0.073                       | 0.14                       | 0.84                       | 3.47                        | 60                      | 150         | 320         | 100         |
| TP19-036C                                    | 0-0.3                | 2019-07-21               | 0.056                       | 0.08                       | 0.45                       | 1.57                        | 20                      | 210         | 480         | 150         |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | <b>26%</b>                  | <b>55%</b>                 | <b>60%</b>                 | <b>75%</b>                  | <b>100%</b>             | <b>33%</b>  | <b>40%</b>  | <b>40%</b>  |
| <b>Absolute Difference</b>                   |                      |                          | 0.017                       | <b>0.06</b>                | 0.39                       | 1.9                         | <b>40</b>               | 60          | 160         | 50          |
| TP19-039B                                    | 0.3-0.6              | 2019-07-29               | <0.005                      | 1.68                       | 1.75                       | 6.64                        | 260                     | 2470        | 510         | 30          |
| TP19-039D                                    | 0.3-0.6              | 2019-07-29               | <0.005                      | 0.31                       | 0.57                       | 2.01                        | 100                     | 1540        | 400         | 20          |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | <b>138%</b>                | <b>102%</b>                | <b>107%</b>                 | <b>89%</b>              | <b>46%</b>  | <b>24%</b>  | 40%         |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | 1.37                       | 1.18                       | 4.63                        | 160                     | 930         | 110         | <b>10</b>   |
| WR5-005                                      | -                    | 2019-07-29               | <0.005                      | 0.06                       | <0.01                      | 0.07                        | <10                     | 330         | 430         | 80          |
| WR5-R005                                     | -                    | 2019-07-29               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 320         | 480         | 110         |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | -                          | 0%                         | -                           | 0%                      | <b>3%</b>   | <b>11%</b>  | <b>32%</b>  |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0.035<sup>(a)</sup></b> | <b>0</b>                   | <b>0.045<sup>(a)</sup></b>  | <b>0</b>                | 10          | 50          | 30          |
| WR7-005                                      | -                    | 2019-07-29               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 60          | 220         | 60          |
| WR7-R005                                     | -                    | 2019-07-29               | <0.005                      | 0.06                       | 0.01                       | <0.05                       | <10                     | 60          | 270         | 80          |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | -                          | -                          | 0%                          | 0%                      | <b>0%</b>   | <b>20%</b>  | <b>29%</b>  |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0.035<sup>(a)</sup></b> | <b>0.005<sup>(a)</sup></b> | <b>0</b>                    | <b>0</b>                | 0           | 50          | 20          |
| EX19-084                                     | 0.6                  | 2019-07-30               | <0.005                      | 0.08                       | <0.01                      | <0.05                       | <10                     | 200         | 490         | 180         |
| EX19-084R                                    | 0.6                  | 2019-07-30               | <0.005                      | 0.06                       | <0.01                      | <0.05                       | <10                     | 160         | 370         | 120         |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | 29%                        | 0%                         | 0%                          | 0%                      | <b>22%</b>  | <b>28%</b>  | <b>40%</b>  |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0.02</b>                | <b>0</b>                   | <b>0</b>                    | <b>0</b>                | 40          | 120         | 60          |
| WR08-004                                     | -                    | 2019-08-09               | <0.005                      | 0.05                       | <0.01                      | <0.05                       | <10                     | 120         | 330         | 80          |
| WR08-R04                                     | -                    | 2019-08-09               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 100         | 250         | 50          |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | -                          | 0%                         | 0%                          | 0%                      | <b>18%</b>  | <b>28%</b>  | <b>46%</b>  |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0.025<sup>(a)</sup></b> | <b>0</b>                   | <b>0</b>                    | <b>0</b>                | 20          | 80          | 30          |
| WR12-001                                     | -                    | 2019-08-09               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 230         | 490         | 120         |
| WR12-R01                                     | -                    | 2019-08-09               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | 10                      | 920         | 660         | 80          |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | 0%                         | 0%                         | 0%                          | -                       | <b>120%</b> | <b>30%</b>  | <b>40%</b>  |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0</b>                   | <b>0</b>                   | <b>0</b>                    | 5 <sup>(a)</sup>        | 690         | 170         | 40          |
| WR14-007                                     | -                    | 2019-08-12               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 1290        | 1030        | 80          |
| WR14-R007                                    | -                    | 2019-08-12               | 0.006                       | 0.06                       | 0.02                       | 0.11                        | 20                      | 880         | 840         | 100         |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | -                           | -                          | -                          | -                           | -                       | <b>38%</b>  | <b>20%</b>  | <b>22%</b>  |
| <b>Absolute Difference</b>                   |                      |                          | <b>0.0035<sup>(a)</sup></b> | <b>0.035<sup>(a)</sup></b> | <b>0.015<sup>(a)</sup></b> | <b>0.1075<sup>(a)</sup></b> | <b>15<sup>(a)</sup></b> | 410         | 190         | 20          |
| WR10-009                                     | -                    | 2019-08-15               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 140         | 400         | 40          |
| WR10-R009                                    | -                    | 2019-08-15               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 110         | 300         | 50          |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | 0%                         | 0%                         | 0%                          | 0%                      | <b>24%</b>  | <b>29%</b>  | <b>22%</b>  |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0</b>                   | <b>0</b>                   | <b>0</b>                    | <b>0</b>                | 30          | 100         | 10          |
| WR1-010                                      | -                    | 2019-08-16               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 490         | 200         | 50          |
| WR1-R010                                     | -                    | 2019-08-16               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | <10                     | 190         | 790         | 240         |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | 0%                         | 0%                         | 0%                          | 0%                      | <b>88%</b>  | <b>119%</b> | <b>131%</b> |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0</b>                   | <b>0</b>                   | <b>0</b>                    | <b>0</b>                | 300         | 590         | 190         |
| WR2-017                                      | -                    | 2019-08-19               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | 10                      | 470         | 280         | 90          |
| WR2-R017                                     | -                    | 2019-08-19               | <0.005                      | <0.05                      | <0.01                      | <0.05                       | 10                      | 480         | 330         | 90          |
| <b>Relative Percent Difference (RPD) (%)</b> |                      |                          | 0%                          | 0%                         | 0%                         | 0%                          | 0%                      | <b>2%</b>   | <b>16%</b>  | <b>0%</b>   |
| <b>Absolute Difference</b>                   |                      |                          | <b>0</b>                    | <b>0</b>                   | <b>0</b>                   | <b>0</b>                    | <b>0</b>                | 10          | 50          | 0           |

Notes:

1. Applicable values (RPD or AD) are bolded. RPD is applicable if parameter concentrations in both samples are greater than or equal to 5x the detection limit; otherwise AD is applicable
2. Yellow highlight = exceeds Zeiner criteria (RPD must be less than or equal to 40%, or AD is greater than twice the reported detection limit)
3. View analytical report for more comprehensive results
4. <sup>(a)</sup> = Difference between the reported concentration and half the detection limit



| Monitoring Well ID | Date (yyyy-mm-dd) | Ground Elevation (m asl) <sup>(1)</sup> | Casing Elevation (m asl) | Well Stickup (m) | Top of Screen (m bgs) <sup>(2)</sup> | Bottom of Screen (m bgs) <sup>(3)</sup> | Total Depth (m btoc) | Depth to Groundwater (m bgs) | Depth to Groundwater (m btoc) <sup>(3)</sup> | Notes  |
|--------------------|-------------------|---|--------------------------|------------------|--------------------------------------|---|----------------------|------------------------------|--|--|
| P06-1              | 2019-08-19        | 13.57                                   | 13.71                    | 0.14             | 0.15                                 | 0.56                                    | 0.924                | 0.130                        | 0.270  | Well sheared off at ground surface, repaired with new cap, not sampled in 2019. Needs further repair |
| P06-2              | 2019-08-19        | 12.56                                   | 12.96                    | 0.40             | 0.24                                 | 0.65                                    | 0.617                | 0.210                        | 0.610  | Well in good condition, but some infill of sediment in well, not sampled in 2019                     |
| P06-3              | 2019-08-21        | 10.21                                   | 11.01                    | 0.40             | 0.39                                 | 0.80                                    | 1.079                | -                            | 0.421  | Well not found, assumed destroyed  |
| P06-4              | 2019-08-21        | 11.25                                   | 12.05                    | 0.80             | 1.07                                 | 1.80                                    | 2.485                | dry                          | -  |  |
| P06-5              | 2019-08-21        | 10.43                                   | 10.43                    | 0.00             | 0.29                                 | 0.70                                    | 2.700                | -                            | 2.391  | Well not found, assumed destroyed  |
| P06-6              | 2019-08-21        | 14.32                                   | 15.37                    | 1.05             | 0.20                                 | 0.93                                    | 2.372                | 0.730                        | 1.780  | Well in good condition   |
| P06-7              | 2019-08-21        | 14.73                                   | 15.41                    | 0.68             | 0.15                                 | 0.56                                    | 1.170                | 0.280                        | 0.960  | Well repaired in 2019  |
| P19-2              | 2019-08-21        | TBD                                     | TBD                      | 0.68             | 0.40                                 | 0.80                                    | 1.530                | 0.300                        | 0.980  | New Install in 2019  |
| P19-4              | 2019-08-21        | TBD                                     | TBD                      | 0.75             | 0.70                                 | 1.90                                    | 2.750                | 1.750                        | 2.500  | New Install in 2019. Replacement for P06-5   |
| P19-5              | 2019-08-21        | TBD                                     | TBD                      | 0.70             | 0.30                                 | 1.20                                    | 1.980                | 0.620                        | 1.320  | New Install in 2019. Replacement for P06-3   |
| P19-6              | 2019-08-21        | TBD                                     | TBD                      | 0.73             | 0.30                                 | 0.80                                    | 1.630                | 0.300                        | 1.030  | New Install in 2019  |

**Notes:**

1. asl - above sea level

2. bgs - below ground surface

3. btoc - below top of PVC casing

Elevations to be determined (TBD) for P19 series wells as they were not surveyed in 2019. To be surveyed at a future date.

**Table 7: Summary of 2019 Groundwater Field Parameters**

| GENERAL            |                             | FIELD PARAMETERS |                         |             |                               |                  |                        | Comments   |
|--------------------|-----------------------------|------------------|-------------------------|-------------|-------------------------------|------------------|------------------------|--|
| Monitoring Well ID | Sample Date<br>(yyyy-mm-dd) | pH               | Electrical Conductivity | Temperature | Oxidation/Reduction Potential | Dissolved Oxygen | Total Dissolved Solids |  |
| Units              |                             | -                | µS/cm                   | °C          | mV                            | mg/L             | mg/L                   |  |
| <b>RESULTS</b>     |                             |                  |                         |             |                               |                  |                        |  |
| P06-4              | 2019-08-21                  | -                | -                       | -           | -                             | -                | -                      | dry  |
| P06-6              | 2019-08-21                  | 7.03             | 930                     | 4.2         | 51.3                          | 11.10            | 605                    | slow recovery, turbid water, some sediment in water after purging              |
| P06-7              | 2019-08-21                  | 8.00             | 270                     | 2.1         | -65.8                         | 12.30            | 176                    | slow recovery, clear water, very little water in well                          |
| P19-2              | 2019-08-21                  | 7.04             | 780                     | 6.6         | -24.3                         | 8.93             | 507                    | good recovery, slightly turbid   |
| P19-4              | 2019-08-21                  | 7.27             | 807                     | 3.7         | 199.9                         | 12.45            | 523                    | good recovery, clear, trace fine sediment in water                             |
| P19-5              | 2019-08-21                  | 7.20             | 1540                    | 3.3         | -35.4                         | 8.28             | 1001                   | moderate recovery, turbid water, some fine sediment in water after development |
| P19-6              | 2019-08-21                  | 6.80             | 1110                    | 7.5         | -22.7                         | 8.65             | 715                    | slow recovery, turbid water, some sediment in water after development          |

**Notes:**

1. Field parameters were measured after purging of monitoring well was completed and the well had recovered
2. °C = degrees Celsius
3. uS/cm = micro-Siemans per centimeter
5. ppm = parts per million
6. mg/L = milligrams per liter

Table 8: Groundwater Analytical Results for Routine Potability Parameters

| GENERAL   |                             | ROUTINE PARAMETERS |      |       |                  |                        |                              |             |           |           |          |          |          |         |           |        |           |           |         |                       |                                 |               |   |
|---|-----------------------------|--------------------|------|-------|------------------|------------------------|------------------------------|-------------|-----------|-----------|----------|----------|----------|---------|-----------|--------|-----------|-----------|---------|-----------------------|---------------------------------|---------------|---|
| Monitoring Well ID  | Sample Date<br>(yyyy-mm-dd) |                    |      |       | Total Alkalinity | Hardness               | Total Dissolved Solids (TDS) | Bicarbonate | Carbonate | Hydroxide | Fluoride | Chloride | Sulphate | Calcium | Magnesium | Sodium | Potassium | Manganese | Nitrate | Nitrite (as nitrogen) | Nitrate + Nitrite (as nitrogen) | Ionic Balance |   |
|   | Units                       | pH                 | EC   | SAR   | mg/L             | mg/L CaCO <sub>3</sub> | mg/L                         | mg/L        | mg/L      | mg/L      | mg/L     | mg/L     | mg/L     | mg/L    | mg/L      | mg/L   | mg/L      | mg/L      | mg/L    | mg/L                  | mg/L                            | mg/L          | % |
| <b>GUIDELINES</b>   |                             |                    |      |       |                  |                        |                              |             |           |           |          |          |          |         |           |        |           |           |         |                       |                                 |               |   |
| Tier 1 Federal Guidelines <sup>1</sup> Residential/Parkland for coarse-grained soil |                             | 6.5-9              | -    | -     | -                | -                      | -                            | -           | -         | -         | 0.12     | 120      | 100      | -       | -         | -      | -         | -         | 13      | 0.06                  | -                               | -             | - |
| <b>RESULTS</b>  |                             |                    |      |       |                  |                        |                              |             |           |           |          |          |          |         |           |        |           |           |         |                       |                                 |               |   |
| P06-6   | 2019-08-21                  | 7.40               | 1100 | 1.06  | 420              | 534                    | 704                          | 513         | <5        | <5        | 0.07     | 55       | 150      | 144     | 42.3      | 56.4   | 1.9       | <0.005    | 2.0     | <0.02                 | 0.45                            | 100           |   |
| P06-7   | 2019-08-21                  | 7.22               | 306  | 0.376 | 124              | 145                    | 153                          | 152         | <5        | <5        | <0.05    | 14       | 3        | 35.5    | 13.6      | 10.4   | 0.7       | 0.372     | 1.5     | <0.02                 | 0.34                            | 114           |   |
| P19-2   | 2019-08-21                  | 7.14               | 821  | 0.510 | 299              | 395                    | 460                          | 365         | <5        | <5        | 0.08     | 41       | 71       | 109     | 29.9      | 23.3   | 6.7       | 2.53      | <0.5    | <0.02                 | <0.02                           | 107           |   |
| P19-4   | 2019-08-21                  | 7.54               | 907  | 0.239 | 375              | 478                    | 525                          | 458         | <5        | <5        | 0.07     | 20       | 55       | 112     | 48.2      | 12.0   | 2.7       | 0.045     | 50.3    | <0.02                 | 11.4                            | 102           |   |
| P19-5   | 2019-08-21                  | 7.37               | 1700 | 2.32  | 780              | 441                    | 1020                         | 952         | <5        | <5        | 0.05     | 34       | 62       | 118     | 35.6      | 112    | 192       | 2.30      | <0.5    | <0.02                 | <0.02                           | 107           |   |
| DUP1 (Duplicate of P19-5)   | 2019-08-21                  | 7.40               | 1730 | 2.42  | 791              | 433                    | 1050                         | 965         | <5        | <5        | <0.05    | 34       | 62       | 116     | 34.8      | 116    | 216       | 2.47      | <0.5    | <0.02                 | <0.02                           | 108           |   |
| P19-6   | 2019-08-21                  | 7.00               | 1160 | 0.520 | 528              | 549                    | 597                          | 644         | <5        | <5        | 0.09     | 57       | 9        | 120     | 60.6      | 28.0   | 5.3       | 3.47      | <0.5    | <0.02                 | <0.02                           | 107           |   |

Notes:

1. Federal Contaminated Sites Action Plan (FCSAP). Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, updated November 2015 (Version 3). (GoC 2010)
2. Yellow highlight = exceeds applicable guidelines

**Table 9: Groundwater Analytical Results for Dissolved Metals Parameters**

| GENERAL   |                             | DISSOLVED METALS        |          |              |            |               |       |                 |               |        |                       |            |                     |              |                       |              |               |               |              |             |  |
|---|-----------------------------|-------------------------|----------|--------------|------------|---------------|-------|-----------------|---------------|--------|-----------------------|------------|---------------------|--------------|-----------------------|--------------|---------------|---------------|--------------|-------------|--|
| Monitoring Well ID  | Sample Date<br>(yyyy-mm-dd) | Aluminum <sup>(3)</sup> | Antimony | Arsenic      | Barium     | Beryllium     | Boron | Cadmium         | Chromium      | Cobalt | Copper <sup>(4)</sup> | Iron       | Lead <sup>(5)</sup> | Molybdenum   | Nickel <sup>(6)</sup> | Selenium     | Silver        | Thallium      | Uranium      | Zinc        |  |
| Units   |                             | mg/L                    | mg/L     | mg/L         | mg/L       | mg/L          | mg/L  | mg/L            | mg/L          | mg/L   | mg/L                  | mg/L       | mg/L                | mg/L         | mg/L                  | mg/L         | mg/L          | mg/L          | mg/L         | mg/L        |  |
| <b>GUIDELINES</b>   |                             |                         |          |              |            |               |       |                 |               |        |                       |            |                     |              |                       |              |               |               |              |             |  |
| Tier 1 Federal Guidelines <sup>1</sup> Residential/Parkland for coarse-grained soil |                             | <b>0.1</b>              | <b>2</b> | <b>0.005</b> | <b>0.5</b> | <b>0.0053</b> | 5     | <b>0.000017</b> | <b>0.0089</b> | -      | <b>0.004</b>          | <b>0.3</b> | <b>0.007</b>        | <b>0.073</b> | <b>0.15</b>           | <b>0.001</b> | <b>0.0001</b> | <b>0.0008</b> | <b>0.015</b> | <b>0.01</b> |  |
| <b>RESULTS</b>  |                             |                         |          |              |            |               |       |                 |               |        |                       |            |                     |              |                       |              |               |               |              |             |  |
| P19-2   | 2019-08-21                  | 0.012                   | <0.001   | 0.010        | 0.45       | <0.001        | 0.01  | 0.000036        | 0.001         | 0.007  | 0.002                 | 1.0        | <0.0002             | 0.003        | 0.012                 | 0.0011       | <0.00005      | <0.0005       | 0.003        | 0.01        |  |
| P19-4   | 2019-08-21                  | 0.019                   | <0.001   | <0.001       | 0.10       | <0.001        | 0.03  | 0.000431        | 2.22          | 0.007  | 0.021                 | 3.6        | 0.0009              | 0.309        | 0.498                 | 0.0009       | 0.00013       | 0.0007        | 0.006        | 0.03        |  |
| P19-5   | 2019-08-21                  | 0.258                   | 0.003    | 0.019        | 0.17       | <0.001        | 0.22  | 0.000740        | 0.007         | 0.012  | 0.008                 | 11.9       | 0.0010              | 0.003        | 0.039                 | 0.0017       | 0.00006       | <0.0005       | 0.001        | 0.01        |  |
| P19-6   | 2019-08-21                  | 0.090                   | <0.001   | 0.009        | 0.51       | <0.001        | <0.01 | 0.000017        | 0.002         | 0.012  | 0.002                 | 23.0       | 0.0046              | <0.001       | 0.019                 | 0.0023       | <0.00005      | <0.0005       | <0.001       | 0.01        |  |

**Notes:**

1. Federal Contaminated Sites Action Plan (FCSAP). Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, updated November 2015 (Version 3). (GoC 2010)
2. Yellow highlight = exceeds applicable guidelines
3. Aluminum guideline is 0.1 mg/L at pH > 6.5
4. Copper guideline is 0.004 mg/L at hardness >180 mg/L
5. Lead guideline is 0.007 mg/L at hardness >180 mg/L
6. Nickel guideline is 0.15 mg/L at hardness >180 mg/L

**Table 10: Groundwater Analytical Results for Petroleum Hydrocarbon Parameters**

| GENERAL   |                             | PETROLEUM HYDROCARBONS |              |              |                 |             |              |
|---|-----------------------------|------------------------|--------------|--------------|-----------------|-------------|--------------|
| Location  | Sample Date<br>(yyyy-mm-dd) | Benzene                | Toluene      | Ethylbenzene | Xylenes (o+m+p) | F1 (C6-C10) | F2 (C10-C16) |
|   | Units                       | mg/L                   | mg/L         | mg/L         | mg/L            | mg/L        | mg/L         |
| <b>GUIDELINES</b>   |                             |                        |              |              |                 |             |              |
| Tier 1 Federal Guidelines <sup>1</sup> Residential/Parkland for coarse-grained soil |                             | <b>0.14</b>            | <b>0.083</b> | <b>11</b>    | <b>3.9</b>      | <b>0.81</b> | <b>1.3</b>   |
| <b>RESULTS</b>  |                             |                        |              |              |                 |             |              |
| P06-6   | 2019-08-21                  | 0.0005                 | <0.0003      | <0.0005      | <0.0005         | <0.1        | <0.1         |
| P06-7   | 2019-08-21                  | <0.0005                | <0.0003      | <0.0005      | <0.0005         | <0.1        | <0.1         |
| P19-2   | 2019-08-21                  | 0.0386                 | 0.1130       | 0.0375       | 1.0500          | 1.5         | 5.3          |
| P19-4   | 2019-08-21                  | <0.0005                | <0.0003      | <0.0005      | <0.0005         | <0.1        | <0.1         |
| P19-5   | 2019-08-21                  | 0.0142                 | <0.0003      | 0.0796       | 0.1080          | 0.2         | 7.3          |
| P19-6   | 2019-08-21                  | 0.1520                 | 0.0111       | 0.0220       | 0.1320          | <0.1        | 0.6          |

**Notes:**

1. Federal Contaminated Sites Action Plan (FCSAP). Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, updated November 2015 (Version 3). (GoC 2010)
2. Yellow highlight = exceeds applicable Federal guidelines

Table 11: Summary of Groundwater Analytical Quality Assurance/Quality Controls

| GENERAL                                  |                             | ROUTINE PARAMETERS |           |      |                  |                        |                              |             |           |           |                            |           |           |           |           |           |            |           |          |                       |                                 |               |   |
|--|-----------------------------|--------------------|-----------|------|------------------|------------------------|------------------------------|-------------|-----------|-----------|----------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|----------|-----------------------|---------------------------------|---------------|---|
| Monitoring Well ID                       | Sample Date<br>(yyyy-mm-dd) |                    |           |      | Total Alkalinity | Hardness               | Total Dissolved Solids (TDS) | Bicarbonate | Carbonate | Hydroxide | Fluoride                   | Chloride  | Sulphate  | Calcium   | Magnesium | Sodium    | Potassium  | Manganese | Nitrate  | Nitrite (as nitrogen) | Nitrate + Nitrite (as nitrogen) | Ionic Balance |   |
|  | Units                       | pH                 | EC        | SAR  | mg/L             | mg/L CaCO <sub>3</sub> | mg/L                         | mg/L        | mg/L      | mg/L      | mg/L                       | mg/L      | mg/L      | mg/L      | mg/L      | mg/L      | mg/L       | mg/L      | mg/L     | mg/L                  | mg/L                            | mg/L          | % |
| <b>METHOD DETECTION LIMITS</b>           |                             |                    |           |      |                  |                        |                              |             |           |           |                            |           |           |           |           |           |            |           |          |                       |                                 |               |   |
|  | Reported Detection Limit    | NA                 | 1         | NA   | 5                | 1                      | 0.6                          | 5           | 5         | 5         | 0.05                       | 1         | 1         | 0.3       | 0.2       | 0.6       | 0.6        | 0.005     | 0.5      | 0.02                  | 0.02                            | 1             |   |
| <b>RESULTS</b>                           |                             |                    |           |      |                  |                        |                              |             |           |           |                            |           |           |           |           |           |            |           |          |                       |                                 |               |   |
| P19-5                                    | 2019-08-21                  | 7.37               | 1700      | 2.32 | 780              | 441                    | 1020                         | 952         | <5        | <5        | 0.05                       | 34        | 62        | 118       | 35.6      | 112       | 192        | 2.3       | <0.5     | <0.02                 | <0.02                           | 107           |   |
| DUP1 (Duplicate of P19-5)                | 2019-08-21                  | 7.4                | 1730      | 2.42 | 791              | 433                    | 1050                         | 965         | <5        | <5        | <0.05                      | 34        | 62        | 116       | 34.8      | 116       | 216        | 2.47      | <0.5     | <0.02                 | <0.02                           | 108           |   |
| <b>Relative Percent Difference (RPD)</b> |                             | 0%                 | <b>2%</b> | 4%   | <b>1%</b>        | <b>2%</b>              | <b>3%</b>                    | <b>1%</b>   | 0%        | 0%        | -                          | <b>0%</b> | <b>0%</b> | <b>2%</b> | <b>2%</b> | <b>4%</b> | <b>12%</b> | <b>7%</b> | 0%       | 0%                    | 0%                              | <b>1%</b>     |   |
| <b>Absolute Difference</b>               |                             | 0.03               | 30        | 0.1  | 11               | 8                      | 30                           | 13          | <b>0</b>  | <b>0</b>  | <b>0.025<sup>(a)</sup></b> | 0         | 0         | 2         | 0.8       | 4         | 24         | 0.17      | <b>0</b> | <b>0</b>              | <b>0</b>                        | 1             |   |

Notes:

1. Applicable values (RPD or AD) are bolded. RPD is applicable if parameter concentrations in both samples are greater than or equal to 5x the detection limit; otherwise AD is applicable.
2. Yellow highlight = exceeds Zeiner criteria (RPD is greater than 20%, or AD is greater than method detection limit).
3. View analytical reports for more comprehensive results
4. (a) = Difference between the reported concentration and half the detection limit

# APPENDIX V

## Laboratory Analytical Reports

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**CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505**

**ATTENTION TO: Kyle Schepanow**

**PROJECT: A04012A11**

**AGAT WORK ORDER: 19E489087**

**TRACE ORGANICS REVIEWED BY: Laarni Hafso, Laboratory Manager**

**DATE REPORTED: Jul 25, 2019**

**PAGES (INCLUDING COVER): 65**

**VERSION\*: 2**

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

**\*NOTES**

VERSION 2: Added F3a:F3b fractions to samples: 116, 160, 163, 165, 199, 200, 207, 224, 249, 267, 268, 269, 296, 300, 322, 336 and 345 - July 16th 2019 CS.

**All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.**





## Certificate of Analysis

AGAT WORK ORDER: 19E489087

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION:      |        | BH19-001A  | BH19-001B  | BH19-002A  | BH19-002B  | BH19-003A  | BH19-003B  | BH19-004A  | BH19-004B  |
|--------------------------------|-------------|--------------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | SAMPLE TYPE:             |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |             | DATE SAMPLED:            |        | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 |
|                                |             | G / S                    | RDL    | 327079     | 327085     | 327086     | 327087     | 327089     | 327090     | 327091     | 327092     |
| Benzene                        | mg/kg       | 0.005                    | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | 0.021      | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05                     | <0.05  | 0.07       | <0.05      | 6.95       | <0.05      | 0.12       | 0.08       | 0.09       |            |
| Ethylbenzene                   | mg/kg       | 0.01                     | <0.01  | <0.01      | <0.01      | 0.31       | 0.02       | 0.34       | <0.01      | 0.14       |            |
| Xylenes                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | 3.12       | 0.13       | 2.26       | <0.05      | 0.94       |            |
| C6 - C10 (F1)                  | mg/kg       | 10                       | <10    | <10        | <10        | 60         | 20         | 60         | <10        | 50         |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10                       | <10    | <10        | <10        | 50         | 20         | 60         | <10        | 50         |            |
| C10 - C16 (F2)                 | mg/kg       | 10                       | 60     | 50         | 850        | 6650       | 1140       | 910        | 210        | 410        |            |
| C16 - C34 (F3)                 | mg/kg       | 10                       | 100    | 80         | 740        | 5790       | 440        | 570        | 360        | 410        |            |
| C34 - C50 (F4)                 | mg/kg       | 10                       | 20     | 20         | 30         | 140        | 50         | 80         | 80         | 80         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000                     | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %           | 1                        | 19     | 12         | 15         | 50         | 11         | 23         | 20         | 19         |            |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b> |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150                   | 111    | 110        | 108        | 109        | 110        | 111        | 111        | 112        |            |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150                   | 92     | 91         | 97         | 145        | 83         | 103        | 108        | 102        |            |
| o-Terphenyl (F2-F4)            | %           | 50-150                   | 99     | 99         | 109        | 95         | 90         | 104        | 100        | 97         |            |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E489087

PROJECT: A04012A11

6310 ROPER ROAD  
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<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-005A BH19-005B BH19-006A BH19-006B BH19-007A BH19-007B BH19-008A BH19-008B   |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil Soil Soil Soil Soil Soil Soil Soil  |        |        |        |        |        |        |        |        |        |
|                                |             | DATE SAMPLED: 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 |        |        |        |        |        |        |        |        |        |
|                                |             | G / S   | RDL    | 327093 | 327094 | 327095 | 327096 | 327097 | 327098 | 327099 | 327100 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | 0.204  | <0.005 | 0.006  | 0.007  | 0.210  | 0.005  | 0.010  |        |
| Toluene                        | mg/kg       | 0.05  | 0.06   | 1.15   | 0.29   | 2.88   | 0.95   | 2.63   | 0.66   | 1.91   |        |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | 0.19   | <0.01  | 0.15   | 0.06   | 0.17   | 0.10   | 0.10   |        |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | 0.75   | <0.05  | 3.26   | 0.35   | 0.95   | 0.75   | 0.91   |        |
| C6 - C10 (F1)                  | mg/kg       | 10  | 10     | <10    | <10    | 60     | 20     | 30     | 10     | 30     |        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | 10     | <10    | <10    | 50     | 20     | 30     | 10     | 30     |        |
| C10 - C16 (F2)                 | mg/kg       | 10  | 430    | 990    | 470    | 4310   | 220    | 770    | 930    | 1600   |        |
| C16 - C34 (F3)                 | mg/kg       | 10  | 640    | 1280   | 890    | 360    | 840    | 1070   | 930    | 1560   |        |
| C34 - C50 (F4)                 | mg/kg       | 10  | 120    | 240    | 240    | 90     | 270    | 270    | 160    | 250    |        |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |        |
| Moisture Content               | %           | 1   | 26     | 23     | 27     | 35     | 36     | 34     | 26     | 52     |        |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 109    | 109    | 109    | 110    | 109    | 110    | 110    | 110    |        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 107    | 130    | 104    | 116    | 101    | 108    | 100    | 119    |        |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 99     | 110    | 101    | 69     | 89     | 77     | 86     | 98     |        |

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PROJECT: A04012A11

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION:      |        | BH19-009A  | BH19-009B  | BH19-010A  | BH19-010B  | BH19-011A  | BH19-011B  | BH19-012A  | BH19-012B  |            |
|--------------------------------|-------------|--------------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | SAMPLE TYPE:             |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |            |
|                                |             | DATE SAMPLED:            |        | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 |
|                                |             | G / S                    | RDL    | 327101     | 327102     | 327105     | 327106     | 327107     | 327108     | 327109     | 327110     |            |
| Benzene                        | mg/kg       | 0.005                    | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| Ethylbenzene                   | mg/kg       | 0.01                     | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg       | 10                       | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10                       | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg       | 10                       | 30     | <10        | 40         | 20         | 460        | 180        | 20         | <10        | <10        |            |
| C16 - C34 (F3)                 | mg/kg       | 10                       | 80     | <10        | 220        | 130        | 320        | 190        | 80         | 100        | 100        |            |
| C34 - C50 (F4)                 | mg/kg       | 10                       | 30     | 10         | 50         | 40         | 40         | 30         | 20         | 30         | 30         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000                     | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %           | 1                        | 7      | 8          | 24         | 17         | 13         | 14         | 11         | 14         | 14         |            |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b> |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150                   | 109    | 109        | 102        | 102        | 103        | 102        | 103        | 103        | 101        |            |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150                   | 94     | 92         | 75         | 71         | 73         | 72         | 72         | 72         | 72         |            |
| o-Terphenyl (F2-F4)            | %           | 50-150                   | 127    | 53         | 128        | 103        | 98         | 102        | 100        | 103        | 103        |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-013A BH19-013B BH19-014A BH19-014B BH19-015A BH19-015B BH19-016A BH19-016B   |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil Soil Soil Soil Soil Soil Soil Soil  |        |        |        |        |        |        |        |        |        |
|                                |             | DATE SAMPLED: 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 |        |        |        |        |        |        |        |        |        |
|                                |             | G / S   | RDL    | 327111 | 327112 | 327113 | 327114 | 327115 | 327116 | 327117 | 327118 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | 0.026  | 0.036  | <0.005 | <0.005 |        |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05  | 0.08   | <0.05  | 0.10   | 2.42   | <0.05  | 0.09   |        |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01  | <0.01  | <0.01  | 0.07   | 0.07   | <0.01  | 0.02   |        |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | 0.24   | 0.26   | <0.05  | 0.08   |        |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10    | <10    | <10    | 10     | 10     | <10    | 30     |        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10    | <10    | <10    | 10     | 10     | <10    | 30     |        |
| C10 - C16 (F2)                 | mg/kg       | 10  | <10    | <10    | 60     | 90     | 450    | 100    | 210    | 250    |        |
| C16 - C34 (F3)                 | mg/kg       | 10  | 80     | 100    | 260    | 230    | 660    | 1330   | 490    | 420    |        |
| C34 - C50 (F4)                 | mg/kg       | 10  | 30     | 20     | 80     | 60     | 140    | 370    | 110    | 90     |        |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |        |
| Moisture Content               | %           | 1   | 9      | 9      | 16     | 18     | 31     | 29     | 12     | 13     |        |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 102    | 102    | 103    | 102    | 103    | 103    | 102    | 105    |        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 63     | 66     | 74     | 88     | 83     | 92     | 72     | 88     |        |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 101    | 124    | 107    | 99     | 103    | 102    | 135    | 119    |        |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-017A BH19-017B BH19-018A BH19-018B BH19-019A BH19-019B BH19-020A BH19-020B   |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil Soil Soil Soil Soil Soil Soil Soil  |        |        |        |        |        |        |        |        |        |
|                                |             | DATE SAMPLED: 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 |        |        |        |        |        |        |        |        |        |
|                                |             | G / S   | RDL    | 327119 | 327120 | 327121 | 327122 | 327123 | 327124 | 327125 | 327126 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Toluene                        | mg/kg       | 0.05  | <0.05  | 0.05   | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| Ethylbenzene                   | mg/kg       | 0.01  | 0.01   | 0.02   | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| Xylenes                        | mg/kg       | 0.05  | 0.08   | 0.08   | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| C6 - C10 (F1)                  | mg/kg       | 10  | 20     | <10    | <10    | 30     | <10    | <10    | <10    | <10    | <10    |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | 20     | <10    | <10    | 30     | <10    | <10    | <10    | <10    | <10    |
| C10 - C16 (F2)                 | mg/kg       | 10  | 210    | 290    | 160    | 210    | 190    | 140    | 250    | 110    | 110    |
| C16 - C34 (F3)                 | mg/kg       | 10  | 310    | 290    | 360    | 370    | 400    | 260    | 360    | 170    | 170    |
| C34 - C50 (F4)                 | mg/kg       | 10  | 50     | 50     | 80     | 70     | 80     | 50     | 100    | 50     | 50     |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |
| Moisture Content               | %           | 1   | 11     | 11     | 14     | 12     | 15     | 11     | 15     | 16     | 16     |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 103    | 103    | 102    | 104    | 102    | 102    | 100    | 100    | 100    |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 69     | 69     | 87     | 73     | 93     | 73     | 106    | 92     | 92     |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 120    | 106    | 97     | 102    | 109    | 111    | 76     | 67     | 67     |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-021A BH19-021B BH19-022A BH19-022B BH19-023A BH19-023B BH19-024A BH19-024B   |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil Soil Soil Soil Soil Soil Soil Soil  |        |        |        |        |        |        |        |        |        |
|                                |             | DATE SAMPLED: 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 |        |        |        |        |        |        |        |        |        |
|                                |             | G / S   | RDL    | 327127 | 327128 | 327129 | 327130 | 327131 | 327132 | 327133 | 327134 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | 0.22   | <0.05  | <0.05  | <0.05  |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | 0.08   | 0.01   | <0.01  | 0.01   |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | 0.33   | 0.06   | <0.05  | 0.12   |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | 20     | <10    | <10    | <10    | 10     | <10    | <10    | 20     |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | 20     | <10    | <10    | <10    | 10     | <10    | <10    | 20     |
| C10 - C16 (F2)                 | mg/kg       | 10  | 170    | 300    | 90     | 150    | 100    | 150    | 240    | 260    |        |
| C16 - C34 (F3)                 | mg/kg       | 10  | 280    | 370    | 240    | 320    | 270    | 290    | 420    | 380    |        |
| C34 - C50 (F4)                 | mg/kg       | 10  | 60     | 70     | 80     | 100    | 80     | 90     | 110    | 100    |        |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |        |
| Moisture Content               | %           | 1   | 13     | 13     | 12     | 11     | 14     | 13     | 15     | 14     |        |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 100    | 101    | 99     | 99     | 101    | 100    | 99     | 101    |        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 82     | 92     | 86     | 95     | 99     | 80     | 86     | 84     |        |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 68     | 85     | 73     | 68     | 83     | 66     | 84     | 74     |        |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-025A BH19-025B BH19-026A BH19-026B BH19-027A BH19-027B BH19-028A BH19-028B   |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil Soil Soil Soil Soil Soil Soil Soil  |        |        |        |        |        |        |        |        |        |
|                                |             | DATE SAMPLED: 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 |        |        |        |        |        |        |        |        |        |
|                                |             | G / S   | RDL    | 327135 | 327136 | 327137 | 327138 | 327139 | 327140 | 327141 | 327142 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | 0.08   | <0.05  |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | 0.04   | <0.01  |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | 0.32   | <0.05  |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | 10     | <10    |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | 10     | <10    |
| C10 - C16 (F2)                 | mg/kg       | 10  | 140    | 120    | 130    | 20     | 100    | 70     | 90     | 90     | 90     |
| C16 - C34 (F3)                 | mg/kg       | 10  | 230    | 140    | 270    | 120    | 320    | 250    | 330    | 350    | 350    |
| C34 - C50 (F4)                 | mg/kg       | 10  | 60     | 40     | 70     | 40     | 80     | 70     | 100    | 110    | 110    |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |
| Moisture Content               | %           | 1   | 9      | 7      | 16     | 9      | 17     | 13     | 12     | 13     | 13     |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 100    | 100    | 100    | 100    | 100    | 99     | 100    | 99     | 99     |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 85     | 88     | 86     | 89     | 90     | 120    | 91     | 96     | 96     |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 77     | 76     | 73     | 75     | 79     | 80     | 74     | 95     | 95     |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-029A BH19-029B BH19-030A BH19-030B BH19-031A BH19-031B BH19-032A BH19-032B   |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil Soil Soil Soil Soil Soil Soil Soil  |        |        |        |        |        |        |        |        |        |
|                                |             | DATE SAMPLED: 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 2019-07-01 |        |        |        |        |        |        |        |        |        |
|                                |             | G / S   | RDL    | 327143 | 327144 | 327145 | 327146 | 327147 | 327148 | 327149 | 327150 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01  | 0.01   | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | 0.06   | 0.09   | <0.05  | <0.05  | 0.06   | <0.05  | <0.05  | <0.05  |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | 10     | <10    | <10    | <10    | 10     | <10    | <10    | <10    |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | 10     | <10    | <10    | <10    | 10     | <10    | <10    | <10    |
| C10 - C16 (F2)                 | mg/kg       | 10  | 300    | 220    | 750    | 380    | 300    | 420    | 180    | 340    | 340    |
| C16 - C34 (F3)                 | mg/kg       | 10  | 440    | 380    | 480    | 450    | 370    | 380    | 240    | 330    | 330    |
| C34 - C50 (F4)                 | mg/kg       | 10  | 120    | 100    | 40     | 60     | 40     | 30     | 20     | 10     | 10     |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |
| Moisture Content               | %           | 1   | 16     | 14     | 14     | 12     | 14     | 14     | 10     | 11     | 11     |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 99     | 100    | 99     | 99     | 99     | 99     | 99     | 99     | 98     |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 108    | 83     | 107    | 91     | 90     | 87     | 77     | 103    | 103    |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 76     | 78     | 112    | 108    | 109    | 111    | 107    | 111    | 111    |

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PROJECT: A04012A11

6310 ROPER ROAD  
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ATTENTION TO: Kyle Schepanow

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-033A BH19-033B BH19-034A BH19-034B BH19-035A BH19-035B BH19-036A BH19-036B |        |        |        |        |        |        |        |        |        |        |  |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
|                                |             | SAMPLE TYPE: Soil   |        | Soil   |        | Soil   |        | Soil   |        | Soil   |        | Soil   |  |
|                                |             | G / S   | RDL    | 327151 | 327152 | 327153 | 327154 | 327155 | 327156 | 327157 | 327158 |        |  |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |  |
| Toluene                        | mg/kg       | 0.05  | <0.05  | 0.06   | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |  |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | 0.01   | <0.01  | <0.01  | <0.01  |  |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |  |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |  |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |  |
| C10 - C16 (F2)                 | mg/kg       | 10  | 430    | 200    | 120    | 190    | 90     | 240    | 50     | 30     |        |        |  |
| C16 - C34 (F3)                 | mg/kg       | 10  | 560    | 380    | 290    | 350    | 330    | 440    | 170    | 90     |        |        |  |
| C34 - C50 (F4)                 | mg/kg       | 10  | 60     | 50     | 40     | 40     | 70     | 90     | 30     | 10     |        |        |  |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |  |
| Moisture Content               | %           | 1   | 15     | 13     | 16     | 14     | 14     | 13     | 10     | 8      |        |        |  |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |        |  |
| Toluene-d8 (BTEX)              | %           | 50-150  | 98     | 98     | 99     | 99     | 99     | 99     | 99     | 99     | 99     | 99     |  |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 108    | 104    | 84     | 107    | 125    | 83     | 98     | 83     |        |        |  |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 109    | 112    | 114    | 119    | 108    | 108    | 102    | 106    |        |        |  |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-037A BH19-037B BH19-038A BH19-039A BH19-039B BH19-040A BH19-040B BH19-041A |        |            |        |            |        |            |        |            |        |            |  |
|--------------------------------|-------------|---|--------|------------|--------|------------|--------|------------|--------|------------|--------|------------|--|
|                                |             | SAMPLE TYPE: Soil   |        | Soil       |        | Soil       |        | Soil       |        | Soil       |        | Soil       |  |
|                                |             | DATE SAMPLED: 2019-07-01  |        | 2019-07-01 |        | 2019-07-01 |        | 2019-07-01 |        | 2019-07-01 |        | 2019-07-01 |  |
|                                |             | G / S   | RDL    | 327159     | 327160 | 327161     | 327162 | 327163     | 327164 | 327165     | 327166 |            |  |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 |            |  |
| Toluene                        | mg/kg       | 0.05  | 0.11   | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  |            |  |
| Ethylbenzene                   | mg/kg       | 0.01  | 0.02   | <0.01      | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  |            |  |
| Xylenes                        | mg/kg       | 0.05  | 0.06   | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  |            |  |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10        | <10    | <10        | <10    | <10        | <10    | <10        | <10    |            |  |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10        | <10    | <10        | <10    | <10        | <10    | <10        | <10    |            |  |
| C10 - C16 (F2)                 | mg/kg       | 10  | 100    | 80         | 150    | 20         | 140    | 100        | 100    | 100        | 90     |            |  |
| C16 - C34 (F3)                 | mg/kg       | 10  | 390    | 420        | 20     | 220        | 3400   | 360        | 410    | 240        |        |            |  |
| C34 - C50 (F4)                 | mg/kg       | 10  | 120    | 140        | <10    | 30         | 1320   | 90         | 110    | 60         |        |            |  |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A        | N/A    | N/A        | N/A    | N/A        | N/A    | N/A        |        |            |  |
| Moisture Content               | %           | 1   | 15     | 20         | 5      | 16         | 53     | 21         | 19     | 13         |        |            |  |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |            |        |            |        |            |        |            |        |            |  |
| Toluene-d8 (BTEX)              | %           | 50-150  | 99     | 99         | 98     | 98         | 98     | 98         | 100    | 101        |        |            |  |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 82     | 72         | 88     | 84         | 110    | 85         | 95     | 67         |        |            |  |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 109    | 108        | 107    | 106        | 109    | 110        | 109    | 94         |        |            |  |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-041B BH19-042A BH19-042B BH19-043A BH19-043B BH19-044A BH19-044B BH19-045A |        |            |            |            |            |            |            |            |            |
|--------------------------------|-------------|---|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | SAMPLE TYPE: Soil   |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |             | DATE SAMPLED: 2019-07-01  |        | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 |
|                                |             | G / S   | RDL    | 327167     | 327168     | 327169     | 327170     | 327171     | 327172     | 327173     | 327174     |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05  | 0.06   | <0.05      | 0.07       | <0.05      | 0.06       | 0.07       | <0.05      | <0.05      |            |
| Ethylbenzene                   | mg/kg       | 0.01  | 0.02   | <0.01      | <0.01      | <0.01      | <0.01      | 0.01       | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg       | 0.05  | 0.07   | <0.05      | <0.05      | <0.05      | <0.05      | 0.05       | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg       | 10  | 120    | 80         | 150        | 140        | 130        | 150        | 70         | 30         |            |
| C16 - C34 (F3)                 | mg/kg       | 10  | 270    | 270        | 350        | 400        | 290        | 340        | 160        | 120        |            |
| C34 - C50 (F4)                 | mg/kg       | 10  | 70     | 60         | 90         | 100        | 80         | 90         | 50         | 30         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %           | 1   | 14     | 14         | 13         | 14         | 13         | 16         | 9          | 7          |            |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150  | 101    | 101        | 100        | 101        | 101        | 101        | 101        | 101        | 101        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 98     | 87         | 92         | 77         | 97         | 95         | 68         | 80         |            |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 97     | 97         | 89         | 110        | 72         | 84         | 84         | 84         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION:      |        |            |            |            |            |            |            |            |            |
|--------------------------------|-------------|--------------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | G / S                    |        | BH19-045B  | BH19-046A  | BH19-046B  | BH19-047A  | BH19-047B  | BH19-048A  | BH19-048B  | BH19-049A  |
|                                |             | RDL                      |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |             | DATE SAMPLED:            |        | 2019-07-01 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 |
|                                |             |                          | 327175 | 327176     | 327197     | 327198     | 327199     | 327200     | 327201     | 327202     |            |
| Benzene                        | mg/kg       | 0.005                    | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg       | 0.05                     | 0.06   | <0.05      | <0.05      | 0.23       | 2.13       | 0.70       | <0.05      | <0.05      |            |
| Ethylbenzene                   | mg/kg       | 0.01                     | <0.01  | <0.01      | 0.01       | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg       | 10                       | <10    | <10        | 20         | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10                       | <10    | <10        | 20         | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg       | 10                       | 30     | 340        | 640        | 180        | 20         | 120        | 50         | 90         |            |
| C16 - C34 (F3)                 | mg/kg       | 10                       | 100    | 290        | 200        | 420        | 570        | 460        | 250        | 310        |            |
| C34 - C50 (F4)                 | mg/kg       | 10                       | 20     | 60         | 40         | 110        | 150        | 140        | 80         | 90         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000                     | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %           | 1                        | 9      | 11         | 9          | 35         | 47         | 25         | 25         | 17         |            |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b> |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150                   | 101    | 101        | 102        | 101        | 100        | 100        | 100        | 101        |            |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150                   | 67     | 95         | 89         | 102        | 95         | 81         | 75         | 75         |            |
| o-Terphenyl (F2-F4)            | %           | 50-150                   | 84     | 111        | 87         | 93         | 90         | 90         | 90         | 84         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-049B BH19-050A BH19-050B BH19-051A BH19-051B BH19-052A BH19-052B BH19-053A |        |            |            |            |            |            |            |            |            |
|--------------------------------|-------------|---|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | SAMPLE TYPE: Soil   |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |             | DATE SAMPLED: 2019-07-02  |        | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 |
|                                |             | G / S   | RDL    | 327203     | 327204     | 327205     | 327206     | 327207     | 327208     | 327209     | 327210     |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05  | 0.06   | <0.05      | <0.05      | <0.05      | <0.05      | 0.94       | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg       | 10  | 30     | 70         | 10         | 40         | 80         | 30         | 100        | 30         | 30         |
| C16 - C34 (F3)                 | mg/kg       | 10  | 220    | 230        | 80         | 180        | 190        | 70         | 110        | 130        | 130        |
| C34 - C50 (F4)                 | mg/kg       | 10  | 70     | 50         | 20         | 30         | 40         | 10         | 30         | 40         | 40         |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %           | 1   | 20     | 14         | 6          | 13         | 10         | 8          | 12         | 13         | 13         |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150  | 101    | 101        | 108        | 106        | 107        | 108        | 108        | 108        | 107        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 82     | 81         | 78         | 106        | 150        | 110        | 79         | 85         | 85         |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 81     | 94         | 75         | 97         | 80         | 81         | 81         | 80         | 80         |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-053B BH19-054A BH19-054B BH19-055A BH19-056A BH19-056B BH19-057A BH19-057B |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil   |        | Soil   | Soil   | Soil   | Soil   | Soil   | Soil   | Soil   | Soil   |
|                                |             | G / S   | RDL    | 327211 | 327212 | 327213 | 327214 | 327215 | 327216 | 327217 | 327218 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05  | 0.30   | 0.40   | <0.05  | 0.25   | <0.05  | <0.05  |        |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |        |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |        |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |        |
| C10 - C16 (F2)                 | mg/kg       | 10  | 30     | 10     | 60     | 20     | 50     | 40     | 20     | 30     |        |
| C16 - C34 (F3)                 | mg/kg       | 10  | 30     | 100    | 170    | 250    | 360    | 250    | 90     | 90     |        |
| C34 - C50 (F4)                 | mg/kg       | 10  | <10    | 20     | 10     | 100    | 110    | 90     | 40     | 30     |        |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |        |
| Moisture Content               | %           | 1   | 6      | 9      | 6      | 21     | 19     | 18     | 10     | 11     |        |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 108    | 108    | 108    | 108    | 111    | 108    | 109    | 107    |        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 106    | 91     | 84     | 96     | 81     | 95     | 78     | 135    |        |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 92     | 83     | 87     | 78     | 120    | 74     | 68     | 78     |        |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-058A BH19-058B BH19-059A BH19-060A BH19-060B BH19-061A BH19-061B BH19-062A   |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil Soil Soil Soil Soil Soil Soil Soil  |        |        |        |        |        |        |        |        |        |
|                                |             | DATE SAMPLED: 2019-07-02 2019-07-02 2019-07-02 2019-07-02 2019-07-02 2019-07-02 2019-07-02 2019-07-02 |        |        |        |        |        |        |        |        |        |
|                                |             | G / S   | RDL    | 327219 | 327220 | 327221 | 327222 | 327223 | 327224 | 327225 | 327226 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.029  | <0.005 | <0.005 |
| Toluene                        | mg/kg       | 0.05  | <0.05  | 0.15   | 0.09   | <0.05  | 0.07   | 1.33   | <0.05  | 0.08   |        |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01  | 0.10   | <0.01  | 0.03   | 0.61   | <0.01  | <0.01  |        |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | 0.06   | 0.37   | <0.05  | <0.05  | 3.65   | <0.05  | 0.05   |        |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |        |
| C10 - C16 (F2)                 | mg/kg       | 10  | 100    | 150    | 90     | 50     | 10     | 30     | 20     | 60     |        |
| C16 - C34 (F3)                 | mg/kg       | 10  | 120    | 150    | 130    | 150    | 100    | 140    | 90     | 290    |        |
| C34 - C50 (F4)                 | mg/kg       | 10  | 30     | 20     | 30     | 40     | 30     | 40     | <10    | 50     |        |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |        |
| Moisture Content               | %           | 1   | 11     | 9      | 10     | 10     | 9      | 9      | 9      | 13     |        |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 108    | 109    | 111    | 107    | 108    | 107    | 109    | 108    |        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 97     | 89     | 110    | 100    | 141    | 98     | 102    | 89     |        |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 76     | 76     | 75     | 92     | 86     | 77     | 97     | 97     |        |

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PROJECT: A04012A11

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-062B BH19-063A BH19-063B BH19-064A BH19-064B BH19-064C BH19-065A BH19-065B |        |        |        |        |        |        |        |        |        |      |  |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|--|
|                                |             | SAMPLE TYPE: Soil   |        | Soil   |        | Soil   |        | Soil   |        | Soil   |        | Soil |  |
|                                |             | G / S   | RDL    | 327227 | 327228 | 327229 | 327230 | 327231 | 327232 | 327233 | 327234 |      |  |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.008  | <0.005 | <0.005 |      |  |
| Toluene                        | mg/kg       | 0.05  | 0.22   | <0.05  | <0.05  | <0.05  | 0.06   | 0.09   | 0.10   | <0.05  | <0.05  |      |  |
| Ethylbenzene                   | mg/kg       | 0.01  | 0.01   | <0.01  | <0.01  | <0.01  | 0.01   | 0.03   | 0.01   | <0.01  | <0.01  |      |  |
| Xylenes                        | mg/kg       | 0.05  | 0.05   | <0.05  | <0.05  | <0.05  | 0.06   | 0.18   | 0.07   | <0.05  | <0.05  |      |  |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |      |  |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |      |  |
| C10 - C16 (F2)                 | mg/kg       | 10  | 70     | 150    | 50     | 90     | 170    | 150    | 120    | 130    |        |      |  |
| C16 - C34 (F3)                 | mg/kg       | 10  | 170    | 270    | 130    | 310    | 390    | 400    | 400    | 360    |        |      |  |
| C34 - C50 (F4)                 | mg/kg       | 10  | 20     | 20     | 20     | 70     | 80     | 80     | 80     | 100    |        |      |  |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |        |      |  |
| Moisture Content               | %           | 1   | 8      | 10     | 9      | 14     | 14     | 15     | 14     | 15     |        |      |  |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |      |  |
| Toluene-d8 (BTEX)              | %           | 50-150  | 107    | 108    | 108    | 108    | 109    | 109    | 109    | 108    | 108    |      |  |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 83     | 107    | 109    | 94     | 82     | 88     | 79     | 109    |        |      |  |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 97     | 103    | 99     | 99     | 100    | 103    | 103    | 101    |        |      |  |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-066A BH19-066B BH19-067A BH19-067B BH19-068A BH19-068B BH19-068D BH19-069A |        |            |        |            |        |            |        |            |        |            |  |
|--------------------------------|-------------|---|--------|------------|--------|------------|--------|------------|--------|------------|--------|------------|--|
|                                |             | SAMPLE TYPE: Soil   |        | Soil       |        | Soil       |        | Soil       |        | Soil       |        | Soil       |  |
|                                |             | DATE SAMPLED: 2019-07-02  |        | 2019-07-02 |        | 2019-07-02 |        | 2019-07-02 |        | 2019-07-02 |        | 2019-07-02 |  |
|                                |             | G / S   | RDL    | 327235     | 327236 | 327237     | 327238 | 327239     | 327240 | 327241     | 327242 |            |  |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 |            |  |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  |            |  |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  |            |  |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  |            |  |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10        | <10    | <10        | <10    | <10        | <10    | <10        | <10    |            |  |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10        | <10    | <10        | <10    | <10        | <10    | <10        | <10    |            |  |
| C10 - C16 (F2)                 | mg/kg       | 10  | 30     | <10        | <10    | <10        | 70     | 140        | 140    | 140        | 100    |            |  |
| C16 - C34 (F3)                 | mg/kg       | 10  | 250    | 40         | 130    | <10        | 310    | 320        | 310    | 290        | 290    |            |  |
| C34 - C50 (F4)                 | mg/kg       | 10  | 50     | <10        | 40     | <10        | 90     | 60         | 60     | 60         | 60     |            |  |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A        | N/A    | N/A        | N/A    | N/A        | N/A    | N/A        | N/A    |            |  |
| Moisture Content               | %           | 1   | 10     | 11         | 7      | 7          | 13     | 12         | 12     | 12         | 14     |            |  |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |            |        |            |        |            |        |            |        |            |  |
| Toluene-d8 (BTEX)              | %           | 50-150  | 107    | 107        | 108    | 108        | 108    | 108        | 108    | 108        | 108    |            |  |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 90     | 91         | 86     | 84         | 82     | 82         | 82     | 82         | 104    |            |  |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 97     | 100        | 98     | 96         | 99     | 99         | 99     | 97         | 102    |            |  |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-069B BH19-070A BH19-070B BH19-070C BH19-071A BH19-071B BH19-071C BH19-072A |        |            |            |            |            |            |            |            |            |
|--------------------------------|-------------|---|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | SAMPLE TYPE: Soil   |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |             | DATE SAMPLED: 2019-07-02  |        | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 |
|                                |             | G / S   | RDL    | 327243     | 327244     | 327245     | 327246     | 327247     | 327248     | 327249     | 327250     |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05  | 0.05   | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.39       | 0.13       | <0.05      |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | 0.03       | <0.01      |
| Xylenes                        | mg/kg       | 0.05  | 0.08   | 0.05       | <0.05      | <0.05      | <0.05      | <0.05      | 0.05       | 0.16       | <0.05      |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg       | 10  | 210    | 160        | 150        | 190        | 30         | 60         | 40         | 20         |            |
| C16 - C34 (F3)                 | mg/kg       | 10  | 440    | 250        | 210        | 230        | 290        | 360        | 450        | 160        |            |
| C34 - C50 (F4)                 | mg/kg       | 10  | 100    | 30         | 30         | 20         | 80         | 100        | 130        | 50         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %           | 1   | 11     | 9          | 8          | 10         | 15         | 13         | 14         | 14         |            |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150  | 109    | 109        | 100        | 101        | 101        | 101        | 101        | 101        | 100        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 82     | 88         | 71         | 79         | 86         | 86         | 86         | 69         | 68         |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 97     | 113        | 91         | 91         | 95         | 84         | 86         | 92         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-072B BH19-073A BH19-073B BH19-074A BH19-074B BH19-075A BH19-075B BH19-075C |        |            |            |            |            |            |            |            |            |
|--------------------------------|-------------|---|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | SAMPLE TYPE: Soil   |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |             | DATE SAMPLED: 2019-07-02  |        | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 |
|                                |             | G / S   | RDL    | 327251     | 327253     | 327257     | 327259     | 327260     | 327261     | 327262     | 327263     |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05      | <0.05      | <0.05      | 0.16       | <0.05      | <0.05      | <0.05      | 0.09       |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01      | 0.02       | 0.02       | <0.01      | 0.01       | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05      | 0.13       | 0.12       | <0.05      | 0.05       | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg       | 10  | 40     | <10        | 20         | 90         | 150        | 20         | 10         | 20         | 20         |
| C16 - C34 (F3)                 | mg/kg       | 10  | 130    | 140        | 210        | 190        | 120        | 130        | 100        | 130        | 130        |
| C34 - C50 (F4)                 | mg/kg       | 10  | 40     | 60         | 60         | 60         | 30         | 40         | 40         | 40         | 40         |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %           | 1   | 11     | 16         | 27         | 13         | 8          | 9          | 9          | 9          | 9          |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150  | 101    | 101        | 101        | 100        | 100        | 101        | 101        | 101        | 100        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 86     | 77         | 78         | 70         | 57         | 82         | 78         | 78         | 78         |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 89     | 79         | 99         | 98         | 85         | 86         | 83         | 80         | 80         |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-076A BH19-076B BH19-077A BH19-077B BH19-078A BH19-078B BH19-078C BH19-079A |        |            |        |            |        |            |        |            |        |            |  |
|--------------------------------|-------------|---|--------|------------|--------|------------|--------|------------|--------|------------|--------|------------|--|
|                                |             | SAMPLE TYPE: Soil   |        | Soil       |        | Soil       |        | Soil       |        | Soil       |        | Soil       |  |
|                                |             | DATE SAMPLED: 2019-07-02  |        | 2019-07-02 |        | 2019-07-02 |        | 2019-07-02 |        | 2019-07-02 |        | 2019-07-02 |  |
|                                |             | G / S   | RDL    | 327264     | 327265 | 327266     | 327267 | 327268     | 327269 | 327270     | 327271 |            |  |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 |            |  |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05      | <0.05  | 0.40       | <0.05  | 7.09       | <0.05  | <0.05      | <0.05  |            |  |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  |            |  |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  |            |  |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10        | <10    | <10        | <10    | <10        | <10    | <10        | <10    |            |  |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10        | <10    | <10        | <10    | <10        | <10    | <10        | <10    |            |  |
| C10 - C16 (F2)                 | mg/kg       | 10  | 50     | 20         | 70     | 40         | 80     | 50         | 60     | 210        |        |            |  |
| C16 - C34 (F3)                 | mg/kg       | 10  | 150    | 150        | 230    | 490        | 620    | 310        | 390    | 460        |        |            |  |
| C34 - C50 (F4)                 | mg/kg       | 10  | 40     | 50         | 60     | 180        | 220    | 110        | 140    | 60         |        |            |  |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A        | N/A    | N/A        | N/A    | N/A        | N/A    | N/A        |        |            |  |
| Moisture Content               | %           | 1   | 11     | 12         | 10     | 41         | 20     | 38         | 12     | 7          |        |            |  |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |            |        |            |        |            |        |            |        |            |  |
| Toluene-d8 (BTEX)              | %           | 50-150  | 101    | 100        | 101    | 100        | 101    | 99         | 98     | 99         |        |            |  |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 85     | 64         | 59     | 86         | 77     | 107        | 71     | 92         |        |            |  |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 91     | 83         | 94     | 87         | 84     | 95         | 85     | 100        |        |            |  |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-079B BH19-080A BH19-080B BH19-081A BH19-081B BH19-081C BH19-082A BH19-082B |        |            |            |            |            |            |            |            |            |
|--------------------------------|-------------|---|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | SAMPLE TYPE: Soil   |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |             | DATE SAMPLED: 2019-07-02  |        | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 |
|                                |             | G / S   | RDL    | 327272     | 327273     | 327274     | 327275     | 327276     | 327277     | 327278     | 327279     |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.05       | <0.05      |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg       | 10  | 320    | 70         | 50         | 40         | 70         | 30         | 140        | 110        |            |
| C16 - C34 (F3)                 | mg/kg       | 10  | 520    | 160        | 170        | 200        | 320        | 370        | 260        | 290        |            |
| C34 - C50 (F4)                 | mg/kg       | 10  | 30     | 50         | 70         | 70         | 130        | 160        | 70         | 70         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %           | 1   | 7      | 16         | 14         | 15         | 18         | 21         | 9          | 11         |            |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150  | 99     | 99         | 99         | 99         | 99         | 99         | 99         | 99         | 98         |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 76     | 78         | 82         | 77         | 86         | 59         | 85         | 78         |            |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 104    | 85         | 101        | 89         | 91         | 93         | 91         | 87         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-083A BH19-084A BH19-084B BH19-084C BH19-085A BH19-085B BH19-086A BH19-086B |        |        |        |        |        |        |        |        |        |        |  |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
|                                |             | SAMPLE TYPE: Soil   |        | Soil   |        | Soil   |        | Soil   |        | Soil   |        | Soil   |  |
|                                |             | G / S   | RDL    | 327280 | 327281 | 327282 | 327283 | 327284 | 327285 | 327286 | 327287 |        |  |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |  |
| Toluene                        | mg/kg       | 0.05  | 0.39   | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |  |
| Ethylbenzene                   | mg/kg       | 0.01  | 0.01   | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |  |
| Xylenes                        | mg/kg       | 0.05  | 0.26   | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |  |
| C6 - C10 (F1)                  | mg/kg       | 10  | 20     | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |  |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | 20     | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |  |
| C10 - C16 (F2)                 | mg/kg       | 10  | 800    | 30     | 70     | 20     | 120    | 30     | 10     | 10     | 10     | 10     |  |
| C16 - C34 (F3)                 | mg/kg       | 10  | 900    | 130    | 380    | 80     | 210    | 100    | 60     | 40     | 40     | 40     |  |
| C34 - C50 (F4)                 | mg/kg       | 10  | 90     | 50     | 120    | 30     | 50     | 40     | 30     | 20     | 20     | 20     |  |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |  |
| Moisture Content               | %           | 1   | 11     | 6      | 23     | 9      | 10     | 10     | 8      | 5      | 5      | 5      |  |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |        |  |
| Toluene-d8 (BTEX)              | %           | 50-150  | 99     | 99     | 98     | 98     | 98     | 98     | 98     | 98     | 98     | 99     |  |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 76     | 72     | 82     | 72     | 70     | 71     | 70     | 72     | 72     | 72     |  |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 83     | 92     | 98     | 81     | 85     | 86     | 84     | 80     | 80     | 80     |  |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-087A BH19-087B BH19-088A BH19-088B BH19-089A BH19-089B BH19-090A BH19-090B   |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil Soil Soil Soil Soil Soil Soil Soil  |        |        |        |        |        |        |        |        |        |
|                                |             | DATE SAMPLED: 2019-07-02 2019-07-02 2019-07-02 2019-07-02 2019-07-02 2019-07-02 2019-07-02 2019-07-02 |        |        |        |        |        |        |        |        |        |
|                                |             | G / S   | RDL    | 327288 | 327289 | 327290 | 327291 | 327292 | 327293 | 327294 | 327295 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |
| C10 - C16 (F2)                 | mg/kg       | 10  | 50     | 60     | 40     | 20     | 30     | 40     | 40     | 70     | 70     |
| C16 - C34 (F3)                 | mg/kg       | 10  | 80     | 120    | 130    | 100    | 150    | 160    | 190    | 210    | 210    |
| C34 - C50 (F4)                 | mg/kg       | 10  | 30     | 50     | 50     | 40     | 60     | 60     | 70     | 70     | 70     |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |
| Moisture Content               | %           | 1   | 8      | 8      | 7      | 7      | 9      | 9      | 11     | 11     | 11     |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 98     | 99     | 99     | 99     | 98     | 99     | 99     | 99     | 99     |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 65     | 86     | 77     | 77     | 77     | 75     | 94     | 92     | 92     |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 80     | 68     | 79     | 73     | 77     | 78     | 75     | 84     | 84     |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-091A BH19-091B BH19-092A BH19-092B BH19-092D BH19-093A BH19-093B BH19-094A |       |            |        |            |        |            |        |            |        |            |  |
|--------------------------------|-------------|---|-------|------------|--------|------------|--------|------------|--------|------------|--------|------------|--|
|                                |             | SAMPLE TYPE: Soil   |       | Soil       |        | Soil       |        | Soil       |        | Soil       |        | Soil       |  |
|                                |             | DATE SAMPLED: 2019-07-02  |       | 2019-07-02 |        | 2019-07-02 |        | 2019-07-02 |        | 2019-07-02 |        | 2019-07-02 |  |
|                                |             | G / S   | RDL   | 327296     | 327297 | 327298     | 327299 | 327300     | 327301 | 327302     | 327303 |            |  |
| Benzene                        | mg/kg       | 0.005   | 0.006 | <0.005     | 0.008  | <0.005     | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 |            |  |
| Toluene                        | mg/kg       | 0.05  | <0.05 | 0.05       | 0.06   | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  |            |  |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01 | <0.01      | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  |            |  |
| Xylenes                        | mg/kg       | 0.05  | <0.05 | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  |            |  |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10   | <10        | <10    | <10        | <10    | <10        | <10    | <10        | <10    |            |  |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10   | <10        | <10    | <10        | <10    | <10        | <10    | <10        | <10    |            |  |
| C10 - C16 (F2)                 | mg/kg       | 10  | 90    | 110        | 160    | 120        | 130    | 140        | 210    | 260        |        |            |  |
| C16 - C34 (F3)                 | mg/kg       | 10  | 410   | 390        | 400    | 400        | 450    | 380        | 440    | 530        |        |            |  |
| C34 - C50 (F4)                 | mg/kg       | 10  | 130   | 120        | 120    | 140        | 150    | 100        | 110    | 110        |        |            |  |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A   | N/A        | N/A    | N/A        | N/A    | N/A        | N/A    | N/A        |        |            |  |
| Moisture Content               | %           | 1   | 14    | 12         | 14     | 13         | 15     | 14         | 12     | 13         |        |            |  |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |       |            |        |            |        |            |        |            |        |            |  |
| Toluene-d8 (BTEX)              | %           | 50-150  | 99    | 99         | 99     | 99         | 99     | 99         | 99     | 99         | 99     |            |  |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 81    | 71         | 80     | 85         | 81     | 77         | 98     | 82         |        |            |  |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 86    | 73         | 74     | 71         | 76     | 85         | 98     | 77         |        |            |  |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-094B BH19-095A BH19-095B BH19-096A BH19-096B BH19-097A BH19-097B BH19-098A |        |            |            |            |            |            |            |            |            |
|--------------------------------|-------------|---|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | SAMPLE TYPE: Soil   |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |             | DATE SAMPLED: 2019-07-02  |        | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 |
|                                |             | G / S   | RDL    | 327304     | 327305     | 327306     | 327307     | 327311     | 327312     | 327313     | 327314     |
| Benzene                        | mg/kg       | 0.005   | <0.005 | 0.040      | 0.020      | 0.006      | 0.012      | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05  | 0.07   | 0.21       | 0.10       | <0.05      | 0.07       | 0.05       | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg       | 0.01  | 0.04   | 0.03       | 0.01       | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg       | 0.05  | 0.21   | 0.24       | 0.10       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg       | 10  | 120    | 130        | 70         | 20         | 20         | 90         | 40         | 80         | 80         |
| C16 - C34 (F3)                 | mg/kg       | 10  | 280    | 390        | 260        | 170        | 120        | 290        | 120        | 60         | 60         |
| C34 - C50 (F4)                 | mg/kg       | 10  | 80     | 170        | 120        | 80         | 60         | 70         | 30         | <10        | <10        |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %           | 1   | 33     | 9          | 9          | 6          | 6          | 12         | 8          | 4          | 4          |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150  | 98     | 98         | 98         | 99         | 99         | 101        | 101        | 101        | 102        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 97     | 79         | 85         | 80         | 82         | 71         | 73         | 71         | 71         |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 82     | 66         | 70         | 76         | 72         | 80         | 88         | 88         | 88         |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION:      |        |            |            |            |            |            |            |            |            |
|--------------------------------|-------------|--------------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | SAMPLE TYPE:             |        | BH19-099A  | BH19-099B  | BH19-100A  | BH19-100C  | BH19-101A  | BH19-101B  | BH19-102A  | BH19-102B  |
|                                |             | DATE SAMPLED:            |        | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 |
|                                |             | G / S                    | RDL    | 327315     | 327316     | 327317     | 327318     | 327319     | 327320     | 327321     | 327322     |
| Benzene                        | mg/kg       | 0.005                    | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 2.43       |
| Ethylbenzene                   | mg/kg       | 0.01                     | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg       | 10                       | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10                       | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg       | 10                       | 50     | 80         | 80         | 50         | 20         | 30         | 60         | 120        |            |
| C16 - C34 (F3)                 | mg/kg       | 10                       | 160    | 180        | 160        | 150        | 100        | 60         | 270        | 1910       |            |
| C34 - C50 (F4)                 | mg/kg       | 10                       | 40     | 50         | 40         | 40         | 30         | 10         | 80         | 680        |            |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000                     | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %           | 1                        | 8      | 12         | 9          | 10         | 7          | 8          | 11         | 33         |            |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b> |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150                   | 101    | 101        | 101        | 101        | 101        | 101        | 100        | 101        |            |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150                   | 72     | 71         | 76         | 74         | 70         | 72         | 71         | 88         |            |
| o-Terphenyl (F2-F4)            | %           | 50-150                   | 99     | 90         | 90         | 85         | 81         | 61         | 108        | 91         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION:      |        |            |            |            |            |            |            |            |            |
|--------------------------------|-------------|--------------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | G / S                    |        | BH19-103A  | BH19-103B  | BH19-104A  | BH19-104B  | BH19-105A  | BH19-105B  | BH19-106A  | BH19-106B  |
|                                |             | RDL                      |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |             | DATE SAMPLED:            |        | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 |
| Acceptable Limits              |             | 327323                   | 327324 | 327325     | 327326     | 327327     | 327328     | 327329     | 327330     |            |            |
| Benzene                        | mg/kg       | 0.005                    | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg       | 0.01                     | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg       | 10                       | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10                       | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg       | 10                       | 20     | <10        | 80         | 110        | 90         | 180        | 80         | 170        |            |
| C16 - C34 (F3)                 | mg/kg       | 10                       | 190    | 30         | 200        | 280        | 320        | 70         | 300        | 380        |            |
| C34 - C50 (F4)                 | mg/kg       | 10                       | 70     | 20         | 60         | 80         | 80         | 20         | 80         | 90         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000                     | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %           | 1                        | 10     | 11         | 12         | 12         | 10         | 6          | 17         | 14         |            |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b> |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150                   | 100    | 100        | 100        | 102        | 102        | 101        | 102        | 102        |            |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150                   | 72     | 70         | 67         | 68         | 73         | 67         | 79         | 80         |            |
| o-Terphenyl (F2-F4)            | %           | 50-150                   | 92     | 87         | 76         | 106        | 98         | 100        | 77         | 95         |            |

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AGAT WORK ORDER: 19E489087

PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION:      |        |            |            |            |            |            |            |            |            |
|--------------------------------|-------------|--------------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |             | G / S                    |        | BH19-107A  | BH19-108A  | BH19-108B  | BH19-109A  | BH19-109B  | BH19-110A  | BH19-110B  | BH19-111A  |
|                                |             | RDL                      |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |             | DATE SAMPLED:            |        | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 |
| Benzene                        | mg/kg       | 0.005                    | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg       | 0.01                     | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg       | 10                       | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10                       | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg       | 10                       | 10     | <10        | <10        | <10        | <10        | <10        | 30         | <10        | <10        |
| C16 - C34 (F3)                 | mg/kg       | 10                       | 130    | 70         | 150        | 380        | 100        | 800        | 10         | 60         | 60         |
| C34 - C50 (F4)                 | mg/kg       | 10                       | 50     | 30         | 70         | 180        | 50         | 320        | <10        | 30         | 30         |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000                     | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %           | 1                        | 9      | 9          | 28         | 19         | 10         | 45         | 5          | 8          | 8          |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b> |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150                   | 101    | 108        | 108        | 108        | 108        | 109        | 109        | 109        | 108        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150                   | 73     | 88         | 96         | 87         | 87         | 111        | 88         | 77         | 77         |
| o-Terphenyl (F2-F4)            | %           | 50-150                   | 94     | 79         | 88         | 91         | 82         | 80         | 81         | 86         | 86         |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-111B BH19-112A BH19-112B BH19-113A BH19-113B BH19-114A BH19-114B BH19-115A   |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil Soil Soil Soil Soil Soil Soil Soil  |        |        |        |        |        |        |        |        |        |
|                                |             | DATE SAMPLED: 2019-07-03 2019-07-03 2019-07-03 2019-07-03 2019-07-03 2019-07-03 2019-07-03 2019-07-03 |        |        |        |        |        |        |        |        |        |
|                                |             | G / S   | RDL    | 327339 | 327340 | 327341 | 327342 | 327343 | 327344 | 327345 | 327346 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Toluene                        | mg/kg       | 0.05  | <0.05  | 0.74   | 0.37   | <0.05  | <0.05  | <0.05  | 0.87   | <0.05  |        |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |        |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |        |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10    | <10    | <10    | <10    | <10    | <10    | <10    |        |
| C10 - C16 (F2)                 | mg/kg       | 10  | <10    | <10    | <10    | 20     | 20     | 60     | 30     | 20     |        |
| C16 - C34 (F3)                 | mg/kg       | 10  | 40     | 170    | 100    | 270    | 240    | 150    | 180    | 170    |        |
| C34 - C50 (F4)                 | mg/kg       | 10  | 20     | 70     | 50     | 140    | 120    | 50     | 80     | 70     |        |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |        |
| Moisture Content               | %           | 1   | 8      | 39     | 7      | 24     | 24     | 8      | 26     | 19     |        |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 109    | 108    | 107    | 109    | 109    | 108    | 108    | 109    |        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 84     | 107    | 74     | 92     | 94     | 84     | 87     | 95     |        |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 78     | 85     | 83     | 80     | 86     | 78     | 84     | 83     |        |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION: BH19-115B BH19-116A BH19-116B BH19-117A BH19-117B BH19-118A BH19-118B BH19-119A |        |        |        |        |        |        |        |        |        |
|--------------------------------|-------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                |             | SAMPLE TYPE: Soil Soil Soil Soil Soil Soil Soil Soil  |        |        |        |        |        |        |        |        |        |
|                                |             | DATE SAMPLED: 2019-07-03  |        | 327347 | 327348 | 327349 | 327350 | 327351 | 327352 | 327353 | 327354 |
| Benzene                        | mg/kg       | 0.005   | <0.005 | <0.005 | <0.005 | 0.021  | 0.016  | <0.005 | 0.006  | <0.005 |        |
| Toluene                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | 0.32   | <0.05  | <0.05  | <0.05  | <0.05  |        |
| Ethylbenzene                   | mg/kg       | 0.01  | <0.01  | <0.01  | <0.01  | 0.04   | 0.75   | <0.01  | <0.01  | 0.02   |        |
| Xylenes                        | mg/kg       | 0.05  | <0.05  | <0.05  | <0.05  | 0.35   | 6.95   | <0.05  | <0.05  | 0.12   |        |
| C6 - C10 (F1)                  | mg/kg       | 10  | <10    | <10    | <10    | <10    | 100    | <10    | <10    | 20     |        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10  | <10    | <10    | <10    | <10    | 90     | <10    | <10    | 20     |        |
| C10 - C16 (F2)                 | mg/kg       | 10  | <10    | 30     | 10     | 60     | 20     | 330    | 190    | 130    |        |
| C16 - C34 (F3)                 | mg/kg       | 10  | 60     | 150    | 210    | 390    | 400    | 550    | 340    | 260    |        |
| C34 - C50 (F4)                 | mg/kg       | 10  | 30     | 60     | 90     | 170    | 350    | 40     | 10     | <10    |        |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000  | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    | N/A    |        |
| Moisture Content               | %           | 1   | 6      | 7      | 12     | 12     | 3      | 9      | 8      | 13     |        |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b>  |        |        |        |        |        |        |        |        |        |
| Toluene-d8 (BTEX)              | %           | 50-150  | 109    | 109    | 109    | 107    | 108    | 108    | 109    | 110    |        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150  | 97     | 77     | 90     | 91     | 81     | 82     | 90     | 86     |        |
| o-Terphenyl (F2-F4)            | %           | 50-150  | 78     | 83     | 85     | 80     | 85     | 94     | 107    | 86     |        |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

| Parameter                      | Unit        | SAMPLE DESCRIPTION:      |        |            |            |            |            |            |            |
|--------------------------------|-------------|--------------------------|--------|------------|------------|------------|------------|------------|------------|
|                                |             | SAMPLE TYPE:             |        | BH19-119B  | BH19-119D  | BH19-120A  | BH19-120B  | BH19-121A  | BH19-121B  |
|                                |             | G / S                    | RDL    | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 | 2019-07-03 |
|                                |             |                          |        | 327355     | 327356     | 327357     | 327358     | 327359     | 327360     |
| Benzene                        | mg/kg       | 0.005                    | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg       | 0.05                     | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.14       |
| Ethylbenzene                   | mg/kg       | 0.01                     | 0.02   | 0.02       | <0.01      | <0.01      | <0.01      | <0.01      | 0.03       |
| Xylenes                        | mg/kg       | 0.05                     | 0.13   | 0.14       | <0.05      | <0.05      | <0.05      | <0.05      | 0.36       |
| C6 - C10 (F1)                  | mg/kg       | 10                       | 10     | 10         | <10        | <10        | <10        | <10        | 100        |
| C6 - C10 (F1 minus BTEX)       | mg/kg       | 10                       | 10     | 10         | <10        | <10        | <10        | <10        | 100        |
| C10 - C16 (F2)                 | mg/kg       | 10                       | 390    | 300        | 50         | 90         | 200        | 150        | 150        |
| C16 - C34 (F3)                 | mg/kg       | 10                       | 410    | 420        | 130        | 190        | 380        | 380        | 380        |
| C34 - C50 (F4)                 | mg/kg       | 10                       | 50     | 70         | 10         | <10        | 60         | 90         | 90         |
| Gravimetric Heavy Hydrocarbons | mg/kg       | 1000                     | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %           | 1                        | 13     | 13         | 9          | 10         | 11         | 11         | 24         |
| <b>Surrogate</b>               | <b>Unit</b> | <b>Acceptable Limits</b> |        |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %           | 50-150                   | 110    | 109        | 109        | 108        | 108        | 108        | 109        |
| Ethylbenzene-d10 (BTEX)        | %           | 50-150                   | 89     | 88         | 86         | 81         | 80         | 80         | 97         |
| o-Terphenyl (F2-F4)            | %           | 50-150                   | 95     | 93         | 90         | 97         | 102        | 102        | 105        |

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AGAT WORK ORDER: 19E489087

PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

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SAMPLING SITE:

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**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard**327079-327360**

Results are based on the dry weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
The chromatogram returned to baseline by the retention time of nC50.  
Extraction and holding times were met for this sample.  
C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

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PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

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### Petroleum Hydrocarbons (F3a&b) in Soil

DATE RECEIVED: 2019-07-05

DATE REPORTED: 2019-07-25

|                     |             | SAMPLE DESCRIPTION: BH19-015B |        | BH19-037B  | BH19-039B  | BH19-040B  | BH19-047B  | BH19-048A  | BH19-051B  | BH19-061A  |            |
|---------------------|-------------|-------------------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                     |             | SAMPLE TYPE: Soil             |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |            |
|                     |             | DATE SAMPLED: 2019-07-01      |        | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-01 | 2019-07-02 | 2019-07-02 | 2019-07-02 |            |
| Parameter           | Unit        | G / S                         | RDL    | 327116     | 327160     | 327163     | 327165     | 327199     | 327200     | 327207     | 327224     |
| C16 - C22 (F3a)     | mg/kg       |                               | 10     | 210        | 70         | 280        | 90         | 100        | 130        | 90         | 40         |
| C22 - C34 (F3b)     | mg/kg       |                               | 10     | 1100       | 350        | 3120       | 310        | 440        | 330        | 100        | 110        |
| Moisture Content    | %           |                               | 1      | 29         | 20         | 53         | 19         | 47         | 25         | 10         | 9          |
| <b>Surrogate</b>    | <b>Unit</b> | <b>Acceptable Limits</b>      |        |            |            |            |            |            |            |            |            |
| o-Terphenyl (F2-F4) | %           |                               | 50-150 | 102        | 108        | 109        | 109        | 90         | 90         | 80         | 77         |
|                     |             | SAMPLE DESCRIPTION: BH19-071C |        | BH19-077B  | BH19-078A  | BH19-078B  | BH19-091A  | BH19-092D  | BH19-102B  | BH19-110A  |            |
|                     |             | SAMPLE TYPE: Soil             |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |            |
|                     |             | DATE SAMPLED: 2019-07-02      |        | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-02 | 2019-07-03 | 2019-07-03 |
| Parameter           | Unit        | G / S                         | RDL    | 327249     | 327267     | 327268     | 327269     | 327296     | 327300     | 327322     | 327336     |
| C16 - C22 (F3a)     | mg/kg       |                               | 10     | 70         | 80         | 110        | 50         | 130        | 140        | 300        | 90         |
| C22 - C34 (F3b)     | mg/kg       |                               | 10     | 400        | 430        | 550        | 270        | 280        | 310        | 1630       | 750        |
| Moisture Content    | %           |                               | 1      | 14         | 41         | 20         | 38         | 14         | 15         | 33         | 45         |
| <b>Surrogate</b>    | <b>Unit</b> | <b>Acceptable Limits</b>      |        |            |            |            |            |            |            |            |            |
| o-Terphenyl (F2-F4) | %           |                               | 50-150 | 86         | 87         | 84         | 95         | 86         | 76         | 91         | 80         |
|                     |             | SAMPLE DESCRIPTION: BH19-114B |        |            |            |            |            |            |            |            |            |
|                     |             | SAMPLE TYPE: Soil             |        |            |            |            |            |            |            |            |            |
|                     |             | DATE SAMPLED: 2019-07-03      |        |            |            |            |            |            |            |            |            |
| Parameter           | Unit        | G / S                         | RDL    | 327345     |            |            |            |            |            |            |            |
| C16 - C22 (F3a)     | mg/kg       |                               | 10     | 20         |            |            |            |            |            |            |            |
| C22 - C34 (F3b)     | mg/kg       |                               | 10     | 160        |            |            |            |            |            |            |            |
| Moisture Content    | %           |                               | 1      | 26         |            |            |            |            |            |            |            |
| <b>Surrogate</b>    | <b>Unit</b> | <b>Acceptable Limits</b>      |        |            |            |            |            |            |            |            |            |
| o-Terphenyl (F2-F4) | %           |                               | 50-150 | 84         |            |            |            |            |            |            |            |

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard

**327116-327345** Results are based on the dry weight of the sample.  
Extraction and holding times were met for this sample.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

**CLIENT NAME: IEG CONSULTANTS LTD**
**AGAT WORK ORDER: 19E489087**
**PROJECT: A04012A11**
**ATTENTION TO: Kyle Schepanow**
**SAMPLING SITE:**
**SAMPLED BY:**

| Trace Organics Analysis |       |           |           |        |     |                |              |                    |       |          |                    |       |          |                   |       |
|-------------------------|-------|-----------|-----------|--------|-----|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|
| RPT Date: Jul 25, 2019  |       |           | DUPLICATE |        |     |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |
| PARAMETER               | Batch | Sample Id | Dup #1    | Dup #2 | RPD | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |
|                         |       |           |           |        |     |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 2068 | 327089 | <0.005 | <0.005 | NA    | < 0.005 | 89%  | 80% | 120% | 85%  | 80% | 120% | 74%  | 60% | 140% |
| Toluene          | 2068 | 327089 | <0.05  | <0.05  | NA    | < 0.05  | 102% | 80% | 120% | 90%  | 80% | 120% | 81%  | 60% | 140% |
| Ethylbenzene     | 2068 | 327089 | 0.02   | 0.02   | NA    | < 0.01  | 116% | 80% | 120% | 116% | 80% | 120% | 104% | 60% | 140% |
| Xylenes          | 2068 | 327089 | 0.13   | 0.14   | NA    | < 0.05  | 118% | 80% | 120% | 111% | 80% | 120% | 101% | 60% | 140% |
| C6 - C10 (F1)    | 2068 | 327089 | 20     | 10     | NA    | < 10    | 94%  | 80% | 120% | 113% | 80% | 120% | 90%  | 60% | 140% |
| C10 - C16 (F2)   | 1468 | 327089 | 1140   | 810    | 34.0% | < 10    | 98%  | 80% | 120% | 115% | 80% | 120% | 116% | 60% | 140% |
| C16 - C34 (F3)   | 1468 | 327089 | 440    | 380    | 15.0% | < 10    | 100% | 80% | 120% | 114% | 80% | 120% | 120% | 60% | 140% |
| C34 - C50 (F4)   | 1468 | 327089 | 50     | 40     | NA    | < 10    | 97%  | 80% | 120% | 92%  | 80% | 120% | 95%  | 60% | 140% |
| Moisture Content | 1468 | 327089 | 10     | 11     | 9.5%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
 The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 2078 | 327105 | <0.005 | <0.005 | NA    | < 0.005 | 102% | 80% | 120% | 92%  | 80% | 120% | 83%  | 60% | 140% |
| Toluene          | 2078 | 327105 | <0.05  | <0.05  | NA    | < 0.05  | 107% | 80% | 120% | 96%  | 80% | 120% | 86%  | 60% | 140% |
| Ethylbenzene     | 2078 | 327105 | <0.01  | <0.01  | NA    | < 0.01  | 95%  | 80% | 120% | 89%  | 80% | 120% | 61%  | 60% | 140% |
| Xylenes          | 2078 | 327105 | <0.05  | <0.05  | NA    | < 0.05  | 113% | 80% | 120% | 85%  | 80% | 120% | 80%  | 60% | 140% |
| C6 - C10 (F1)    | 2078 | 327105 | <10    | <10    | NA    | < 10    | 112% | 80% | 120% | 100% | 80% | 120% | 94%  | 60% | 140% |
| C10 - C16 (F2)   | 1183 | 327115 | 450    | 490    | 9.0%  | < 10    | 99%  | 80% | 120% | 110% | 80% | 120% | 103% | 60% | 140% |
| C16 - C34 (F3)   | 1183 | 327115 | 660    | 750    | 13.0% | < 10    | 102% | 80% | 120% | 110% | 80% | 120% | 82%  | 60% | 140% |
| C34 - C50 (F4)   | 1183 | 327115 | 140    | 110    | 24.0% | < 10    | 98%  | 80% | 120% | 114% | 80% | 120% | 86%  | 60% | 140% |
| Moisture Content | 1183 | 327115 | 31     | 26     | 17.5% | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
 The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 1939 | 327125 | <0.005 | <0.005 | NA    | < 0.005 | 100% | 80% | 120% | 91%  | 80% | 120% | 85%  | 60% | 140% |
| Toluene          | 1939 | 327125 | <0.05  | <0.05  | NA    | < 0.05  | 101% | 80% | 120% | 94%  | 80% | 120% | 87%  | 60% | 140% |
| Ethylbenzene     | 1939 | 327125 | <0.01  | <0.01  | NA    | < 0.01  | 95%  | 80% | 120% | 90%  | 80% | 120% | 82%  | 60% | 140% |
| Xylenes          | 1939 | 327125 | <0.05  | <0.05  | NA    | < 0.05  | 104% | 80% | 120% | 89%  | 80% | 120% | 82%  | 60% | 140% |
| C6 - C10 (F1)    | 1939 | 327125 | <10    | <10    | NA    | < 10    | 104% | 80% | 120% | 92%  | 80% | 120% | 82%  | 60% | 140% |
| C10 - C16 (F2)   | 1055 | 327125 | 250    | 220    | 13.0% | < 10    | 89%  | 80% | 120% | 108% | 80% | 120% | 112% | 60% | 140% |
| C16 - C34 (F3)   | 1055 | 327125 | 360    | 330    | 9.0%  | < 10    | 93%  | 80% | 120% | 116% | 80% | 120% | 117% | 60% | 140% |
| C34 - C50 (F4)   | 1055 | 327125 | 100    | 80     | 22.0% | < 10    | 81%  | 80% | 120% | 102% | 80% | 120% | 99%  | 60% | 140% |
| Moisture Content | 1055 | 327125 | 15     | 14     | 6.9%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
 The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|              |      |        |        |        |    |         |     |     |      |     |     |      |     |     |      |
|--------------|------|--------|--------|--------|----|---------|-----|-----|------|-----|-----|------|-----|-----|------|
| Benzene      | 1940 | 327145 | <0.005 | <0.005 | NA | < 0.005 | 97% | 80% | 120% | 91% | 80% | 120% | 77% | 60% | 140% |
| Toluene      | 1940 | 327145 | <0.05  | <0.05  | NA | < 0.05  | 98% | 80% | 120% | 91% | 80% | 120% | 77% | 60% | 140% |
| Ethylbenzene | 1940 | 327145 | 0.01   | 0.01   | NA | < 0.01  | 96% | 80% | 120% | 85% | 80% | 120% | 73% | 60% | 140% |

**AGAT QUALITY ASSURANCE REPORT (V2)**

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AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. RPDs calculated using raw data. The RPD may not be reflective of duplicate values shown, due to rounding of final results.

*Results relate only to the items tested. Results apply to samples as received.*

## Quality Assurance

**CLIENT NAME: IEG CONSULTANTS LTD**
**AGAT WORK ORDER: 19E489087**
**PROJECT: A04012A11**
**ATTENTION TO: Kyle Schepanow**
**SAMPLING SITE:**
**SAMPLED BY:**

### Trace Organics Analysis (Continued)

| RPT Date: Jul 25, 2019 |       |           | DUPLICATE |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|------------------------|-------|-----------|-----------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER              | Batch | Sample Id | Dup #1    | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|                        |       |           |           |        |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Xylenes                | 1940  | 327145    | 0.09      | 0.10   | NA    | < 0.05         | 104%         | 80%                | 120%  | 85%      | 80%                | 120%  | 72%      | 60%               | 140%  |  |
| C6 - C10 (F1)          | 1940  | 327145    | <10       | <10    | NA    | < 10           | 104%         | 80%                | 120%  | 97%      | 80%                | 120%  | 79%      | 60%               | 140%  |  |
| C10 - C16 (F2)         | 1495  | 327145    | 750       | 990    | 28.0% | < 10           | 100%         | 80%                | 120%  | 97%      | 80%                | 120%  | 90%      | 60%               | 140%  |  |
| C16 - C34 (F3)         | 1495  | 327145    | 480       | 540    | 12.0% | < 10           | 89%          | 80%                | 120%  | 92%      | 80%                | 120%  | 93%      | 60%               | 140%  |  |
| C34 - C50 (F4)         | 1495  | 327145    | 40        | 40     | NA    | < 10           | 92%          | 80%                | 120%  | 82%      | 80%                | 120%  | 81%      | 60%               | 140%  |  |
| Moisture Content       | 1495  | 327145    | 14        | 14     | 0.0%  | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 2079 | 327165 | <0.005 | <0.005 | NA    | < 0.005 | 103% | 80% | 120% | 88%  | 80% | 120% | 75%  | 60% | 140% |
| Toluene          | 2079 | 327165 | <0.05  | <0.05  | NA    | < 0.05  | 108% | 80% | 120% | 91%  | 80% | 120% | 78%  | 60% | 140% |
| Ethylbenzene     | 2079 | 327165 | <0.01  | <0.01  | NA    | < 0.01  | 102% | 80% | 120% | 87%  | 80% | 120% | 74%  | 60% | 140% |
| Xylenes          | 2079 | 327165 | <0.05  | <0.05  | NA    | < 0.05  | 116% | 80% | 120% | 85%  | 80% | 120% | 73%  | 60% | 140% |
| C6 - C10 (F1)    | 2079 | 327165 | <10    | <10    | NA    | < 10    | 108% | 80% | 120% | 99%  | 80% | 120% | 86%  | 60% | 140% |
| C10 - C16 (F2)   | 1189 | 327165 | 100    | 100    | 0.0%  | < 10    | 98%  | 80% | 120% | 116% | 80% | 120% | 120% | 60% | 140% |
| C16 - C34 (F3)   | 1189 | 327165 | 410    | 300    | 31.0% | < 10    | 101% | 80% | 120% | 111% | 80% | 120% | 116% | 60% | 140% |
| C34 - C50 (F4)   | 1189 | 327165 | 110    | 90     | 20.0% | < 10    | 100% | 80% | 120% | 80%  | 80% | 120% | 75%  | 60% | 140% |
| Moisture Content | 1189 | 327165 | 19     | 19     | 0.0%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 2069 | 327205 | <0.005 | <0.005 | NA    | < 0.005 | 89%  | 80% | 120% | 85%  | 80% | 120% | 112% | 60% | 140% |
| Toluene          | 2069 | 327205 | <0.05  | <0.05  | NA    | < 0.05  | 99%  | 80% | 120% | 95%  | 80% | 120% | 121% | 60% | 140% |
| Ethylbenzene     | 2069 | 327205 | <0.01  | <0.01  | NA    | < 0.01  | 117% | 80% | 120% | 117% | 80% | 120% | 127% | 60% | 140% |
| Xylenes          | 2069 | 327205 | <0.05  | <0.05  | NA    | < 0.05  | 117% | 80% | 120% | 117% | 80% | 120% | 131% | 60% | 140% |
| C6 - C10 (F1)    | 2069 | 327205 | <10    | <10    | NA    | < 10    | 101% | 80% | 120% | 109% | 80% | 120% | 92%  | 60% | 140% |
| C10 - C16 (F2)   | 1057 | 327205 | 10     | 30     | NA    | < 10    | 96%  | 80% | 120% | 112% | 80% | 120% | 106% | 60% | 140% |
| C16 - C34 (F3)   | 1057 | 327205 | 80     | 100    | 22.2% | < 10    | 93%  | 80% | 120% | 119% | 80% | 120% | 113% | 60% | 140% |
| C34 - C50 (F4)   | 1057 | 327205 | 20     | 20     | NA    | < 10    | 99%  | 80% | 120% | 95%  | 80% | 120% | 91%  | 60% | 140% |
| Moisture Content | 1057 | 327205 | 6      | 6      | 0.0%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|----------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene        | 2070 | 327230 | <0.005 | <0.005 | NA    | < 0.005 | 93%  | 80% | 120% | 82%  | 80% | 120% | 103% | 60% | 140% |
| Toluene        | 2070 | 327230 | 0.06   | 0.06   | NA    | < 0.05  | 102% | 80% | 120% | 88%  | 80% | 120% | 113% | 60% | 140% |
| Ethylbenzene   | 2070 | 327230 | 0.01   | 0.01   | NA    | < 0.01  | 119% | 80% | 120% | 114% | 80% | 120% | 134% | 60% | 140% |
| Xylenes        | 2070 | 327230 | 0.06   | <0.05  | NA    | < 0.05  | 116% | 80% | 120% | 109% | 80% | 120% | 130% | 60% | 140% |
| C6 - C10 (F1)  | 2070 | 327230 | <10    | <10    | NA    | < 10    | 104% | 80% | 120% | 100% | 80% | 120% | 93%  | 60% | 140% |
| C10 - C16 (F2) | 1496 | 327230 | 90     | 80     | 12.0% | < 10    | 90%  | 80% | 120% | 100% | 80% | 120% | 103% | 60% | 140% |

## Quality Assurance

**CLIENT NAME: IEG CONSULTANTS LTD**
**AGAT WORK ORDER: 19E489087**
**PROJECT: A04012A11**
**ATTENTION TO: Kyle Schepanow**
**SAMPLING SITE:**
**SAMPLED BY:**

### Trace Organics Analysis (Continued)

| RPT Date: Jul 25, 2019 |       |           | DUPLICATE |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|------------------------|-------|-----------|-----------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER              | Batch | Sample Id | Dup #1    | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|                        |       |           |           |        |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| C16 - C34 (F3)         | 1496  | 327230    | 310       | 300    | 3.0%  | < 10           | 109%         | 80%                | 120%  | 98%      | 80%                | 120%  | 101%     | 60%               | 140%  |  |
| C34 - C50 (F4)         | 1496  | 327230    | 70        | 60     | 15.0% | < 10           | 91%          | 80%                | 120%  | 85%      | 80%                | 120%  | 87%      | 60%               | 140%  |  |
| Moisture Content       | 1496  | 327230    | 14        | 13     | 7.4%  | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 2080 | 327245 | <0.005 | <0.005 | NA    | < 0.005 | 99%  | 80% | 120% | 94%  | 80% | 120% | 108% | 60% | 140% |
| Toluene          | 2080 | 327245 | <0.05  | <0.05  | NA    | < 0.05  | 103% | 80% | 120% | 96%  | 80% | 120% | 106% | 60% | 140% |
| Ethylbenzene     | 2080 | 327245 | <0.01  | <0.01  | NA    | < 0.01  | 96%  | 80% | 120% | 88%  | 80% | 120% | 104% | 60% | 140% |
| Xylenes          | 2080 | 327245 | <0.05  | <0.05  | NA    | < 0.05  | 109% | 80% | 120% | 86%  | 80% | 120% | 105% | 60% | 140% |
| C6 - C10 (F1)    | 2080 | 327245 | <10    | <10    | NA    | < 10    | 109% | 80% | 120% | 93%  | 80% | 120% | 83%  | 60% | 140% |
| C10 - C16 (F2)   | 1471 | 327246 | 190    | 210    | 10.0% | < 10    | 103% | 80% | 120% | 104% | 80% | 120% | 108% | 60% | 140% |
| C16 - C34 (F3)   | 1471 | 327246 | 230    | 240    | 4.3%  | < 10    | 106% | 80% | 120% | 110% | 80% | 120% | 112% | 60% | 140% |
| C34 - C50 (F4)   | 1471 | 327246 | 20     | 30     | NA    | < 10    | 92%  | 80% | 120% | 92%  | 80% | 120% | 85%  | 60% | 140% |
| Moisture Content | 1471 | 327246 | 10     | 9      | 10.5% | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 1941 | 327269 | <0.005 | <0.005 | NA    | < 0.005 | 96%  | 80% | 120% | 86%  | 80% | 120% | 86%  | 60% | 140% |
| Toluene          | 1941 | 327269 | 7.09   | 7.19   | 1.4%  | < 0.05  | 97%  | 80% | 120% | 86%  | 80% | 120% | 86%  | 60% | 140% |
| Ethylbenzene     | 1941 | 327269 | <0.01  | <0.01  | NA    | < 0.01  | 92%  | 80% | 120% | 82%  | 80% | 120% | 78%  | 60% | 140% |
| Xylenes          | 1941 | 327269 | <0.05  | <0.05  | NA    | < 0.05  | 99%  | 80% | 120% | 81%  | 80% | 120% | 77%  | 60% | 140% |
| C6 - C10 (F1)    | 1941 | 327269 | <10    | <10    | NA    | < 10    | 106% | 80% | 120% | 92%  | 80% | 120% | 84%  | 60% | 140% |
| C10 - C16 (F2)   | 1472 | 327269 | 50     | 60     | 18.2% | < 10    | 108% | 80% | 120% | 106% | 80% | 120% | 114% | 60% | 140% |
| C16 - C34 (F3)   | 1472 | 327269 | 310    | 380    | 20.3% | < 10    | 112% | 80% | 120% | 109% | 80% | 120% | 116% | 60% | 140% |
| C34 - C50 (F4)   | 1472 | 327269 | 110    | 140    | 24.0% | < 10    | 111% | 80% | 120% | 85%  | 80% | 120% | 90%  | 60% | 140% |
| Moisture Content | 1472 | 327269 | 38     | 40     | 5.1%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 1942 | 327289 | <0.005 | <0.005 | NA    | < 0.005 | 96%  | 80% | 120% | 97%  | 80% | 120% | 81%  | 60% | 140% |
| Toluene          | 1942 | 327289 | <0.05  | <0.05  | NA    | < 0.05  | 97%  | 80% | 120% | 99%  | 80% | 120% | 82%  | 60% | 140% |
| Ethylbenzene     | 1942 | 327289 | <0.01  | <0.01  | NA    | < 0.01  | 92%  | 80% | 120% | 91%  | 80% | 120% | 73%  | 60% | 140% |
| Xylenes          | 1942 | 327289 | <0.05  | <0.05  | NA    | < 0.05  | 101% | 80% | 120% | 91%  | 80% | 120% | 72%  | 60% | 140% |
| C6 - C10 (F1)    | 1942 | 327289 | <10    | <10    | NA    | < 10    | 112% | 80% | 120% | 91%  | 80% | 120% | 80%  | 60% | 140% |
| C10 - C16 (F2)   | 1058 | 327303 | 260    | 250    | 3.9%  | < 10    | 101% | 80% | 120% | 101% | 80% | 120% | 105% | 60% | 140% |
| C16 - C34 (F3)   | 1058 | 327303 | 530    | 510    | 3.8%  | < 10    | 99%  | 80% | 120% | 110% | 80% | 120% | 119% | 60% | 140% |
| C34 - C50 (F4)   | 1058 | 327303 | 110    | 100    | 9.5%  | < 10    | 105% | 80% | 120% | 101% | 80% | 120% | 105% | 60% | 140% |
| Moisture Content | 1058 | 327303 | 13     | 15     | 14.3% | < 1     |      |     |      |      |     |      |      |     |      |

## Quality Assurance

**CLIENT NAME: IEG CONSULTANTS LTD**
**AGAT WORK ORDER: 19E489087**
**PROJECT: A04012A11**
**ATTENTION TO: Kyle Schepanow**
**SAMPLING SITE:**
**SAMPLED BY:**

### Trace Organics Analysis (Continued)

| RPT Date: Jul 25, 2019 |       |           | DUPLICATE |        |     |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|------------------------|-------|-----------|-----------|--------|-----|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER              | Batch | Sample Id | Dup #1    | Dup #2 | RPD | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|                        |       |           |           |        |     |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 2081 | 327312 | <0.005 | <0.005 | NA    | < 0.005 | 99%  | 80% | 120% | 97%  | 80% | 120% | 94%  | 60% | 140% |
| Toluene          | 2081 | 327312 | 0.05   | 0.06   | NA    | < 0.05  | 104% | 80% | 120% | 100% | 80% | 120% | 96%  | 60% | 140% |
| Ethylbenzene     | 2081 | 327312 | <0.01  | <0.01  | NA    | < 0.01  | 96%  | 80% | 120% | 95%  | 80% | 120% | 91%  | 60% | 140% |
| Xylenes          | 2081 | 327312 | <0.05  | <0.05  | NA    | < 0.05  | 110% | 80% | 120% | 93%  | 80% | 120% | 89%  | 60% | 140% |
| C6 - C10 (F1)    | 2081 | 327312 | <10    | <10    | NA    | < 10    | 105% | 80% | 120% | 99%  | 80% | 120% | 76%  | 60% | 140% |
| C10 - C16 (F2)   | 1191 | 327312 | 90     | 110    | 20.0% | < 10    | 112% | 80% | 120% | 113% | 80% | 120% | 110% | 60% | 140% |
| C16 - C34 (F3)   | 1191 | 327312 | 290    | 300    | 3.0%  | < 10    | 117% | 80% | 120% | 114% | 80% | 120% | 111% | 60% | 140% |
| C34 - C50 (F4)   | 1191 | 327312 | 70     | 80     | 13.0% | < 10    | 113% | 80% | 120% | 117% | 80% | 120% | 113% | 60% | 140% |
| Moisture Content | 1191 | 327312 | 12     | 10     | 18.2% | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |      |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 2071 | 327332 | <0.005 | <0.005 | NA   | < 0.005 | 91%  | 80% | 120% | 95%  | 80% | 120% | 89%  | 60% | 140% |
| Toluene          | 2071 | 327332 | <0.05  | <0.05  | NA   | < 0.05  | 101% | 80% | 120% | 104% | 80% | 120% | 96%  | 60% | 140% |
| Ethylbenzene     | 2071 | 327332 | <0.01  | <0.01  | NA   | < 0.01  | 118% | 80% | 120% | 116% | 80% | 120% | 119% | 60% | 140% |
| Xylenes          | 2071 | 327332 | <0.05  | <0.05  | NA   | < 0.05  | 118% | 80% | 120% | 117% | 80% | 120% | 115% | 60% | 140% |
| C6 - C10 (F1)    | 2071 | 327332 | <10    | <10    | NA   | < 10    | 109% | 80% | 120% | 105% | 80% | 120% | 83%  | 60% | 140% |
| C10 - C16 (F2)   | 1473 | 327334 | < 10   | < 10   | NA   | < 10    | 112% | 80% | 120% | 107% | 80% | 120% | 100% | 60% | 140% |
| C16 - C34 (F3)   | 1473 | 327334 | 380    | 370    | 2.7% | < 10    | 117% | 80% | 120% | 109% | 80% | 120% | 105% | 60% | 140% |
| C34 - C50 (F4)   | 1473 | 327334 | 180    | 190    | 5.4% | < 10    | 111% | 80% | 120% | 83%  | 80% | 120% | 79%  | 60% | 140% |
| Moisture Content | 1473 | 327334 | 19     | 18     | 5.4% | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 2071 | 327352 | <0.005 | <0.005 | NA    | < 0.005 | 91%  | 80% | 120% | 96%  | 80% | 120% | 79%  | 60% | 140% |
| Toluene          | 2071 | 327352 | <0.05  | <0.05  | NA    | < 0.05  | 101% | 80% | 120% | 104% | 80% | 120% | 88%  | 60% | 140% |
| Ethylbenzene     | 2071 | 327352 | <0.01  | <0.01  | NA    | < 0.01  | 118% | 80% | 120% | 116% | 80% | 120% | 103% | 60% | 140% |
| Xylenes          | 2071 | 327352 | <0.05  | <0.05  | NA    | < 0.05  | 118% | 80% | 120% | 117% | 80% | 120% | 105% | 60% | 140% |
| C6 - C10 (F1)    | 2071 | 327352 | <10    | <10    | NA    | < 10    | 109% | 80% | 120% | 107% | 80% | 120% | 93%  | 60% | 140% |
| C10 - C16 (F2)   | 1498 | 327352 | 210    | 230    | 9.1%  | < 10    | 97%  | 80% | 120% | 115% | 80% | 120% | 112% | 60% | 140% |
| C16 - C34 (F3)   | 1498 | 327352 | 420    | 550    | 26.8% | < 10    | 104% | 80% | 120% | 113% | 80% | 120% | 113% | 60% | 140% |
| C34 - C50 (F4)   | 1498 | 327352 | 50     | 40     | NA    | < 10    | 98%  | 80% | 120% | 92%  | 80% | 120% | 92%  | 60% | 140% |
| Moisture Content | 1498 | 327352 | 9      | 9      | 0.0%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

## Quality Assurance

 CLIENT NAME: IEG CONSULTANTS LTD  
 PROJECT: A04012A11  
 SAMPLING SITE:

 AGAT WORK ORDER: 19E489087  
 ATTENTION TO: Kyle Schepanow  
 SAMPLED BY:

### Trace Organics Analysis (Continued)

| RPT Date: Jul 25, 2019 |       |              | DUPLICATE |        |     | Method<br>Blank | REFERENCE MATERIAL |                      |       | METHOD BLANK SPIKE |                      |       | MATRIX SPIKE |                      |       |
|------------------------|-------|--------------|-----------|--------|-----|-----------------|--------------------|----------------------|-------|--------------------|----------------------|-------|--------------|----------------------|-------|
| PARAMETER              | Batch | Sample<br>Id | Dup #1    | Dup #2 | RPD |                 | Measured<br>Value  | Acceptable<br>Limits |       | Recovery           | Acceptable<br>Limits |       | Recovery     | Acceptable<br>Limits |       |
|                        |       |              |           |        |     |                 |                    | Lower                | Upper |                    | Lower                | Upper |              | Lower                | Upper |
|                        |       |              |           |        |     |                 |                    |                      |       |                    |                      |       |              |                      |       |

Certified By:



## Method Summary

**CLIENT NAME: IEG CONSULTANTS LTD**
**AGAT WORK ORDER: 19E489087**
**PROJECT: A04012A11**
**ATTENTION TO: Kyle Schepanow**
**SAMPLING SITE:**
**SAMPLED BY:**

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| <b>Trace Organics Analysis</b> |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C22 (F3a)                | ORG-170-5120/5300               | CCME Tier 1 Method     | GC/FID               |
| C22 - C34 (F3b)                | ORG-170-5120/5300               | CCME Tier 1 Method     | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method     | GRAVIMETRIC          |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method     | GC/FID               |



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webeath.agatlabs.com

### Laboratory Use Only

Arrival Temperature: 9.2°C  
AGAT Job Number: 19E489087

Notes: 19 JUL 5 12:23

P: 780.395.2525 - F: 780.462.2490

## Chain of Custody Record

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

### Report Format

- Single Sample per page  
 Multiple Samples per page  
 Excel Format included

### Turnaround Time Required (TAT)

- Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To Same Yes / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

### Requirements (Check one)

- CCME  AB Tier 1  BC CSR  
 Agricultural  Industrial  AW  
 Residential/Park  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL  
 Other  SPIGEC  
 D50 (Drilling)

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|
| 327079                    | BH19-001A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 085                       | BH19-001B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 086                       | BH19-002A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 087                       | BH19-002B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 089                       | BH19-003A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 090                       | BH19-003B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 091                       | BH19-004A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 092                       | BH19-004B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 093                       | BH19-005A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 094                       | BH19-005B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 095                       | BH19-006A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |

|  |                                      |   |                                      |   |                            |
|--|--------------------------------------|---|--------------------------------------|---|----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> <i>Shannem</i> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>Jason Trasmante</u> <i>Trasmante</i> | Date/Time:<br><u>5 July 19 12:23</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy - AGAT | Page <u>1</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):  | Date/Time:                           |   |                            |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):  | Date/Time:                           |   |                            |

E 14806





### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
  
19 JUL 5 12:24

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

**Report Information**

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW  
 Residential/Park  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL

Other  
 D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|
| <u>327096</u>             | BH19-006B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>097</u>                | BH19-007A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>098</u>                | BH19-007B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>099</u>                | BH19-008A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>100</u>                | BH19-008B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>101</u>                | BH19-009A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>102</u>                | BH19-009B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>—</u>                  | BH19-009A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>—</u>                  | BH19-009B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>105</u>                | BH19-010A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>106</u>                | BH19-010B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |

|   |                                      |   |                                    |                            |
|---|--------------------------------------|---|------------------------------------|----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmak</u> | Date/Time:<br><u>July 19 12:24</u> | Page <u>2</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                         | Pink Copy - Client         |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                         | Yellow Copy - AG/          |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                         | White Copy- AG/            |

E 14807



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

Notes:  
19 JUL 5 12:24

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

### Report Format

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

### Requirements (Check one)

CCME  AB Tier 1  BC CSR  
 Agricultural  Industrial  AW  
 Residential/Park  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL  
 Other  SPIGEC  
 D50 (Drilling)

| # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|
|                 |          |                                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|--|--|-----------------|------------------------------|
| <u>327107</u>             | BH19-011A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |
| <u>108</u>                | BH19-011B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |
| <u>109</u>                | BH19-012A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |
| <u>110</u>                | BH19-012B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |
| <u>111</u>                | BH19-013A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |
| <u>112</u>                | BH19-013B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |
| <u>113</u>                | BH19-014A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |
| <u>114</u>                | BH19-014B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |
| <u>115</u>                | BH19-015A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |
| <u>116</u>                | BH19-015B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |
| <u>117</u>                | BH19-016A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |

|   |                                      |  |                                      |                            |
|---|--------------------------------------|--|--------------------------------------|----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmank</u> | Date/Time:<br><u>5 July 19 12:24</u> | Page <u>3</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                       | Date/Time:                           | Pink Copy - Client         |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                       | Date/Time:                           | Yellow Copy - AG           |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                       | Date/Time:                           | White Copy - AG            |

E 14808



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes: 19 JUL 5 12:24

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

### Report Format

- Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

### Requirements (Check one)

- CCME       AB Tier 1       BC CSR
- Agricultural       Industrial       AW  
 Residential/Park       Commercial       IW  
 Drinking Water       Natural Area       LW  
 FWAL       DW  
 Other  
 D50 (Drilling)       SPIGEC

### Turnaround Time Required (TAT)

- Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox                            | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|-------------------------------------|---------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|
| 327118                    | BH19-016B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 119                       | BH19-017A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 120                       | BH19-017B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 121                       | BH19-018A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 122                       | BH19-018B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 123                       | BH19-019A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 124                       | BH19-019B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 125                       | BH19-020A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 126                       | BH19-020B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 127                       | BH19-021A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 128                       | BH19-021B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |

Samples Relinquished By (Print Name and Sign): Stephanie Hannem  
Date/Time: July 3/19 18:00

Samples Received By (Print Name and Sign): J. Trasmole  
Date/Time: \_\_\_\_\_

Samples Relinquished By (Print Name and Sign): \_\_\_\_\_  
Date/Time: \_\_\_\_\_

Samples Received By (Print Name and Sign): \_\_\_\_\_  
Date/Time: 5 July 19 12:24

Page 4 of 23  
Pink Copy - Client  
Yellow Copy - AGAT  
White Copy - AGAT



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
19 JUL 5 12:24

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

### Report Format

- Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

### Requirements (Check one)

- CCME       AB Tier 1       BC CSR
- Agricultural       Industrial       AW  
 Residential/Park       Commercial       IW  
 Drinking Water       Natural Area       LW  
 FWAL       DW
- Other  
 D50 (Drilling)       SPIGEC

### Turnaround Time Required (TAT)

- Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION. CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox                            | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|-------------------------------------|---------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|
| <u>327129</u>             | BH19-022A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>130</u>                | BH19-022B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>131</u>                | BH19-023A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>132</u>                | BH19-023B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>133</u>                | BH19-024A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>134</u>                | BH19-024B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>135</u>                | BH19-025A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>136</u>                | BH19-025B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>137</u>                | BH19-026A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>138</u>                | BH19-026B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>139</u>                | BH19-027A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |

|   |                                      |   |                                      |  |                            |
|---|--------------------------------------|---|--------------------------------------|--|----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Tramm</u> | Date/Time:<br><u>5 July 19 12:41</u> | Pink Copy - Client<br>Yellow Copy - AG/<br>White Copy- AGA | Page <u>5</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                    | Date/Time:                           |  |                            |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                    | Date/Time:                           |  |                            |



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

Notes:  
19 JUL 5 12:24

**Report Information**

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Requirements (Check one)**

CCME       AB Tier 1       BC CSR

Agricultural       Industrial       AW  
 Residential/Park       Commercial       LW  
 Drinking Water       Natural Area       DW  
 FWAL

Other  
 D50 (Drilling)       SPIGEC

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To**      Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox                            | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|-------------------------------------|---------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|
| 327140                    | BH19-027B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| 141                       | BH19-028A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| 142                       | BH19-028B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| 143                       | BH19-029A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| 144                       | BH19-029B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| 145                       | BH19-030A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| 146                       | BH19-030B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| 147                       | BH19-031A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| 148                       | BH19-031B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| 149                       | BH19-032A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| 150                       | BH19-032B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |

|   |                                      |  |                                      |                    |                            |
|---|--------------------------------------|--|--------------------------------------|--------------------|----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:02</u> | Samples Received By (Print Name and Sign):<br><u>J. Tasmak</u> | Date/Time:<br><u>5 July 19 12:24</u> | Pink Copy - Client | Page <u>6</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                     | Date/Time:                           | Yellow Copy - AGAT |                            |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                     | Date/Time:                           | White Copy - AGAT  |                            |

E 14811



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
  
19 JUL 5 12:24

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

**Report Information**

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW  
 Residential/Park  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL

Other  
 D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|
| <u>327151</u>             | BH19-033A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>152</u>                | BH19-033B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>153</u>                | BH19-034A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>154</u>                | BH19-034B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>155</u>                | BH19-035A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>156</u>                | BH19-035B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>157</u>                | BH19-036A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>158</u>                | BH19-036B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>159</u>                | BH19-037A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>160</u>                | BH19-037B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>161</u>                | BH19-038A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |

|   |                                      |   |                                     |   |                            |
|---|--------------------------------------|---|-------------------------------------|---|----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmak</u> | Date/Time:<br><u>July 19 12:24H</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy - AGAT | Page <u>7</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                          |   |                            |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                          |   |                            |

F 14812



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

Notes:  
19 JUL 5 12:24

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

### Report Format

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

### Requirements (Check one)

CCME  AB Tier 1  BC CSR  
 Agricultural  Industrial  AW  
 Residential/Park  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL  
 Other  SPIGEC  
 D50 (Drilling)

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|
| <u>327/162</u>            | BH19-039A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>163</u>                | BH19-039B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>164</u>                | BH19-040A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>165</u>                | BH19-040B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>166</u>                | BH19-041A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>167</u>                | BH19-041B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>168</u>                | BH19-042A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>169</u>                | BH19-042B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>170</u>                | BH19-043A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>171</u>                | BH19-043B             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>172</u>                | BH19-044A             | SOIL          | JULY 1/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |

|   |                                      |  |                                      |                    |                            |
|---|--------------------------------------|--|--------------------------------------|--------------------|----------------------------|
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| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                     | Date/Time:                           | Yellow Copy - AGAT |                            |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                     | Date/Time:                           | White Copy - AGAT  |                            |

F 14813



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
19 JUL 5 12:24

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

**Report Information**

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILING OUT THIS SECTION. CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW  
 Residential/Park  Commercial  IW  
 Commercial  DW  
 Drinking Water  Natural Area  
 FWAL

Other  
 D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox                            | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|-------------------------------------|---------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|
| 327173                    | BH19-044B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 174                       | BH19-045A             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 175                       | BH19-045B             | SOIL          | JULY 1/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 176                       | BH19-046A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 197                       | BH19-046B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 198                       | BH19-047A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 199                       | BH19-047B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 200                       | BH19-048A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 201                       | BH19-048B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 202                       | BH19-049A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 203                       | BH19-049B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |

|  |                                      |  |                                |                    |                            |
|--|--------------------------------------|--|--------------------------------|--------------------|----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> <i>SHannem</i> | Date/Time:<br><u>July 3/19 18:08</u> | Samples Received By (Print Name and Sign):<br><u>J. Tralmark</u> <i>Tralmark</i> | Date/Time:<br><u>5 July 19</u> | Pink Copy - Client | Page <u>9</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):                                       | Date/Time:                     | Yellow Copy - AGAT |                            |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):                                       | Date/Time:                     | White Copy - AGAT  |                            |





# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

Notes:  
19 JUL 5 12:24

**Report Information**

Company: IEG Consultants  
 Contact: Kyle Schepanow  
 Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
 Phone: 403-648-4292 Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
 Email: shannem@klohn.com  
 2. Name: Kim Mackenzie  
 Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
 Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW  
 Residential/Park  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL

Other  
 D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox                            | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|-------------------------------------|---------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|
| <u>327204</u>             | BH19-050A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>205</u>                | BH19-050B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>206</u>                | BH19-051A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>207</u>                | BH19-051B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>208</u>                | BH19-052A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>209</u>                | BH19-052B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>210</u>                | BH19-053A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>211</u>                | BH19-053B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>212</u>                | BH19-054A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>213</u>                | BH19-054B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>214</u>                | BH19-055A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |

|   |                                      |   |                                |   |   |
|---|--------------------------------------|---|--------------------------------|---|---|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmak</u> | Date/Time:<br><u>5 July 19</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy - AGAT | Page <u>10</u> of <u>23</u><br><br><b>F 14815</b> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                     |   |   |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                     |   |   |



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6310 Roper Road NW  
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### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

### Report Format

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

Notes:  
19 JUL 5 12:24

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To

Same Yes  / No

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### Requirements (Check one)

CCME  AB Tier 1  BC CSR  
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 Industrial  Industrial  IW  
 Residential/Park  Residential/Park  LW  
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|---------------------------|-----------------------|---------------|-------------------|---|-----------------|-------------------------------------|---------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|
| <u>327215</u>             | BH19-056A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>216</u>                | BH19-056B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>217</u>                | BH19-057A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>218</u>                | BH19-057B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>219</u>                | BH19-058A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>220</u>                | BH19-058B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>221</u>                | BH19-059A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>222</u>                | BH19-060A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>223</u>                | BH19-060B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>224</u>                | BH19-061A             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |
| <u>225</u>                | BH19-061B             | SOIL          | JULY 2/19         |   | 3               | <input checked="" type="checkbox"/> |                     |        |                      |                   |                    |                 |                              |

|   |                                      |   |                                |                    |                             |
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| Samples Relinquished By (Print Name and Sign):  | Date/Time:                           | Samples Received By (Print Name and Sign):  | Date/Time:                     | Yellow Copy - AGAT |                             |
| Samples Relinquished By (Print Name and Sign):  | Date/Time:                           | Samples Received By (Print Name and Sign):  | Date/Time:                     | White Copy - AGAT  |                             |



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
  
19 JUL 5 12:24

## Chain of Custody Record

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LSD: \_\_\_\_\_  
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### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
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Single Sample per page  
 Multiple Samples per page  
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CCME       AB Tier 1       BC CSR  
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 Industrial       Industrial       IW  
 Residential/Park       Residential/Park       LW  
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 Other  
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Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
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PO/AFE#: IO2019-001

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|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|
| 327226                    | BH19-062A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 227                       | BH19-062B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 228                       | BH19-063A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 229                       | BH19-063B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 230                       | BH19-064A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 231                       | BH19-064B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 232                       | BH19-064C             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 233                       | BH19-065A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 234                       | BH19-065B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 235                       | BH19-066A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 236                       | BH19-066B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |

|   |                                      |   |                                      |  |                             |
|---|--------------------------------------|---|--------------------------------------|--|-----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmak</u> | Date/Time:<br><u>5 July 19 12:24</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy- AGAT | Page <u>12</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                           |  |                             |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                           |  |                             |

F 14817



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

**Laboratory Use Only**

Arrival Temperature: \_\_\_\_\_

AGAT Job Number: 19E489087

Notes:  
19 JUL 5 12:24

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

**Report Information**

Company: IEG Consultants

Contact: Kyle Schepanow

Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7

Phone: 403-648-4292 Fax: \_\_\_\_\_

LSD: \_\_\_\_\_

Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com

2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page

Multiple Samples per page

Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days

Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION. CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE

Contact: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW

Residential/Park  Residential/Park  IW

Commercial  Commercial  LW

Drinking Water  Natural Area  DW

FWAL

Other  D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|
| <u>327237</u>             | BH19-067A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>238</u>                | BH19-067B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>239</u>                | BH19-068A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>240</u>                | BH19-068B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>241</u>                | BH19-068D             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>242</u>                | BH19-069A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>243</u>                | BH19-069B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>244</u>                | BH19-070A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>245</u>                | BH19-070B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>246</u>                | BH19-070C             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>247</u>                | BH19-071A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |

|   |                                      |  |                                      |  |                             |
|---|--------------------------------------|--|--------------------------------------|--|-----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmank</u> | Date/Time:<br><u>5 July 19 12:41</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy- AGAT | Page <u>13</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                       | Date/Time:                           |  |                             |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                       | Date/Time:                           |  |                             |

E 14818



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

Notes:  
19 JUL 5 12:24

**Report Information**

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW  
 Residential/Park  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL

Other  
 D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|
| <u>327248</u>             | BH19-071B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>249</u>                | BH19-071C             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>250</u>                | BH19-072A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>251</u>                | BH19-072B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>252</u>                | BH19-072C             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>253</u>                | BH19-073A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>257</u>                | BH19-073B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>259</u>                | BH19-074A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>260</u>                | BH19-074B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>261</u>                | BH19-075A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>262</u>                | BH19-075B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |

|   |                                      |  |                                      |   |                             |
|---|--------------------------------------|--|--------------------------------------|---|-----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Tasmak</u> | Date/Time:<br><u>5 July 19 12:24</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy - AGAT | Page <u>14</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                     | Date/Time:                           |   |                             |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                     | Date/Time:                           |   |                             |

E 14819



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
19 JUL 5 12:24

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

### Report Format

- Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

### Turnaround Time Required (TAT)

- Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION. CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

### Requirements (Check one)

- CCME  AB Tier 1  BC CSR  
 Agricultural  Industrial  AW  
 Residential/Park  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL  
 Other  D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|
| 327263                    | BH19-075C             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 264                       | BH19-076A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 265                       | BH19-076B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 266                       | BH19-077A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 267                       | BH19-077B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 268                       | BH19-078A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 269                       | BH19-078B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 270                       | BH19-078C             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 271                       | BH19-079A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 272                       | BH19-079B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| 273                       | BH19-080A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |

|  |                                      |   |                                      |                             |
|--|--------------------------------------|---|--------------------------------------|-----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> <i>[Signature]</i> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trautman</u> <i>[Signature]</i> | Date/Time:<br><u>5 July 19 12:24</u> | Page <u>15</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):  | Date/Time:                           | Pink Copy - Client          |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):  | Date/Time:                           | Yellow Copy - AGAT          |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):  | Date/Time:                           | White Copy - AGAT           |

E 14820



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
19 JUL 5 12:24

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

### Report Format

- Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

### Turnaround Time Required (TAT)

- Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

### Requirements (Check one)

- CCME  AB Tier 1  BC CSR  
 Agricultural  Industrial  AW  
 Residential/Park  Commercial  IW  
 Drinking Water  Natural Area  LW  
 FWAL  DW  
 Other  SPIGEC  
 D50 (Drilling)

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|
| <u>327274</u>             | BH19-080B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>275</u>                | BH19-081A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>276</u>                | BH19-081B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>277</u>                | BH19-081C             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>278</u>                | BH19-082A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>279</u>                | BH19-082B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>280</u>                | BH19-083A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>281</u>                | BH19-084A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>282</u>                | BH19-084B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>283</u>                | BH19-084C             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |
| <u>284</u>                | BH19-085A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |                 |                              |  |

|  |                                      |   |                                |   |                             |
|--|--------------------------------------|---|--------------------------------|---|-----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> <i>[Signature]</i> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmate</u> <i>[Signature]</i> | Date/Time:<br><u>5 July 19</u> | Pink Copy - Client<br>Yellow Copy - AGA<br>White Copy- AGAT | Page <u>16</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):  | Date/Time:                     |   |                             |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):  | Date/Time:                     |   |                             |

E 14821



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
19 JUL 5 12:25

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

### Report Information

Company: IEG Consultants  
 Contact: Kyle Schepanow  
 Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
 Phone: 403-648-4292 Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
 Email: shannem@klohn.com  
 2. Name: Kim Mackenzie  
 Email: kmackenzie@klohn.com

### Report Format

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 working days  
 Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: IO2019-001

### Requirements (Check one)

|   |   |                                 |
|---|---|---------------------------------|
| <input type="checkbox"/> CCME             | <input type="checkbox"/> AB Tier 1        | <input type="checkbox"/> BC CSR |
| <input type="checkbox"/> Agricultural     | <input type="checkbox"/> Agricultural     | <input type="checkbox"/> AW     |
| <input type="checkbox"/> Industrial       | <input type="checkbox"/> Industrial       | <input type="checkbox"/> IW     |
| <input type="checkbox"/> Residential/Park | <input type="checkbox"/> Residential/Park | <input type="checkbox"/> LW     |
| <input type="checkbox"/> Commercial       | <input type="checkbox"/> Commercial       | <input type="checkbox"/> DW     |
| <input type="checkbox"/> Drinking Water   | <input type="checkbox"/> Natural Area     |                                 |
| <input type="checkbox"/> FWAL             |   |                                 |
| <input type="checkbox"/> Other            |   |                                 |
| <input type="checkbox"/> D50 (Drilling)   | <input type="checkbox"/> SPIGEC           |                                 |

| # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|--|--|--|--|-----------------|------------------------------|
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT |
|---------------------------|-----------------------|---------------|-------------------|---|
| <u>327285</u>             | BH19-085B             | SOIL          | JULY 2/19         |   |
| <u>286</u>                | BH19-086A             | SOIL          | JULY 2/19         |   |
| <u>287</u>                | BH19-086B             | SOIL          | JULY 2/19         |   |
| <u>288</u>                | BH19-087A             | SOIL          | JULY 2/19         |   |
| <u>289</u>                | BH19-087B             | SOIL          | JULY 2/19         |   |
| <u>290</u>                | BH19-088A             | SOIL          | JULY 2/19         |   |
| <u>291</u>                | BH19-088B             | SOIL          | JULY 2/19         |   |
| <u>292</u>                | BH19-089A             | SOIL          | JULY 2/19         |   |
| <u>293</u>                | BH19-089B             | SOIL          | JULY 2/19         |   |
| <u>294</u>                | BH19-090A             | SOIL          | JULY 2/19         |   |
| <u>295</u>                | BH19-090B             | SOIL          | JULY 2/19         |   |

|   |                                      |  |                                |   |                             |
|---|--------------------------------------|--|--------------------------------|---|-----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmack</u> | Date/Time:<br><u>5 July 19</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy - AGAT | Page <u>17</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                       | Date/Time:                     |   |                             |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                       | Date/Time:                     |   |                             |

E 14822





### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087  
Notes: 19 JUL 5 12:25

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

### Report Format

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION. CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

### Requirements (Check one)

CCME  AB Tier 1  BC CSR  
 Agricultural  Industrial  AW  
 Residential/Park  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL  
 Other  D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|
| 327296                    | BH19-091A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 297                       | BH19-091B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 298                       | BH19-092A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 299                       | BH19-092B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 300                       | BH19-092D             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 301                       | BH19-093A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 302                       | BH19-093B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 303                       | BH19-094A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 304                       | BH19-094B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 305                       | BH19-095A             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |
| 306                       | BH19-095B             | SOIL          | JULY 2/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |                 |                              |  |

|  |                                      |  |                                |  |                             |
|--|--------------------------------------|--|--------------------------------|--|-----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem Attanhem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Truitt</u> | Date/Time:<br><u>5 July 19</u> | Pink Copy - Client<br>Yellow Copy - AG<br>White Copy - AG/ | Page <u>18</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                                     | Date/Time:                           | Samples Received By (Print Name and Sign):                     | Date/Time:                     |  |                             |
| Samples Relinquished By (Print Name and Sign):                                     | Date/Time:                           | Samples Received By (Print Name and Sign):                     | Date/Time:                     |  |                             |

E 14823



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

Notes: \_\_\_\_\_  
19 JUL 5 12:25

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

### Report Format

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

### Requirements (Check one)

CCME       AB Tier 1       BC CSR  
 Agricultural       Agrl cultural       AW  
 Industrial       Industrial       IW  
 Residential/Park       Residential/Park       LW  
 Commercial       Commercial       DW  
 Drinking Water       Natural Area  
 FWAL  
 Other  
 D50 (Drilling)       SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |  |  |  |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|--|--|-----------------|------------------------------|--|--|--|--|--|
| 327307                    | BH19-096A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |
| 311                       | BH19-096B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |
| 312                       | BH19-097A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |
| 313                       | BH19-097B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |
| 314                       | BH19-098A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |
| 315                       | BH19-099A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |
| 316                       | BH19-099B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |
| 317                       | BH19-100A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |
| 318                       | BH19-100C             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |
| 319                       | BH19-101A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |
| 320                       | BH19-101B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |                 |                              |  |  |  |  |  |

|   |                                      |   |                                |  |                             |
|---|--------------------------------------|---|--------------------------------|--|-----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmok</u> | Date/Time:<br><u>5 July 19</u> | Pink Copy - Client<br>Yellow Copy - AG<br>White Copy - AG/ | Page <u>19</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                     |  |                             |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                     |  |                             |

E 14824



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
19 JUL 5 12:25

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

**Report Information**

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW  
 Residential/Park  Residential/Park  IW  
 Commercial  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL

Other  D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|
| <u>327321</u>             | BH19-102A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>322</u>                | BH19-102B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>323</u>                | BH19-103A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>324</u>                | BH19-103B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>325</u>                | BH19-104A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>326</u>                | BH19-104B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>327</u>                | BH19-105A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>328</u>                | BH19-105B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>329</u>                | BH19-106A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>330</u>                | BH19-106B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |
| <u>331</u>                | BH19-107A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |                 |                              |

|  |                                      |  |                                |   |  |
|--|--------------------------------------|--|--------------------------------|---|--|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> <i>Stannem</i> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trosmak</u> <i>Trosmak</i> | Date/Time:<br><u>5 July 19</u> | Pink Copy - Client<br>Yellow Copy - AG<br>White Copy - AG | Page <u>20</u> of <u>23</u><br><br>E 14825 |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):                                     | Date/Time:                     |   |  |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):                                     | Date/Time:                     |   |  |



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
19 JUL 5 12:25

## Chain of Custody Record

P: 780.395.2525 - F: 780.462.2490

**Report Information**

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW  
 Residential/Park  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL

Other  SPIGEC  
 D50 (Drilling)  SPIGEC

| # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------------|------------------------------|
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |
| 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |                              |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT |
|---------------------------|-----------------------|---------------|-------------------|---|
| <u>327332</u>             | BH19-108A             | SOIL          | JULY 3/19         |   |
| <u>333</u>                | BH19-108B             | SOIL          | JULY 3/19         |   |
| <u>334</u>                | BH19-109A             | SOIL          | JULY 3/19         |   |
| <u>335</u>                | BH19-109B             | SOIL          | JULY 3/19         |   |
| <u>336</u>                | BH19-110A             | SOIL          | JULY 3/19         |   |
| <u>337</u>                | BH19-110B             | SOIL          | JULY 3/19         |   |
| <u>338</u>                | BH19-111A             | SOIL          | JULY 3/19         |   |
| <u>339</u>                | BH19-111B             | SOIL          | JULY 3/19         |   |
| <u>340</u>                | BH19-112A             | SOIL          | JULY 3/19         |   |
| <u>341</u>                | BH19-112B             | SOIL          | JULY 3/19         |   |
| <u>342</u>                | BH19-113A             | SOIL          | JULY 3/19         |   |

|   |                                      |   |                                |  |  |
|---|--------------------------------------|---|--------------------------------|--|--|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmak</u> | Date/Time:<br><u>5 July 19</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy- AGAT | Page <u>21</u> of <u>23</u><br><br>E 14826 |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                     |  |  |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                     |  |  |



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

## Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

Notes:  
19 JUL 5 12:25

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

**Report Information**

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW  
 Residential/Park  Commercial  IW  
 Drinking Water  Natural Area  LW  
 FWAL  DW

Other  D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|-----------------|------------------------------|
| 327343                    | BH19-113B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |
| 344                       | BH19-114A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |
| 345                       | BH19-114B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |
| 346                       | BH19-115A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |
| 347                       | BH19-115B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |
| 348                       | BH19-116A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |
| 349                       | BH19-116B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |
| 350                       | BH19-117A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |
| 351                       | BH19-117B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |
| 352                       | BH19-118A             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |
| 353                       | BH19-118B             | SOIL          | JULY 3/19         |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |                 |                              |

|   |                                      |   |                                |                    |                             |
|---|--------------------------------------|---|--------------------------------|--------------------|-----------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmak</u> | Date/Time:<br><u>5 July 19</u> | Pink Copy - Client | Page <u>22</u> of <u>23</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                     | Yellow Copy -      |                             |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                     | White Copy - A     |                             |

E 14827



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E489087

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

Notes: 19 JUL 5 12:25

**Report Information**

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW  
 Residential/Park  Residential/Park  IW  
 Commercial  Commercial  LW  
 Drinking Water  Natural Area  DW  
 FWAL

Other  SPIGEC  
 D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION  | SAMPLE MATRIX   | DATE/TIME SAMPLED    | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox                                       | CCME PHC BTEX/F-1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|------------------------|-----------------|----------------------|---|-----------------|--|----------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|
| <u>327354</u>             | BH19- <u>119A</u>      | SOIL            | JULY 3/19            |   | 3               | <input checked="" type="checkbox"/>            |                      |        |                      |                   |                    |                 |                              |
| <u>355</u>                | BH19- <u>119B</u>      | SOIL            | JULY 3/19            |   | 3               | <input checked="" type="checkbox"/>            |                      |        |                      |                   |                    |                 |                              |
| <u>356</u>                | BH19- <u>119D</u>      | SOIL            | JULY 3/19            |   | 3               | <input checked="" type="checkbox"/>            |                      |        |                      |                   |                    |                 |                              |
| <u>357</u>                | BH19- <u>120A</u>      | SOIL            | JULY 3/19            |   | 3               | <input checked="" type="checkbox"/>            |                      |        |                      |                   |                    |                 |                              |
| <u>358</u>                | BH19- <u>120B</u>      | SOIL            | JULY 3/19            |   | 3               | <input checked="" type="checkbox"/>            |                      |        |                      |                   |                    |                 |                              |
| <u>359</u>                | BH19- <u>121A</u>      | SOIL            | JULY 3/19            |   | 3               | <input checked="" type="checkbox"/>            |                      |        |                      |                   |                    |                 |                              |
| <u>360</u>                | BH19- <u>121B</u>      | SOIL            | JULY 3/19            |   | 3               | <input checked="" type="checkbox"/>            |                      |        |                      |                   |                    |                 |                              |
|                           | <del>BH19- _____</del> | <del>SOIL</del> | <del>JULY 3/19</del> |   | <del>3</del>    | <del><input checked="" type="checkbox"/></del> |                      |        |                      |                   |                    |                 |                              |
|                           | <del>BH19- _____</del> | <del>SOIL</del> | <del>JULY 3/19</del> |   | <del>3</del>    | <del><input checked="" type="checkbox"/></del> |                      |        |                      |                   |                    |                 |                              |
|                           | <del>BH19- _____</del> | <del>SOIL</del> | <del>JULY 3/19</del> |   | <del>3</del>    | <del><input checked="" type="checkbox"/></del> |                      |        |                      |                   |                    |                 |                              |
|                           | <del>BH19- _____</del> | <del>SOIL</del> | <del>JULY 3/19</del> |   | <del>3</del>    | <del><input checked="" type="checkbox"/></del> |                      |        |                      |                   |                    |                 |                              |

|   |                                   |  |                                |   |  |
|---|-----------------------------------|--|--------------------------------|---|--|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 3 18:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trautman</u> | Date/Time:<br><u>5 July 19</u> | Pink Copy - Client<br>Yellow Copy - AC<br>White Copy - AG | Page <u>23</u> of <u>23</u><br><br>E 14828 |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                        | Samples Received By (Print Name and Sign):                       | Date/Time:                     |   |  |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                        | Samples Received By (Print Name and Sign):                       | Date/Time:                     |   |  |

9.2 °C

### RECEIVING BASICS - Shipping

Company/Consultant: IEG Consultants  
 Courier: Canadian North  Prepaid  Collect  
 Waybill# 578 - YEV - 10594284  
 Branch  EDM  GP  FN  FM  RD  VAN  LYD  FSJ  EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No   
 Custody Seal Intact: Yes  No  NA  
 TAT: <24hr  24-48hr  48-72hr  Reg  Other \_\_\_\_\_  
 Cooler Quantity: 7

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No   
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity ,  
 Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* ,  
 Chloroamines\*  
 Earliest Expiry: X  
 Hydrocarbons: Earliest Expiry X

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No   
 International Samples: Yes  No   
 Tape Sealed: Yes  No   
 Coolant Used: Icepack  Bagged Ice  Free Ice  Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar)  $9.4 + 9.1 + 9.6 = 9.4$  °C    2 (Bottle/Jar)  $9.4 + 8.9 + 9.1 = 9.1$  °C  
 3 (Bottle/Jar)  $9.3 + 9.1 + 9.8 = 9.7$  °C    4 (Bottle/Jar)  $9.4 + 9.6 + 9.8 = 9.6$  °C  
 5 (Bottle/Jar)  $8.8 + 8.4 + 9.1 = 8.8$  °C    6 (Bottle/Jar)  $9.4 + 9.1 + 8.9 = 9.1$  °C  
 7 (Bottle/Jar)  $8.4 + 8.6 + 8.9 = 8.6$  °C    8 (Bottle/Jar) \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ °C  
 9 (Bottle/Jar) \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ °C    10 (Bottle/Jar) \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E489087  
 Samples Damaged: Yes  No  If YES why?  
 No Bubble Wrap  Frozen  Courier   
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes  No   
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: BH19-009A & BH19-009B listed twice on COC - only 1 set of samples rec'd for each, therefore only logged once.  
sample 252 - NOT REC'D  
samples 085C, 090C, 098C, 099C, 101C - vials rec'd with either no MeOH or MeOH below 10mL

\*See SIR\*

\* Subcontracted Analysis (See CPM)



CANADIAN NORTH

518-YEV-10594286

Shipper's Name and Address  
Nom et adresse de l'expéditeur

IEG  
PO Box 1038  
Inuvik  
Northwest Territories, Canada  
X0E 0T0 403-829-3048  
Attn: Kim MacKenzie

Not negotiable / Non négociable

Air Waybill / Lettre de transport aérien  
Issued by / Émis par

Canadian North, 101 3731 52 Ave E,  
Edmonton International Airport, AB,  
Canada, T9E0V4

Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.  
Les exemplaires 1, 2-3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.

Consignee's Name and Address  
Nom et adresse du destinataire

AGAT Laboratories Ltd  
6310 Roper Road  
Edmonton  
Alberta, Canada  
T6B 3P9 780-395-2525  
Attn: Chantal Seeneey

It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREOF BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES. À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR.

Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur

Accounting Information / Renseignements comptables

KLO100CW

Agent's IATA Code / Code IATA de l'agent

Account Number / Numéro de compte

IEG Consultants Ltd.  
500 - 2618 Hopewell Place NE  
Calgary  
AB, Canada  
T1Y 7J7  
PO:

Airport of Departure (Address of First Carrier) and Requested Routing  
Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé

Inuvik

To / à : By first carrier / Par premier transport  
YEG CANADIAN NORTH

To / à by / par To / à by / par

Currency  
Monnaie

CHGS  
Code Frais

WT / Poids-Vol

Other/Autres

Declared Value for Carriage  
Valeur déclarée pour la transport

Declared value for Customs  
Valeur déclarée pour la douane

CDN

PX

PPD  
Payé  
X

COLL  
Du  
X

PPD  
Payé  
X

COLL  
De  
X

NDV

NCV

Airport of Destination / Aéroport de destination

Edmonton

Flight Date - For Carrier Use Only  
Vol. Date - Réservé au Transporteur

Amount of Insurance  
Montant de l'assurance

INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figure box marked "Amount of Insurance". ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance".

Handling Information / Renseignements pour le traitement de l'expédition

HFPU

SCI

| No. of Pieces<br>Nombre de colis<br>ROP | Gross Weight<br>Poids brut<br>kg | Chargeable<br>Weight<br>Poids de taxation<br>kg | Rate / Charge<br>Tarif / Montant | Interline | Total     | Commodity Item<br>No.<br>No. d'article de<br>la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|----------------------------------|---|----------------------------------|-----------|-----------|---|---|
| 7                                       | 138 K                            | 138   | 7.57                             |           | \$1044.66 | GAD   | Soil Samples 68cm x 61cm x 130cm  |

7 138 138

\$1044.66

|   |  |
|---|--|
| Weight Charge<br>Prepaid / Porte payé<br><b>\$1044.66</b>                       | Taxation au poids<br>Collect / Port dû     |
| Valuation Charge  | Taxation à la valeur                       |
| Tax<br><b>\$69.46</b>   | Taxe                                       |
| Total other Charges Due Agent   | Total des autres frais dûs à l'agent       |
| Total other Charges Due Carrier<br><b>\$344.54</b>                              | Total des autres frais dûs au              |
| Total Prepaid / Total port payé<br><b>\$1458.66</b>                             | Total collect / Total port dû              |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination | Charges at Destination / Frais à l'arrivée |

Other Charges / Autres frais

5T Nav Can Surcharge = 52.23, ACS Screening Fee = 20.70, 5T Fuel Surcharge = 271.61, GST/HST = 69.46

Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure où une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable.

Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent

04 Jul 2019

YEV

Executed on  
Fait le

(Date)  
(Date)

at  
à

(Place)  
(Lieu)

Signature of issuing Carrier or its Agent  
Signature du Transporteur émetteur ou de son Agent

Total Collect Charges / Total Dû

518-YEV-10594286

Copy 2 shipper / consignee

Track online at [CanadianNorth.com/Cargo/Track](http://CanadianNorth.com/Cargo/Track).



CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E490830

TRACE ORGANICS REVIEWED BY: Jarrod Roberts, Operations Manager

DATE REPORTED: Jul 16, 2019

PAGES (INCLUDING COVER): 9

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E490830

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-10

DATE REPORTED: 2019-07-14

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |       | EX19-001   | EX19-002   | EX19-003   | EX19-004   | EX19-005   | TP19-001   | TP19-002   | TP19-003   |
|--------------------------------|-------|---------------------|-------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |       | 2019-07-04 | 2019-07-04 | 2019-07-04 | 2019-07-04 | 2019-07-04 | 2019-07-04 | 2019-07-04 | 2019-07-04 |
|                                |       | G / S               | RDL   | 338194     | 338201     | 338202     | 338203     | 338204     | 338205     | 338206     | 338207     |
| Benzene                        | mg/kg | 0.005               | 0.083 | <0.005     | <0.005     | 0.007      | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | 0.95  | 0.05       | <0.05      | 0.30       | 0.09       | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | 0.29  | 0.01       | <0.01      | 0.11       | 0.04       | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | 1.36  | 0.08       | <0.05      | 0.54       | 0.14       | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | 20    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | 20    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 510   | 280        | 50         | 40         | <10        | <10        | <10        | <10        | 990        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 90    | 400        | 120        | 10         | <10        | 20         | 60         | 330        | 330        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 10    | 70         | <10        | <10        | <10        | <10        | 10         | 50         | 50         |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A   | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 17    | 15         | 9          | 13         | 13         | 4          | 8          | 5          | 5          |
| Surrogate                      | Unit  | Acceptable Limits   |       |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101   | 101        | 100        | 100        | 101        | 99         | 100        | 100        | 100        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 89    | 104        | 87         | 73         | 104        | 125        | 84         | 99         | 99         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 100   | 105        | 105        | 99         | 104        | 102        | 101        | 92         | 92         |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E490830

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-10

DATE REPORTED: 2019-07-14

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | TP19-004 | TP19-005 | TP19-006 | TP19-106 |
|--------------------------------|-------|---------------------|--------|----------|----------|----------|----------|
|                                |       | G / S               | RDL    | 338208   | 338209   | 338210   | 338211   |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005   | <0.005   | <0.005   | <0.005   |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05    | <0.05    | <0.05    | <0.05    |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | 0.02     | <0.01    | <0.01    | <0.01    |
| Xylenes                        | mg/kg | 0.05                | <0.05  | 0.06     | <0.05    | <0.05    | <0.05    |
| C6 - C10 (F1)                  | mg/kg | 10                  | 30     | <10      | <10      | <10      | <10      |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | 30     | <10      | <10      | <10      | <10      |
| C10 - C16 (F2)                 | mg/kg | 10                  | 1070   | 300      | 160      | 130      |          |
| C16 - C34 (F3)                 | mg/kg | 10                  | 280    | 1820     | 250      | 270      |          |
| C34 - C50 (F4)                 | mg/kg | 10                  | <10    | 460      | 140      | 160      |          |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A      | N/A      | N/A      |          |
| Moisture Content               | %     | 1                   | 6      | 5        | 5        | 4        |          |
| Surrogate                      | Unit  | Acceptable Limits   |        |          |          |          |          |
| Toluene-d8 (BTEX)              | %     | 50-150              | 100    | 98       | 99       | 99       |          |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 76     | 140      | 103      | 69       |          |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 110    | 101      | 99       | 100      |          |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E490830

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-10

DATE REPORTED: 2019-07-14

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

338194-338211

Results are based on the dry weight of the sample.  
 The C6-C10 (F1) fraction is calculated using toluene response factor.  
 The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
 Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
 Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
 Quality control data is available upon request.  
 Assistance in the interpretation of data is available upon request.  
 This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
 nC6 and nC10 response factors are within 30% of Toluene response factor.  
 nC10, nC16 and nC34 response factors are within 10% of their average.  
 C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
 Linearity is within 15%.  
 The chromatogram returned to baseline by the retention time of nC50.  
 Extraction and holding times were met for this sample.  
 C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
 Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E490830  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

### Trace Organics Analysis

| RPT Date:   |       | DUPLICATE |        |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|---|-------|-----------|--------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER   | Batch | Sample Id | Dup #1 | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|   |       |           |        |        |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |        |        |       |                |              |                    |       |          |                    |       |          |                   |       |  |
| Benzene   | 2085  | 348793    | <0.005 | <0.005 | NA    | < 0.005        | 107%         | 80%                | 120%  | 115%     | 80%                | 120%  | 104%     | 60%               | 140%  |  |
| Toluene   | 2085  | 348793    | <0.05  | <0.05  | NA    | < 0.05         | 107%         | 80%                | 120%  | 116%     | 80%                | 120%  | 103%     | 60%               | 140%  |  |
| Ethylbenzene  | 2085  | 348793    | <0.01  | <0.01  | NA    | < 0.01         | 102%         | 80%                | 120%  | 115%     | 80%                | 120%  | 101%     | 60%               | 140%  |  |
| Xylenes   | 2085  | 348793    | 0.08   | 0.09   | NA    | < 0.05         | 116%         | 80%                | 120%  | 111%     | 80%                | 120%  | 102%     | 60%               | 140%  |  |
| C6 - C10 (F1)   | 2085  | 348793    | <10    | <10    | NA    | < 10           | 113%         | 80%                | 120%  | 108%     | 80%                | 120%  | 84%      | 60%               | 140%  |  |
| C10 - C16 (F2)  | 1062  | 338194    | 510    | 700    | 31.0% | < 10           | 91%          | 80%                | 120%  | 97%      | 80%                | 120%  | 106%     | 60%               | 140%  |  |
| C16 - C34 (F3)  | 1062  | 338194    | 90     | 80     | 12.0% | < 10           | 97%          | 80%                | 120%  | 95%      | 80%                | 120%  | 104%     | 60%               | 140%  |  |
| C34 - C50 (F4)  | 1062  | 338194    | 10     | <10    | NA    | < 10           | 90%          | 80%                | 120%  | 81%      | 80%                | 120%  | 85%      | 60%               | 140%  |  |
| Moisture Content  | 1062  | 338194    | 17     | 17     | 0.0%  | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E490830  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |



### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E490830

Notes:  
19 JUL 10 9:12

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

**Report Information**

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

**Report Information**

1. Name: Stephanie Hannem  
Email: shannem@klohn.com  
2. Name: Kim Mackenzie  
Email: kmackenzie@klohn.com

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
Rush TAT  Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: IO2019-001

**Requirements (Check one)**

CCME  AB Tier 1  BC CSR

Agricultural  Industrial  AW  
 Residential/Park  Residential/Park  LW  
 Commercial  Commercial  DW  
 Drinking Water  Natural Area  
 FWAL

Other  
 D50 (Drilling)  SPIGEC

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION    | SAMPLE MATRIX | DATE/TIME SAMPLED         | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4                 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|--------------------------|---------------|---------------------------|---|-----------------|----------|-------------------------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|-----------------|------------------------------|
| 338194                    | <del>BH19</del> EX19-001 | SOIL          | JULY <del>3/19</del> 4/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 201                       | <del>BH19</del> EX19-002 | SOIL          | JULY <del>3/19</del> 4/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 203                       | <del>BH19</del> EX19-003 | SOIL          | JULY <del>3/19</del> 4/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 204                       | <del>BH19</del> EX19-004 | SOIL          | JULY <del>3/19</del> 4/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 205                       | <del>BH19</del> EX19-005 | SOIL          | JULY <del>3/19</del> 4/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 206                       | <del>BH19</del> TP19-001 | SOIL          | JULY <del>3/19</del> 6/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 207                       | <del>BH19</del> TP19-002 | SOIL          | JULY <del>3/19</del> 6/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 208                       | <del>BH19</del> TP19-003 | SOIL          | JULY <del>3/19</del> 6/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 209                       | <del>BH19</del> TP19-004 | SOIL          | JULY <del>3/19</del> 6/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 210                       | <del>BH19</del> TP19-005 | SOIL          | JULY <del>3/19</del> 6/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 211                       | <del>BH19</del> TP19-006 | SOIL          | JULY <del>3/19</del> 6/19 |   | 3               |          | <input checked="" type="checkbox"/> |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |

|   |                                      |  |                                       |                           |
|---|--------------------------------------|--|---------------------------------------|---------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 8/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>Jason Trasmonte</u> | Date/Time:<br><u>10 July 19 09:12</u> | Page <u>1</u> of <u>1</u> |
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 8/19 18:00</u> | Samples Received By (Print Name and Sign):<br><u>Jason Trasmonte</u> | Date/Time:<br><u>10 July 19 09:12</u> |                           |

### RECEIVING BASICS - Shipping

Company/Consultant: IEG Consultants  
 Courier: Canadian North Cargo Prepaid Collect  
 Waybill# 578 - XEV - 10598055  
 Branch  EDM GP FN FM RD VAN LYD FSJ EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No  
 Custody Seal Intact: Yes No  NA  
 TAT: <24hr 24-48hr 48-72hr  Reg Other \_\_\_\_\_  
 Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No  
 Inorganic Tests (Please Circle): Mibi, BOD, Nitrate/Nitrite, Turbidity, Microtox, Ortho PO4, Tedlar Bag, Residual Chlorine, Chlorophyll\*, Chloroamines\*  
 Earliest Expiry:                       
 Hydrocarbons: Earliest Expiry Terracore

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES NO  Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No  
 International Samples: Yes  No  
 Tape Sealed: Yes  No  
 Coolant Used: Icepack  Bagged Ice Free Ice Free Water None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 6.4 + 6.3 + 6.5 = 4.4 °C 2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E490830  
 Samples Damaged: Yes  No If YES why?  
 No Bubble Wrap Frozen Courier  
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes No  
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_

\* Subcontracted Analysis (See CPM)





CANADIAN NORTH

518-YEV-10598055

Shipper's Name and Address  
Nom et adresse de l'expéditeur

IEG - Camp Farewell  
PO Box 1038  
Inuvik  
Northwest Territories, Canada  
403-829-3098  
Attn: Nicole Wills

Consignee's Name and Address  
Nom et adresse du destinataire

AGAT Laboratories Ltd  
6310 Roper Road  
Edmonton  
Alberta, Canada  
T6B 3P9 780-395-2525  
Attn: Chantal Seeney

Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur

Accounting Information / Renseignements comptables  
**KLO100CW**

Agent's IATA Code / Code IATA de l'agent

Account Number / Numéro de compte

IEG Consultants Ltd.  
500 - 2618 Hopewell Place NE  
Calgary  
AB, Canada  
T1Y 7J7  
PO:

Airport of Departure (Address of First Carrier) and Requested Routing  
Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé

**Inuvik**

|                      |   |        |          |        |          |
|----------------------|---|--------|----------|--------|----------|
| To / à<br><b>YEG</b> | By first carrier / Par premier transport<br><b>CANADIAN NORTH</b> | To / à | by / par | To / à | by / par |
|----------------------|---|--------|----------|--------|----------|

Airport of Destination / Aéroport de destination  
**Edmonton**

Flight Date - For Carrier Use Only  
Vol. Date - Réservé au Transporteur

|                     |                    |                      |                     |  |  |
|---------------------|--------------------|----------------------|---------------------|--|--|
| Currency<br>Monnaie | CHGS<br>Code Frais | WT / Poids-Vol       | Other/Autres        | Declared Value for Carriage<br>Valeur déclarée pour la transport | Declared value for Customs<br>Valeur déclarée pour la douane |
| <b>CDN</b>          | <b>PX</b>          | PPD Payé<br><b>X</b> | COLL Du<br><b>X</b> | <b>NDV</b>   | <b>NCV</b>   |

Amount of Insurance  
Montant de l'assurance

INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures and mark "Amount of Insurance"  
ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance"

Handling Information / Renseignements pour le traitement de l'expédition  
**H4PU**

**SCI**

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut | kg | Chargeable Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total    | Commodity Item<br>No. d'article de la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|----------------------------|----|--|----------------------------------|-----------|----------|---|---|
| 1                                       | 16 K                       |    | 16                                     | 7.57                             |           | \$121.12 | GAD   | Soil Samples 60cm x 33cm x 35cm   |
| 1                                       | 16                         |    | 16                                     |                                  |           | \$121.12 |   |   |

|   |  |
|---|--|
| Weight Charge<br>Prepaid / Porte payé<br><b>\$121.12</b>                        | Taxation au poids<br>Collect / Port dû     |
| Valuation Charge  | Taxation à la valeur                       |
| Tax<br><b>\$8.31</b>  | Taxe                                       |
| Total other Charges Due Agent   | Total des autres frais dûs à l'agent       |
| Total other Charges Due Carrier<br><b>\$45.05</b>                               | Total des autres frais dûs au              |
| Total Prepaid / Total port payé<br><b>\$174.48</b>                              | Total collect / Total port dû              |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination | Charges at Destination / Frais à l'arrivée |

Other Charges / Autres frais

**5T Nav Can Surcharge = 6.06, ACS Screening Fee = 7.50, 5T Fuel Surcharge = 31.49, GST/HST = 8.31**

Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.  
L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure où une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable.

Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent

**09 Jul 2019** **YEV**

Executed on (Date) at (Place)  
Fait le (Date) à (Lieu)

Signature of Issuing Carrier or its Agent  
Signature du Transporteur émetteur ou de son Agent

Total Collect Charges / Total Du

518-YEV-10598055

Track online at [CanadianNorth.com/Cargo/Track](http://CanadianNorth.com/Cargo/Track).

Copy 2 shipper / consignee

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E492725

TRACE ORGANICS REVIEWED BY: Jarrod Roberts, Operations Manager

DATE REPORTED: Jul 18, 2019

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E492725

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-14

DATE REPORTED: 2019-07-17

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-006   | EX19-007   | EX19-008   | EX19-009   | EX19-010   | EX19-011   |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-09 | 2019-07-09 | 2019-07-09 | 2019-07-11 | 2019-07-11 | 2019-07-11 |
|                                |       | G / S               | RDL    | 350352     | 350365     | 350366     | 350367     | 350395     | 350396     |
| Benzene                        | mg/kg | 0.005               | <0.005 | 0.365      | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | 0.25   | 4.92       | <0.05      | <0.05      | 1.22       | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | 2.85       | <0.01      | <0.01      | 0.02       | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | 28.3       | <0.05      | <0.05      | 0.07       | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | 400        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | 360        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | <10    | 3050       | 350        | 50         | 50         | 10         | 10         |
| C16 - C34 (F3)                 | mg/kg | 10                  | 180    | 370        | 220        | 140        | 220        | 150        | 150        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 40     | 40         | 40         | 20         | 60         | 50         | 50         |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 49     | 64         | 7          | 18         | 11         | 11         | 11         |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101    | 101        | 101        | 102        | 101        | 101        | 101        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 97     | 112        | 79         | 88         | 73         | 75         | 75         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 107    | 112        | 103        | 106        | 107        | 105        | 105        |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E492725

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-14

DATE REPORTED: 2019-07-17

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

350352-350396

Results are based on the dry weight of the sample.  
 The C6-C10 (F1) fraction is calculated using toluene response factor.  
 The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
 Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
 Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
 Quality control data is available upon request.  
 Assistance in the interpretation of data is available upon request.  
 This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
 nC6 and nC10 response factors are within 30% of Toluene response factor.  
 nC10, nC16 and nC34 response factors are within 10% of their average.  
 C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
 Linearity is within 15%.  
 The chromatogram returned to baseline by the retention time of nC50.  
 Extraction and holding times were met for this sample.  
 C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
 Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E492725  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

### Trace Organics Analysis

| RPT Date:   |       |           | DUPLICATE |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|---|-------|-----------|-----------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER   | Batch | Sample Id | Dup #1    | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|   |       |           |           |        |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |           |        |       |                |              |                    |       |          |                    |       |          |                   |       |  |
| Benzene   | 1947  | 340725    | <0.005    | <0.005 | NA    | < 0.005        | 90%          | 80%                | 120%  | 100%     | 80%                | 120%  | 105%     | 60%               | 140%  |  |
| Toluene   | 1947  | 340725    | <0.05     | <0.05  | NA    | < 0.05         | 92%          | 80%                | 120%  | 103%     | 80%                | 120%  | 107%     | 60%               | 140%  |  |
| Ethylbenzene  | 1947  | 340725    | <0.01     | <0.01  | NA    | < 0.01         | 93%          | 80%                | 120%  | 98%      | 80%                | 120%  | 100%     | 60%               | 140%  |  |
| Xylenes   | 1947  | 340725    | <0.05     | <0.05  | NA    | < 0.05         | 96%          | 80%                | 120%  | 87%      | 80%                | 120%  | 89%      | 60%               | 140%  |  |
| C6 - C10 (F1)   | 1947  | 340725    | <10       | <10    | NA    | < 10           | 100%         | 80%                | 120%  | 91%      | 80%                | 120%  | 101%     | 60%               | 140%  |  |
| C10 - C16 (F2)  | 1504  | 350365    | 3050      | 3170   | 3.9%  | < 10           | 117%         | 80%                | 120%  | 103%     | 80%                | 120%  | 100%     | 60%               | 140%  |  |
| C16 - C34 (F3)  | 1504  | 350365    | 370       | 270    | 31.3% | < 10           | 120%         | 80%                | 120%  | 100%     | 80%                | 120%  | 95%      | 60%               | 140%  |  |
| C34 - C50 (F4)  | 1504  | 350365    | 40        | 20     | NA    | < 10           | 115%         | 80%                | 120%  | 81%      | 80%                | 120%  | 79%      | 60%               | 140%  |  |
| Moisture Content  | 1504  | 350365    | 64        | 63     | 1.6%  | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E492725  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webeath.agatlabs.com

### Laboratory Use Only

Arrival Temperature: 5.2°C  
AGAT Job Number: 19E492725

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanow  
Address: 500-2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-278-4292 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012A11

### Report Information

1. Name: Kim MacKenzie  
Email: kmacKenzie@klohn.com  
2. Name: Stephanie Hannem  
Email: shannem@klohn.com

### Report Format

Single Sample per page  
Multiple Samples per page   
Excel Format Included

Notes:  
19 JUL 14 9:54

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 working days  
Rush TAT Less than 24 hours  
24 to 48 hours  
48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To Same Yes No

Company: AS ABOVE  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: 102019-001

### Requirements (Check one)

| CCME             | AB Tier 1        | BC CSR |
|------------------|------------------|--------|
| Agricultural     | Agricultural     | AW     |
| Industrial       | Industrial       | IW     |
| Residential/Park | Residential/Park | LW     |
| Commercial       | Commercial       | DW     |
| Drinking Water   | Natural Area     |        |
| FWAL             |                  |        |
| <b>Other</b>     |                  |        |
| D50 (Drilling)   | SPIGEC           |        |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | ANALYSIS TYPES |                     |        |                      |                   |                    |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------------|---------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|-----------------|------------------------------|--|
|                           |                       |               |                   |   |                 | Microtox       | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |                 |                              |  |
| 350352                    | EX19-006              | SOIL          | JULY 9/19         |   | 4               | X              |                     |        |                      |                   |                    |  |  |  |  |                 |                              |  |
| 365                       | EX19-007              | ↓             | ↓                 |   | 4               | X              |                     |        |                      |                   |                    |  |  |  |  |                 |                              |  |
| 366                       | EX19-008              | ↓             | ↓                 |   | 4               | X              |                     |        |                      |                   |                    |  |  |  |  |                 |                              |  |
| 367                       | EX19-009              | ↓             | JULY 11/19        |   | 3               | X              |                     |        |                      |                   |                    |  |  |  |  |                 |                              |  |
| 395                       | EX19-010              | ↓             | ↓                 |   | 3               | X              |                     |        |                      |                   |                    |  |  |  |  |                 |                              |  |
| 396                       | EX19-011              | ↓             | ↓                 |   | 3               | X              |                     |        |                      |                   |                    |  |  |  |  |                 |                              |  |

|  |                               |   |                                 |   |                           |
|--|-------------------------------|---|---------------------------------|---|---------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Kim MacKenzie</u> | Date/Time:<br><u>11:45 am</u> | Samples Received By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 12/19</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy - AGAT | Page <u>1</u> of <u>1</u> |
| Samples Relinquished By (Print Name and Sign):                         | Date/Time:                    | Samples Received By (Print Name and Sign):                            | Date/Time:<br><u>7/19/2019</u>  |   |                           |
| Samples Relinquished By (Print Name and Sign):                         | Date/Time:                    | Samples Received By (Print Name and Sign):                            | Date/Time:                      |   |                           |



### RECEIVING BASICS - Shipping

Company/Consultant: IGG Consultants  
 Courier: Canadian North Prepaid Collect  
 Waybill# 518-TEV-10601905  
 Branch  EDM  GP  FN  FM  RD  VAN  LYD  FSJ  EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No  
 Custody Seal Intact: Yes No  NA  
 TAT: <24hr 24-48hr 48-72hr  Reg Other \_\_\_\_\_  
 Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No  
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\*  
 Earliest Expiry: \_\_\_\_\_  
 Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No  
 International Samples: Yes  No  
 Tape Sealed: Yes  No  
 Coolant Used: Icepack  Bagged Ice  Free Ice  Free Water  None

### Temperature (Bottles/Jars only) N/A if only Soil Bags Received

#### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 6.4+5.6+1 = 5.2 °C 2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E492725  
 Samples Damaged: Yes  No If YES why?  
 No Bubble Wrap Frozen Courier  
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes No  
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* Subcontracted Analysis (See CPM)





CANADIAN NORTH

518-YEV-10601905

Shipper's Name and Address  
Nom et adresse de l'expéditeur

IEG - Camp Farewell  
PO Box 1038  
Inuvik  
Northwest Territories, Canada  
403-829-3098  
Attn: Nicole Wills

Not negotiable / Non négociable

Air Waybill / Lettre de transport aérien

Issued by / Émise par

Canadian North, 101 3731 52 Ave E,  
Edmonton International Airport, AB,  
Canada, T9E0V4

Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.  
Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.

Consignee's Name and Address  
Nom et adresse du destinataire

AGAT Laboratories Ltd  
6310 Roper Road  
Edmonton  
Alberta, Canada  
T6B 3P9 780-395-2525  
Attn: Chantal Seeney

It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR.

Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur

Accounting Information / Renseignements comptables

KLO100CW

Agent's IATA Code / Code IATA de l'agent

Account Number / Numéro de compte

IEG Consultants Ltd.  
500 - 2618 Hopewell Place NE  
Calgary  
AB, Canada  
T1Y 7J7  
PO:

Airport of Departure (Address of First Carrier) and Requested Routing  
Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé

Inuvik

|   |   |   |          |        |          |   |                                 |   |   |  |  |  |
|---|---|---|----------|--------|----------|---|---------------------------------|---|---|--|--|--|
| To / à<br><b>YEG</b>  | By first carrier / Par premier transport<br><b>CANADIAN NORTH</b> | To / à  | by / par | To / à | by / par | Currency<br>Monnaie<br><b>CDN</b>             | CHGS<br>Code Frais<br><b>PX</b> | WT / Poids-Vol<br>PPD Payé <input checked="" type="checkbox"/><br>COLL Du   | Other/Autres<br>PPD Payé <input checked="" type="checkbox"/><br>COLL Du | Declared Value for Carriage<br>Valeur déclarée pour la transport<br><b>NDV</b> | Declared value for Customs<br>Valeur déclarée pour la douane<br><b>NCV</b> |  |
| Airport of Destination / Aéroport de destination<br><b>Edmonton</b> |   | Flight Date - For Carrier Use Only<br>Vol. Date - Réserve au Transporteur |          |        |          | Amount of Insurance<br>Montant de l'assurance |                                 | INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance"<br>ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance" |   |  |  |  |

Handling Information / Renseignements pour le traitement de l'expédition  
HFPU

SCI

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut | kg<br>lb | Chargeable<br>Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total   | Commodity Item<br>No.<br>No. d'article de la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|----------------------------|----------|---|----------------------------------|-----------|---------|--|---|
| 1                                       | 11                         | K        | 12  | 7.57                             |           | \$90.84 | GAD  | Soil Samples 60cm x 33cm x 35cm   |

1

11

12

\$90.84

|   |  |   |
|---|--|---|
| Weight Charge<br>Prepaid / Porte payé<br><b>\$90.84</b>                         | Taxation au poids<br>Collect / Port dû     | Other Charges / Autres frais<br><b>5T Nav Can Surcharge = 4.54, ACS Screening Fee = 0.00, 5T Fuel Surcharge = 23.62, GST/HST = 5.95</b>   |
| Valuation Charge  | Taxation à la valeur                       | Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.<br>L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure où une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable. |
| Tax<br><b>\$5.95</b>  | Taxe                                       |   |
| Total other Charges Due Agent   | Total des autres frais dûs à l'agent       |   |
| Total other Charges Due Carrier<br><b>\$28.16</b>                               | Total des autres frais dûs au              | Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent   |
| Total Prepaid / Total port payé<br><b>\$124.95</b>                              | Total collect / Total port dû              | Executed on<br>Fait le  |
|   |  | 13 Jul 2019<br>(Date)   |
|   |  | YEV<br>(Place)  |
|   |  | Signature of Issuing Carrier or its Agent<br>Signature du Transporteur émetteur ou de son Agent   |
| For Carrier's User only at Destination<br>Réserve au transporteur à destination | Charges at Destination / Frais à l'arrivée | Total Collect Charges / Total Du  |

518-YEV-10601905

Copy 2 shipper / consignee

Track online at [CanadianNorth.com/Cargo/Track](http://CanadianNorth.com/Cargo/Track).

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ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E495262

TRACE ORGANICS REVIEWED BY: Jarrod Roberts, Operations Manager

DATE REPORTED: Jul 23, 2019

PAGES (INCLUDING COVER): 19

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



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AGAT WORK ORDER: 19E495262

PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-17

DATE REPORTED: 2019-07-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            |            |            |            |            |            |            |            |            |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | G / S               |            | TP19-007A  | TP19-007B  | TP19-008A  | TP19-008B  | TP19-009A  | TP19-010A  | TP19-009B  | TP19-010B  |
|                                |       | RDL                 | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 |
|                                |       |                     | 365983     | 365994     | 365995     | 365996     | 365997     | 365998     | 365999     | 366000     |            |
| Benzene                        | mg/kg | 0.005               | 0.005      | <0.005     | 0.009      | 0.010      | <0.005     | 0.010      | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | 0.06       | 0.05       | 0.10       | 0.12       | <0.05      | 0.11       | 0.05       | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01      | <0.01      | 0.02       | 0.03       | <0.01      | 0.01       | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | <0.05      | <0.05      | 0.27       | 0.24       | <0.05      | <0.05      | 0.10       | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 90         | 60         | 90         | 200        | 160        | 90         | 170        | 130        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 300        | 380        | 350        | 470        | 360        | 320        | 390        | 330        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 60         | 80         | 80         | 110        | 70         | 70         | 80         | 60         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 9          | 14         | 11         | 12         | 13         | 8          | 12         | 9          |            |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 105        | 105        | 106        | 106        | 106        | 106        | 106        | 105        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 73         | 79         | 75         | 78         | 78         | 77         | 75         | 74         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 101        | 105        | 102        | 103        | 104        | 102        | 107        | 106        |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-17

DATE REPORTED: 2019-07-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |       | TP19-011A  | TP19-011B  | TP19-012A  | TP19-012B  | TP19-013A  | TP19-013B  | TP19-014A  | TP19-014B  |
|--------------------------------|-------|---------------------|-------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |       | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 |
|                                |       | G / S               | RDL   | 366001     | 366002     | 366003     | 366004     | 366005     | 366006     | 366007     | 366008     |
| Benzene                        | mg/kg | 0.005               | 0.007 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | 0.06  | 0.07       | 0.12       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.05       |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01 | <0.01      | 0.02       | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | 0.08  | <0.05      | 0.08       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10   | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10   | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 150   | 190        | 120        | 110        | 140        | 120        | 120        | 120        | 100        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 380   | 380        | 320        | 300        | 340        | 340        | 340        | 350        | 340        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 80    | 80         | 70         | 70         | 80         | 90         | 100        | 100        | 100        |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A   | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 12    | 13         | 11         | 12         | 10         | 11         | 12         | 12         | 11         |
| Surrogate                      | Unit  | Acceptable Limits   |       |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 106   | 106        | 106        | 106        | 105        | 106        | 106        | 107        | 107        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 76    | 73         | 76         | 77         | 72         | 75         | 78         | 78         | 71         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 106   | 107        | 104        | 103        | 106        | 102        | 102        | 102        | 103        |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-17

DATE REPORTED: 2019-07-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | TP19-015A  | TP19-015B  | TP19-016A  | TP19-017A  | TP19-016B  | TP19-017B  | TP19-018A  | TP19-019A  |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 | 2019-07-13 |
|                                |       | G / S               | RDL    | 366009     | 366010     | 366011     | 366012     | 366013     | 366014     | 366015     | 366016     |            |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.13       | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 80     | 100        | 150        | 150        | 100        | 140        | 250        | 190        | 190        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 340    | 340        | 390        | 370        | 240        | 270        | 380        | 300        | 300        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 110    | 110        | 100        | 100        | 40         | 40         | 60         | 50         | 50         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 13     | 14         | 13         | 13         | 14         | 13         | 16         | 12         | 12         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 106    | 106        | 105        | 105        | 99         | 100        | 98         | 98         | 98         |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 75     | 73         | 75         | 72         | 66         | 63         | 66         | 65         | 65         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 104    | 107        | 105        | 106        | 98         | 94         | 97         | 97         | 97         |            |

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PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-17

DATE REPORTED: 2019-07-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            |            |            |            |            |            |            |            |          |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|----------|
|                                |       | G / S               |            | TP19-019B  | TP19-020A  | TP19-020B  | EX19-012   | EX19-013   | EX19-014A  | EX19-015   | EX19-016 |
|                                |       | RDL                 | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil     |
| DATE SAMPLED:                  |       | 2019-07-13          | 2019-07-13 | 2019-07-13 | 2019-07-14 | 2019-07-14 | 2019-07-14 | 2019-07-14 | 2019-07-14 | 2019-07-14 |          |
| Benzene                        | mg/kg | 0.005               | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |          |
| Toluene                        | mg/kg | 0.05                | <0.05      | 0.06       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |          |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01      | <0.01      | 0.01       | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |          |
| Xylenes                        | mg/kg | 0.05                | <0.05      | 0.06       | 0.12       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |          |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |          |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |          |
| C10 - C16 (F2)                 | mg/kg | 10                  | 210        | 70         | 70         | 30         | <10        | <10        | <10        | <10        |          |
| C16 - C34 (F3)                 | mg/kg | 10                  | 330        | 220        | 280        | 140        | <10        | <10        | <10        | <10        |          |
| C34 - C50 (F4)                 | mg/kg | 10                  | 60         | 60         | 90         | 40         | <10        | 10         | 10         | 10         |          |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |          |
| Moisture Content               | %     | 1                   | 14         | 12         | 11         | 9          | 4          | 5          | 6          | 5          |          |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |            |          |
| Toluene-d8 (BTEX)              | %     | 50-150              | 99         | 99         | 98         | 99         | 99         | 99         | 99         | 99         |          |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 68         | 68         | 65         | 71         | 69         | 71         | 72         | 70         |          |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 92         | 88         | 91         | 103        | 113        | 95         | 98         | 95         |          |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-17

DATE REPORTED: 2019-07-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-017   | EX19-014B  | EX19-018   | EX19-019   | EX19-020   | EX19-021   | EX19-022   | EX19-023   |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-14 | 2019-07-14 | 2019-07-14 | 2019-07-14 | 2019-07-14 | 2019-07-14 | 2019-07-14 | 2019-07-14 |
|                                |       | G / S               | RDL    | 366025     | 366026     | 366027     | 366028     | 366029     | 366030     | 366031     | 366032     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | 0.10       | <0.05      | <0.05      | 0.11       |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | 0.01       | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | 160        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | 160        |
| C10 - C16 (F2)                 | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | 110        | 8900       |
| C16 - C34 (F3)                 | mg/kg | 10                  | <10    | <10        | <10        | <10        | 40         | 280        | 10         | 50         | 1580       |
| C34 - C50 (F4)                 | mg/kg | 10                  | 10     | 10         | 10         | 10         | 30         | 100        | 30         | 20         | 130        |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 4      | 4          | 4          | 4          | 6          | 45         | 3          | 4          | 56         |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 99     | 99         | 99         | 99         | 99         | 99         | 99         | 99         | 101        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 67     | 68         | 67         | 65         | 84         | 72         | 69         | 98         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 97     | 102        | 97         | 106        | 95         | 107        | 113        | 116        |            |

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PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-17

DATE REPORTED: 2019-07-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-024   | EX19-025   | EX19-026   | EX19-027   | EX19-028   | EX19-029   | EX19-030   | EX19-031   |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-14 | 2019-07-14 | 2019-07-14 | 2019-07-14 | 2019-07-15 | 2019-07-15 | 2019-07-15 | 2019-07-15 |
|                                |       | G / S               | RDL    | 366033     | 366034     | 366035     | 366036     | 366037     | 366038     | 366039     | 366040     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 750    | <10        | 30         | 40         | <10        | <10        | <10        | <10        | <10        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 1260   | 60         | 280        | 250        | <10        | 40         | 20         | <10        | <10        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 200    | <10        | 60         | 60         | <10        | 20         | <10        | <10        | <10        |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 5      | 5          | 6          | 5          | 6          | 5          | 11         | 3          |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 106    | 106        | 105        | 106        | 106        | 106        | 106        | 106        | 106        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 72     | 72         | 73         | 78         | 78         | 66         | 80         | 81         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 92     | 97         | 88         | 91         | 91         | 90         | 100        | 93         |            |

Certified By:





## Certificate of Analysis

AGAT WORK ORDER: 19E495262

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-17

DATE REPORTED: 2019-07-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-032   | TP19-021A  | TP19-021B  | TP19-022A  | TP19-022B  | TP19-023A  | TP19-023B  | TP-016C    |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-15 | 2019-07-15 | 2019-07-15 | 2019-07-15 | 2019-07-15 | 2019-07-15 | 2019-07-15 | 2019-07-13 | 2019-07-13 |
|                                |       | G / S               | RDL    | 366041     | 366042     | 366043     | 366044     | 366045     | 366046     | 366047     | 366048     |            |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | <10    | 60         | 40         | <10        | <10        | <10        | <10        | <10        | 180        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 10     | 880        | 150        | 50         | 20         | 20         | 20         | 80         | 450        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | <10    | 300        | 20         | 20         | 10         | 10         | 10         | 30         | 120        |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 4      | 5          | 5          | 5          | 4          | 3          | 4          | 3          | 12         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 106    | 106        | 106        | 106        | 105        | 106        | 106        | 106        | 106        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 82     | 75         | 69         | 71         | 68         | 72         | 68         | 68         | 66         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 102    | 103        | 122        | 90         | 92         | 99         | 93         | 93         | 101        |            |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E495262

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-17

DATE REPORTED: 2019-07-22

SAMPLE DESCRIPTION: TP-017D  
SAMPLE TYPE: Soil  
DATE SAMPLED: 2019-07-13  
G / S RDL 366049

| Parameter                      | Unit  | G / S             | RDL    | 366049 |
|--------------------------------|-------|-------------------|--------|--------|
| Benzene                        | mg/kg |                   | 0.005  | <0.005 |
| Toluene                        | mg/kg |                   | 0.05   | <0.05  |
| Ethylbenzene                   | mg/kg |                   | 0.01   | <0.01  |
| Xylenes                        | mg/kg |                   | 0.05   | <0.05  |
| C6 - C10 (F1)                  | mg/kg |                   | 10     | <10    |
| C6 - C10 (F1 minus BTEX)       | mg/kg |                   | 10     | <10    |
| C10 - C16 (F2)                 | mg/kg |                   | 10     | 200    |
| C16 - C34 (F3)                 | mg/kg |                   | 10     | 450    |
| C34 - C50 (F4)                 | mg/kg |                   | 10     | 120    |
| Gravimetric Heavy Hydrocarbons | mg/kg |                   | 1000   | N/A    |
| Moisture Content               | %     |                   | 1      | 12     |
| Surrogate                      | Unit  | Acceptable Limits |        |        |
| Toluene-d8 (BTEX)              | %     |                   | 50-150 | 105    |
| Ethylbenzene-d10 (BTEX)        | %     |                   | 50-150 | 65     |
| o-Terphenyl (F2-F4)            | %     |                   | 50-150 | 117    |

Certified By:

# Certificate of Analysis

AGAT WORK ORDER: 19E495262

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

DATE RECEIVED: 2019-07-17

DATE REPORTED: 2019-07-22

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

365983-366049 Results are based on the dry weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
The chromatogram returned to baseline by the retention time of nC50.  
Extraction and holding times were met for this sample.  
C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:



## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E495262

PROJECT: A04012A11

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Trace Organics Analysis

| RPT Date:   |       |           | DUPLICATE |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|---|-------|-----------|-----------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER   | Batch | Sample Id | Dup #1    | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|   |       |           |           |        |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |           |        |       |                |              |                    |       |          |                    |       |          |                   |       |  |
| Benzene   | 2082  | 365983    | 0.005     | <0.005 | NA    | < 0.005        | 93%          | 80%                | 120%  | 81%      | 80%                | 120%  | 83%      | 60%               | 140%  |  |
| Toluene   | 2082  | 365983    | 0.06      | 0.06   | NA    | < 0.05         | 101%         | 80%                | 120%  | 87%      | 80%                | 120%  | 87%      | 60%               | 140%  |  |
| Ethylbenzene  | 2082  | 365983    | <0.01     | <0.01  | NA    | < 0.01         | 109%         | 80%                | 120%  | 94%      | 80%                | 120%  | 98%      | 60%               | 140%  |  |
| Xylenes   | 2082  | 365983    | <0.05     | <0.05  | NA    | < 0.05         | 117%         | 80%                | 120%  | 87%      | 80%                | 120%  | 92%      | 60%               | 140%  |  |
| C6 - C10 (F1)   | 2082  | 365983    | <10       | <10    | NA    | < 10           | 104%         | 80%                | 120%  | 84%      | 80%                | 120%  | 66%      | 60%               | 140%  |  |
| C10 - C16 (F2)  | 1508  | 365983    | 90        | 110    | 20.0% | < 10           | 90%          | 80%                | 120%  | 96%      | 80%                | 120%  | 93%      | 60%               | 140%  |  |
| C16 - C34 (F3)  | 1508  | 365983    | 300       | 320    | 6.0%  | < 10           | 93%          | 80%                | 120%  | 94%      | 80%                | 120%  | 91%      | 60%               | 140%  |  |
| C34 - C50 (F4)  | 1508  | 365983    | 60        | 60     | 0.0%  | < 10           | 95%          | 80%                | 120%  | 82%      | 80%                | 120%  | 72%      | 60%               | 140%  |  |
| Moisture Content  | 1508  | 365983    | 9         | 10     | 10.5% | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
 The sample spikes and dups are not from the same sample ID.

|   |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|---|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
| Benzene   | 2092 | 366013 | <0.005 | <0.005 | NA    | < 0.005 | 99%  | 80% | 120% | 93%  | 80% | 120% | 97%  | 60% | 140% |
| Toluene   | 2092 | 366013 | <0.05  | <0.05  | NA    | < 0.05  | 95%  | 80% | 120% | 88%  | 80% | 120% | 89%  | 60% | 140% |
| Ethylbenzene  | 2092 | 366013 | <0.01  | <0.01  | NA    | < 0.01  | 84%  | 80% | 120% | 84%  | 80% | 120% | 76%  | 60% | 140% |
| Xylenes   | 2092 | 366013 | <0.05  | <0.05  | NA    | < 0.05  | 104% | 80% | 120% | 83%  | 80% | 120% | 74%  | 60% | 140% |
| C6 - C10 (F1)   | 2092 | 366013 | <10    | <10    | NA    | < 10    | 97%  | 80% | 120% | 100% | 80% | 120% | 69%  | 60% | 140% |
| C10 - C16 (F2)  | 1203 | 366013 | 100    | 80     | 22.2% | < 10    | 108% | 80% | 120% | 104% | 80% | 120% | 104% | 60% | 140% |
| C16 - C34 (F3)  | 1203 | 366013 | 240    | 250    | 4.1%  | < 10    | 113% | 80% | 120% | 102% | 80% | 120% | 103% | 60% | 140% |
| C34 - C50 (F4)  | 1203 | 366013 | 40     | 50     | NA    | < 10    | 108% | 80% | 120% | 103% | 80% | 120% | 108% | 60% | 140% |
| Moisture Content  | 1203 | 366013 | 14     | 16     | 13.3% | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
 The sample spikes and dups are not from the same sample ID.

|   |      |        |      |      |      |      |      |     |      |      |     |      |      |     |      |
|---|------|--------|------|------|------|------|------|-----|------|------|-----|------|------|-----|------|
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |      |        |      |      |      |      |      |     |      |      |     |      |      |     |      |
| C10 - C16 (F2)  | 1204 | 366034 | < 10 | < 10 | NA   | < 10 | 115% | 80% | 120% | 105% | 80% | 120% | 106% | 60% | 140% |
| C16 - C34 (F3)  | 1204 | 366034 | 60   | 60   | 0.0% | < 10 | 120% | 80% | 120% | 103% | 80% | 120% | 106% | 60% | 140% |
| C34 - C50 (F4)  | 1204 | 366034 | < 10 | < 10 | NA   | < 10 | 115% | 80% | 120% | 106% | 80% | 120% | 108% | 60% | 140% |
| Moisture Content  | 1204 | 366034 | 5    | 5    | 0.0% | < 1  |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
 The sample spikes and dups are not from the same sample ID.

Certified By:



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E495262

PROJECT: A04012A11

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |



### Laboratory Use Only

Arrival Temperature: 3.7°C  
AGAT Job Number: 19E495262

Notes:

19 JUL 17 9:05

## Chain of Custody Record

P: 780.395.2525 · F: 780.462.2490

### Report Information

Company: IEG Consultants  
Contact: Kyle Schepanew  
Address: 500-2618 Hopewell Place  
Calgary, AB T1Y 7J7  
Phone: 403-648-4272 Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A00012A11

### Report Information

1. Name: Kim MacKenzie  
Email: kmackenzie@klohn.com  
2. Name: Stephanie Hannem  
Email: shannem@klohn.com

### Report Format

Single Sample per page  
 Multiple Samples per page  
Excel Format Included

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 working days  
Rush TAT Less than 24 hours  
24 to 48 hours  
48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION. CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To Same Yes / No

Company: Same As Above  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/A/E#: 102019-001

### Requirements (Check one)

|                  |                  |               |
|------------------|------------------|---------------|
| <b>CCME</b>      | <b>AB Tier 1</b> | <b>BC CSR</b> |
| Agricultural     | Agricultural     | AW            |
| Industrial       | Industrial       | IW            |
| Residential/Park | Residential/Park | LW            |
| Commercial       | Commercial       | DW            |
| Drinking Water   | Natural Area     |               |
| FWAL             |                  |               |
| <b>Other</b>     |                  |               |
| D50 (Drilling)   | SPIGEC           |               |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability |  |  |  |  |  |  |  | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|---------------------|--------|----------------------|-------------------|--------------------|--|--|--|--|--|--|--|-----------------|------------------------------|
| 365983                    | TP19-007A             | SOIL          | JULY 13/19        |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 994                       | TP19-007B             |               |                   |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 995                       | TP19-008A             |               |                   |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 996                       | TP19-008B             |               |                   |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 997                       | TP19-009A             |               |                   |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 998                       | TP19-010A             |               |                   |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 999                       | TP19-009B             |               |                   |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 6000                      | TP19-010B             |               |                   |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 601                       | TP19-011A             |               |                   |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 602                       | TP19-011B             |               |                   |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |
| 603                       | TP19-012A             |               |                   |   | 3               |          | X                   |        |                      |                   |                    |  |  |  |  |  |  |  |                 |                              |

|  |           |   |                                    |   |                           |
|--|-----------|---|------------------------------------|---|---------------------------|
| Samples Relinquished By (Print Name and Sign): | Date/Time | Samples Received By (Print Name and Sign): <u>J. Trasmack</u> | Date/Time: <u>17 July 19 09:05</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy - AGAT | Page <u>1</u> of <u>5</u> |
| Samples Relinquished By (Print Name and Sign): | Date/Time | Samples Received By (Print Name and Sign):                    | Date/Time                          |   |                           |
| Samples Relinquished By (Print Name and Sign): | Date/Time | Samples Received By (Print Name and Sign):                    | Date/Time                          |   |                           |

E 14958



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E495262

Notes:  
  
19 JUL 17 9:05

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

**Report Information**

Company: IEG Consultants  
 Contact: \_\_\_\_\_  
 Address: See P.1  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: A04012A11

**Report Information**

1. Name: \_\_\_\_\_  
 Email: See P.1  
 2. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
 Rush TAT Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To** Same  Yes  No

Company: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: 102019-001

**Requirements (Check one)**

| CCME             | AB Tier 1        | BC CSR |
|------------------|------------------|--------|
| Agricultural     | Agricultural     | AW     |
| Industrial       | Industrial       | IW     |
| Residential/Park | Residential/Park | LW     |
| Commercial       | Commercial       | DW     |
| Drinking Water   | Natural Area     |        |
| FWAL             |                  |        |
| <b>Other</b>     |                  |        |
| D50 (Drilling)   | SPIGEC           |        |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | RESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|---------------------|--------|----------------------|-------------------|--------------------|----------------|------------------------------|
| 004                       | TP19-012B             | SOIL          | JULY 13/19        |   | 3               | X        |                     |        |                      |                   |                    |                |                              |
| 005                       | TP19-0123A            |               |                   |   | 3               | X        |                     |        |                      |                   |                    |                |                              |
| 006                       | TP19-013B             |               |                   |   | 3               | X        |                     |        |                      |                   |                    |                |                              |
| 007                       | TP19-014A             |               |                   |   | 3               | X        |                     |        |                      |                   |                    |                |                              |
| 008                       | TP19-014B             |               |                   |   | 3               | X        |                     |        |                      |                   |                    |                |                              |
| 009                       | TP19-015A             |               |                   |   | 3               | X        |                     |        |                      |                   |                    |                |                              |
| 010                       | TP19-015B             |               |                   |   | 3               | X        |                     |        |                      |                   |                    |                |                              |
| 011                       | TP19-016A             |               |                   |   | 3               | X        |                     |        |                      |                   |                    |                |                              |
| 012                       | TP19-017A             |               |                   |   | 3               | X        |                     |        |                      |                   |                    |                |                              |
| 013                       | TP19-016B             |               |                   |   | 3               | X        |                     |        |                      |                   |                    |                |                              |
| 014                       | TP19-016B 7B          |               |                   |   | 3               | X        |                     |        |                      |                   |                    |                |                              |

|   |                     |  |                                       |                    |
|---|---------------------|--|---------------------------------------|--------------------|
| Samples Relinquished By (Print Name and Sign):<br>_____ | Date/Time:<br>_____ | Samples Received By (Print Name and Sign):<br><u>J. Trautman</u> | Date/Time:<br><u>17 July 19 09:05</u> | Pink Copy - Client |
| Samples Relinquished By (Print Name and Sign):<br>_____ | Date/Time:<br>_____ | Samples Received By (Print Name and Sign):<br>_____              | Date/Time:<br>_____                   | Yellow Copy - AGAT |
| Samples Relinquished By (Print Name and Sign):<br>_____ | Date/Time:<br>_____ | Samples Received By (Print Name and Sign):<br>_____              | Date/Time:<br>_____                   | White Copy - AGAT  |

Page 2 of 5

E 14959

Document #: DW-175-1504-001



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E495262

Notes:  
19 JUL 17 9:05

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

### Report Information

Company: IEG Consultants  
Contact: \_\_\_\_\_  
Address: see P.1  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: AD4012A11

### Report Information

1. Name: \_\_\_\_\_  
Email: see P.1  
2. Name: \_\_\_\_\_  
Email: \_\_\_\_\_

### Report Format

Single Sample per page  
 Multiple Samples per page  
Excel Format Included

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 working days  
Rush TAT Less than 24 hours  
24 to 48 hours  
48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

Invoice To \_\_\_\_\_ Same  Yes / No

Company: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: 102019-001

### Requirements (Check one)

|                  |                  |               |
|------------------|------------------|---------------|
| <b>CCME</b>      | <b>AB Tier 1</b> | <b>BC CSR</b> |
| Agricultural     | Agricultural     | AW            |
| Industrial       | Industrial       | IW            |
| Residential/Park | Residential/Park | LW            |
| Commercial       | Commercial       | DW            |
| Drinking Water   | Natural Area     |               |
| FWAL             |                  |               |
| <b>Other</b>     |                  |               |
| D50 (Drilling)   | SPIGEC           |               |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|---------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|--|
| 015                       | TP19-018A             | SOIL          | JULY 13/19        |   | 3               |          | X                   |        |                      |                   |                    |                 |                              |  |
| 016                       | TP19-019A             |               |                   |   |                 | 3        |                     | X      |                      |                   |                    |                 |                              |  |
| 017                       | TP19-019B             |               |                   |   |                 | 3        |                     | X      |                      |                   |                    |                 |                              |  |
| 018                       | TP19-020A             |               |                   |   |                 | 3        |                     | X      |                      |                   |                    |                 |                              |  |
| 019                       | TP19-020B             |               |                   | JULY 14/19                                      |                 | 3        |                     | X      |                      |                   |                    |                 |                              |  |
| 020                       | EX19-012              |               |                   |   |                 | 3        |                     | X      |                      |                   |                    |                 |                              |  |
| 021                       | EX19-013              |               |                   |   |                 | 3        |                     | X      |                      |                   |                    |                 |                              |  |
| 022                       | EX19-014A             |               |                   |   |                 | 3        |                     | X      |                      |                   |                    |                 |                              |  |
| 023                       | EX19-015              |               |                   |   |                 | 3        |                     | X      |                      |                   |                    |                 |                              |  |
| 024                       | EX19-016              |               |                   |   |                 | 3        |                     | X      |                      |                   |                    |                 |                              |  |
| 025                       | EX19-017              |               |                   |   | 3               |          | X                   |        |                      |                   |                    |                 |                              |  |

|  |                  |   |                                    |   |                           |
|--|------------------|---|------------------------------------|---|---------------------------|
| Samples Relinquished By (Print Name and Sign): _____ | Date/Time: _____ | Samples Received By (Print Name and Sign): <u>J. Hasmon</u> | Date/Time: <u>17 July 19 09:05</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy - AGAT | Page <u>3</u> of <u>5</u> |
| Samples Relinquished By (Print Name and Sign): _____ | Date/Time: _____ | Samples Received By (Print Name and Sign): _____            | Date/Time: _____                   |   |                           |
| Samples Relinquished By (Print Name and Sign): _____ | Date/Time: _____ | Samples Received By (Print Name and Sign): _____            | Date/Time: _____                   |   |                           |

E 14960





# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E495262

Notes:  
19 JUL 17 9:08

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

### Report Information

Company: IEG Consultants  
Contact: \_\_\_\_\_  
Address: see p. 1  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
LSD: \_\_\_\_\_  
Client Project #: A04012AU

### Report Information

1. Name: \_\_\_\_\_  
Email: \_\_\_\_\_  
2. Name: Geo P. I.  
Email: \_\_\_\_\_

### Report Format

Single Sample per page  
 Multiple Samples per page  
Excel Format Included

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 working days  
Rush TAT Less than 24 hours  
24 to 48 hours  
48 to 72 hours

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

Date Required: \_\_\_\_\_

### Invoice To Same Yes / No

Company: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
PO/AFE#: 102019-001

### Requirements (Check one)

|                  |                  |               |
|------------------|------------------|---------------|
| <b>CCME</b>      | <b>AB Tier 1</b> | <b>BC CSR</b> |
| Agricultural     | Agricultural     | AW            |
| Industrial       | Industrial       | IW            |
| Residential/Park | Residential/Park | LW            |
| Commercial       | Commercial       | DW            |
| Drinking Water   | Natural Area     |               |
| FWAL             |                  |               |
| <b>Other</b>     |                  |               |
| D50 (Drilling)   | SPIGEC           |               |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS |          |                     |        |                      |                   | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|---------------------|--------|----------------------|-------------------|-----------------|------------------------------|
|                           |                       |               |                   |   |                 | Microtox | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity |                 |                              |
| 026                       | EX19-014 B            | SOIL          | JULY 14/19.       |   | 3               |          | X                   |        |                      |                   |                 |                              |
| 027                       | EX19-018              |               |                   |   | 3               |          | X                   |        |                      |                   |                 |                              |
| 028                       | EX19-019              |               |                   |   | 3               |          | X                   |        |                      |                   |                 |                              |
| 029                       | EX19-020              |               |                   |   | 3               |          | X                   |        |                      |                   |                 |                              |
| 030                       | EX19-021              |               |                   |   | 3               |          | X                   |        |                      |                   |                 |                              |
| 031                       | EX19-022              |               |                   |   | 3               |          | X                   |        |                      |                   |                 |                              |
| 032                       | EX19-023              |               |                   |   | 3               |          | X                   |        |                      |                   |                 |                              |
| 033                       | EX19-024              |               |                   |   | 3               |          | X                   |        |                      |                   |                 |                              |
| 034                       | EX19-025              |               |                   |   | 3               |          | X                   |        |                      |                   |                 |                              |
| 035                       | EX19-026              |               |                   |   | 3               |          | X                   |        |                      |                   |                 |                              |
| 036                       | EX19-027              |               |                   |   | 3               |          | X                   |        |                      |                   |                 |                              |

|  |   |                           |
|--|---|---------------------------|
| Samples Relinquished By (Print Name and Sign): _____<br>Date/Time: _____ | Samples Received By (Print Name and Sign): <u>J. Trasmonte</u><br>Date/Time: <u>17 July 19 09:04h</u> | Page <u>4</u> of <u>5</u> |
| Samples Relinquished By (Print Name and Sign): _____<br>Date/Time: _____ | Samples Received By (Print Name and Sign): _____<br>Date/Time: _____                                  | White Copy - AGAT         |
| Samples Relinquished By (Print Name and Sign): _____<br>Date/Time: _____ | Samples Received By (Print Name and Sign): _____<br>Date/Time: _____                                  | Yellow Copy - AGAT        |
| Samples Relinquished By (Print Name and Sign): _____<br>Date/Time: _____ | Samples Received By (Print Name and Sign): _____<br>Date/Time: _____                                  | White Copy - Client       |

E 14961



# AGAT Laboratories

6310 Roper Road NW  
Edmonton, Alberta  
T6B 3P9  
webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
AGAT Job Number: 19E495

Notes:  
  
19 JUL 17 9:05

## Chain of Custody Record

P: 780.395.2525 • F: 780.462.2490

**Report Information**

Company: IEG Consultants  
 Contact: \_\_\_\_\_  
 Address: See Page 1  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: A04012 All

**Report Information**

1. Name: \_\_\_\_\_  
 Email: See Page 1  
 2. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_

**Report Format**

Single Sample per page  
 Multiple Samples per page  
 Excel Format Included

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 working days  
 Rush TAT Less than 24 hours  
 24 to 48 hours  
 48 to 72 hours

Date Required: \_\_\_\_\_

RUSH TAT REQUESTS UPON FILLING OUT THIS SECTION, CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

**Invoice To**  Same Yes  No

Company: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: 102019-001

**Requirements (Check one)**

| CCME             | AB Tier 1        | BC CSR |
|------------------|------------------|--------|
| Agricultural     | Agricultural     | AW     |
| Industrial       | Industrial       | IW     |
| Residential/Park | Residential/Park | LW     |
| Commercial       | Commercial       | DW     |
| Drinking Water   | Natural Area     |        |
| FWAL             |                  |        |
| <b>Other</b>     |                  |        |
| D50 (Drilling)   | SPIGEC           |        |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Microtox | CCME PHC BTEX/F1-F4 | Metals | AB Class II Landfill | Detailed Salinity | Routine Potability | PRESERVED (Y/N) | CONTAMINATED/HAZARDOUS (Y/N) |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|----------|---------------------|--------|----------------------|-------------------|--------------------|-----------------|------------------------------|
| 037                       | EX19-028              | SOIL          | JULY 15/19        |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |
| 038                       | EX19-029              |               |                   |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |
| 039                       | EX19-030              |               |                   |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |
| 040                       | EX19-031              |               |                   |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |
| 041                       | EX19-032              |               |                   |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |
| 042                       | TP19-021A             |               |                   |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |
| 043                       | TP19-021B             |               |                   |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |
| 044                       | TP19-022A             |               |                   |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |
| 045                       | TP19-022B             |               |                   |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |
| 046                       | TP19-023A             |               |                   |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |
| 047                       | TP19-023B             |               |                   |   | 1               |          | X                   |        |                      |                   |                    |                 |                              |

|  |                                       |   |                                       |
|--|---------------------------------------|---|---------------------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Kim Mackenzie</u> | Date/Time:<br><u>July 15/19 17:00</u> | Samples Received By (Print Name and Sign):<br><u>J. Trasmonte</u> | Date/Time:<br><u>17 July 19 09:00</u> |
| Samples Relinquished By (Print Name and Sign):<br><u>Kim Mackenzie</u> | Date/Time:                            | Samples Received By (Print Name and Sign):                        | Date/Time:                            |
| Samples Relinquished By (Print Name and Sign):                         | Date/Time:                            | Samples Received By (Print Name and Sign):                        | Date/Time:                            |

Pink Copy - Client  
 Yellow Copy - AGAT  
 White Copy - AGAT

Page 5 of 5

Document #: 69-175-1501-001

E 14962



# AGAT Laboratories

## SAMPLE INTEGRITY RECEIPT FORM

3.7°C

### RECEIVING BASICS - Shipping

Company/Consultant: IEG Consultants  
 Courier: Canadian North Cargo Prepaid Collect  
 Waybill# 578-YEV-10603445  
 Branch  EDM  GP  FN  FM  RD  VAN  LYD  FSJ  EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No   
 Custody Seal Intact: Yes  No  NA  
 TAT: <24hr  24-48hr  48-72hr  Reg  Other \_\_\_\_\_  
 Cooler Quantity: 3

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No   
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\*  
 Earliest Expiry: 7  
 Hydrocarbons: Earliest Expiry Ferracore

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No   
 International Samples: Yes  No   
 Tape Sealed: Yes  No   
 Coolant Used: Icepack  Bagged Ice  Free Ice  Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 0.5 + 0.8 + 0.4 = 0.6 °C    2 (Bottle/Jar) 6.2 + 6.0 + 6.8 = 6 °C  
 3 (Bottle/Jar) 4.1 + 4.8 + 4.2 = 4.4 °C    4 (Bottle/Jar) \_\_\_\_\_ °C  
 5 (Bottle/Jar) \_\_\_\_\_ °C    6 (Bottle/Jar) \_\_\_\_\_ °C  
 7 (Bottle/Jar) \_\_\_\_\_ °C    8 (Bottle/Jar) \_\_\_\_\_ °C  
 9 (Bottle/Jar) \_\_\_\_\_ °C    10 (Bottle/Jar) \_\_\_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E495262  
 Samples Damaged: Yes  No  If YES why?  
 No Bubble Wrap    Frozen    Courier  
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes  No   
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_ JARS were packed with \_\_\_\_\_  
 General Comments: \_\_\_\_\_ VIALS \_\_\_\_\_

\* Subcontracted Analysis (See CPM)



**CANADIAN NORTH**

**518-YEV-10603445**

Shipper's Name and Address  
Nom et adresse de l'expéditeur

IEG - Camp Farewell  
PO Box 1038  
Inuvik  
Northwest Territories, Canada  
403-829-3098  
Attn: Nicole Wills

N / negotiable / Non négociable  
**Air Waybill / Lettre de transport aérien**  
Issued by / Émise par

Canadian North, 101 3731 52 Ave E,  
Edmonton International Airport, AB,  
Canada, T9E0V4

Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.  
Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.

Consignee's Name and Address  
Nom et adresse du destinataire

AGAT Laboratories Ltd  
6310 Roper Road  
Edmonton  
Alberta, Canada  
T6B 3P9 780-395-2525  
Attn: Chantal Seenev

It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF, ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURE AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR.

Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur

Agent's IATA Code / Code IATA de l'agent

Account Number / Numéro de compte

Accounting Information / Renseignements comptables **KLO100CW**

IEG Consultants Ltd,  
500 - 2618 Hopewell Place NE  
Calgary  
AB, Canada  
T1Y 7J7  
PO:

Airport of Departure (Address of First Carrier) and Requested Routing  
Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé

**Inuvik**

|   |   |   |          |        |          |
|---|---|---|----------|--------|----------|
| To / à<br><b>YEG</b>  | By first carrier / Par premier transport<br><b>CANADIAN NORTH</b> | To / à  | by / par | To / à | by / par |
| Airport of Destination / Aéroport de destination<br><b>Edmonton</b> |   | Flight Date - For Carrier Use Only<br>Vol. Date - Réservé au Transporteur |          |        |          |

|   |                                 |  |                                     |  |  |
|---|---------------------------------|--|-------------------------------------|--|--|
| Currency<br>Monnaie<br><b>CDN</b>             | CHGS<br>Code Frais<br><b>PX</b> | WT / Po ds-Val<br>PPD Payé<br><b>X</b>   | Other/Autres<br>COLL Du<br><b>X</b> | Declared Value for Carriage<br>Valeur déclarée pour la livraison<br><b>NDV</b> | Declared value for Customs<br>Valeur déclarée pour la douane<br><b>NCV</b> |
| Amount of Insurance<br>Montant de l'assurance |                                 | INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance".<br>ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance" |                                     |  |  |

Handling Information / Renseignements pour le traitement de l'expédition

**H4PU**  
**Keep Cool**

SCI

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut | kg<br>lb | Chargeable<br>Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total    | Commodity Item<br>No.<br>No. d'article de<br>la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|----------------------------|----------|---|----------------------------------|-----------|----------|---|---|
| 3                                       | 57 K                       |          | 57  | 7.57                             |           | \$431.49 | GAD   | Soil Samples 60cm x 33cm x 107cm  |
| 3                                       | 57                         |          | 57  |                                  |           | \$431.49 |   |   |

|   |  |
|---|--|
| Weight Charge<br>Prepaid / Porte payé<br><b>\$431.49</b>                        | Taxation au poids<br>Collect / Port dû     |
| Valuation Charge  | Taxation à la valeur                       |
| Tax<br><b>\$28.69</b>   | Taxe                                       |
| Total other Charges Due Agent   | Total des autres frais dus à l'agent       |
| Total other Charges Due Carrier<br><b>\$142.31</b>                              | Total des autres frais dus au              |
| Total Prepaid / Total port payé<br><b>\$602.49</b>                              | Total collect / Total port dû              |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination | Charges at Destination / Frais à l'arrivée |

Other Charges / Autres frais

**5T Nav Can Surcharge = 21.57, ACS Screening Fee = 8.55, 5T Fuel Surcharge = 112.19, GST/HST = 28.69**

Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent

*John E*

Executed on / Fait le **16 Jul 2019** at / à **YEV** (Place) / (Lieu)

Signature of issuing Carrier or its Agent / Signature du transporteur émetteur ou de son Agent

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E497437

TRACE ORGANICS REVIEWED BY: Laarni Hafso, Laboratory Manager

DATE REPORTED: Jul 30, 2019

PAGES (INCLUDING COVER): 15

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-24

DATE REPORTED: 2019-07-30

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-036   | EX19-037   | EX19-038   | EX19-039   | EX19-040   | EX19-041   | EX19-042   | EX19-043   |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-20 | 2019-07-20 | 2019-07-20 | 2019-07-20 | 2019-07-20 | 2019-07-20 | 2019-07-21 | 2019-07-21 | 2019-07-21 |
|                                |       | G / S               | RDL    | 379904     | 379905     | 379906     | 379907     | 379908     | 379909     | 379910     | 379911     |            |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | <0.05  | 0.05       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | <10    | 4650       | <10        | <10        | <10        | <10        | <10        | <10        | 50         |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | <10    | 490        | <10        | <10        | <10        | <10        | 20         | 30         | 130        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | <10    | 40         | <10        | <10        | <10        | <10        | <10        | <10        | 40         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 5      | 14         | 6          | 4          | 6          | 11         | 5          | 8          |            |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101    | 99         | 101        | 102        | 101        | 100        | 100        | 100        | 100        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 80     | 69         | 83         | 94         | 85         | 85         | 82         | 77         |            |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 104    | 106        | 102        | 103        | 102        | 98         | 104        | 104        |            |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-24

DATE REPORTED: 2019-07-30

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-044   | EX19-045   | EX19-046   | EX19-047   | EX19-048   | EX19-049   | EX19-050   | EX19-051   |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 |
|                                |       | G / S               | RDL    | 379912     | 379913     | 379914     | 379915     | 379916     | 379917     | 379918     | 379919     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | <10    | 50         | <10        | <10        | <10        | <10        | <10        | 60         | <10        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 180    | 50         | <10        | <10        | <10        | <10        | <10        | 250        | <10        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 90     | 30         | <10        | <10        | <10        | <10        | <10        | 120        | <10        |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 15     | 4          | 4          | 4          | 3          | 4          | 7          | 5          | 3          |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 100    | 100        | 100        | 102        | 100        | 100        | 100        | 100        | 101        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 81     | 78         | 75         | 81         | 78         | 80         | 80         | 78         | 84         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 103    | 118        | 112        | 105        | 103        | 103        | 103        | 104        | 102        |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-24

DATE REPORTED: 2019-07-30

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | TP19-024A  | TP19-024B  | TP19-025A  | TP19-025B  | TP19-026A  | TP19-026B  | TP19-027A  | TP19-027B  |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 |
|                                |       | G / S               | RDL    | 379920     | 379921     | 379922     | 379923     | 379924     | 379925     | 379926     | 379927     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | 0.007      | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | 0.06       | 0.24       | 0.06       | 0.09       | <0.05      | <0.05      | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | 0.01       | 0.08       | 0.02       | 0.02       | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | 0.06   | 0.09       | 0.54       | 0.10       | 0.12       | 0.05       | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 280    | 160        | 130        | 140        | 110        | 110        | 160        | 180        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 450    | 340        | 370        | 370        | 220        | 300        | 320        | 210        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 100    | 100        | 100        | 90         | 60         | 80         | 80         | 40         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 12     | 12         | 11         | 7          | 12         | 11         | 11         | 8          |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101    | 100        | 100        | 101        | 100        | 101        | 98         | 99         |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 76     | 77         | 77         | 76         | 74         | 75         | 77         | 93         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 96     | 118        | 114        | 114        | 72         | 98         | 78         | 66         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-24

DATE REPORTED: 2019-07-30

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | TP19-028A  | TP19-028B  | TP19-029A  | TP19-029B  | TP19-030A  | TP19-030B  | TP19-031A  | TP19-031B  |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 |
|                                |       | G / S               | RDL    | 379928     | 379929     | 379930     | 379931     | 379932     | 379933     | 379934     | 379935     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | 0.10       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 120    | 110        | 160        | 260        | 490        | 170        | 320        | 250        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 230    | 250        | 310        | 330        | 390        | 210        | 460        | 440        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 50     | 70         | 70         | 80         | 90         | 40         | 100        | 130        |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 11     | 11         | 9          | 9          | 12         | 11         | 12         | 13         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 98     | 98         | 98         | 99         | 98         | 99         | 98         | 98         | 99         |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 94     | 81         | 85         | 82         | 75         | 83         | 80         | 91         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 80     | 80         | 83         | 75         | 76         | 74         | 118        | 87         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-24

DATE REPORTED: 2019-07-30

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            |            |            |            |            |            |            |            |            |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | G / S               |            | TP19-032A  | TP19-032B  | TP19-033A  | TP19-033B  | TP19-033C  | TP19-034A  | TP19-034B  | TP19-035A  |
|                                |       | RDL                 | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 | 2019-07-21 |
|                                |       |                     | 379936     | 379937     | 379938     | 379939     | 379940     | 379941     | 379942     | 379943     |            |
| Benzene                        | mg/kg | 0.005               | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | 0.011      | 0.005      | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05      | <0.05      | <0.05      | 0.06       | 0.28       | 0.08       | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | 0.02       | 0.04       | 0.03       | 0.01       | 0.03       | 0.08       | 0.04       | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | 0.14       | 0.16       | 0.27       | 0.09       | 0.22       | 1.14       | 0.59       | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | 20         | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | 20         | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 300        | 360        | 280        | 300        | 250        | 330        | 670        | 170        | 170        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 340        | 380        | 460        | 530        | 340        | 380        | 450        | 290        | 290        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 100        | 100        | 130        | 150        | 80         | 110        | 80         | 70         | 70         |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 14         | 12         | 14         | 13         | 12         | 14         | 16         | 11         | 11         |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 98         | 99         | 101        | 102        | 101        | 101        | 101        | 101        | 101        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 80         | 84         | 76         | 78         | 80         | 78         | 87         | 72         | 72         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 76         | 70         | 94         | 90         | 95         | 89         | 86         | 91         | 91         |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-24

DATE REPORTED: 2019-07-30

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | TP19-035B | TP19-036A | TP19-036B | TP19-036C |
|--------------------------------|-------|---------------------|--------|-----------|-----------|-----------|-----------|
|                                |       | G / S               | RDL    | 379944    | 379945    | 379946    | 379947    |
| Benzene                        | mg/kg | 0.005               | <0.005 | 0.073     | 0.088     | 0.056     |           |
| Toluene                        | mg/kg | 0.05                | <0.05  | 0.14      | 0.09      | 0.08      |           |
| Ethylbenzene                   | mg/kg | 0.01                | 0.01   | 0.84      | 1.14      | 0.45      |           |
| Xylenes                        | mg/kg | 0.05                | 0.09   | 3.47      | 4.99      | 1.57      |           |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | 60        | 60        | 20        |           |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | 60        | 50        | 20        |           |
| C10 - C16 (F2)                 | mg/kg | 10                  | 190    | 150       | 530       | 210       |           |
| C16 - C34 (F3)                 | mg/kg | 10                  | 360    | 320       | 680       | 480       |           |
| C34 - C50 (F4)                 | mg/kg | 10                  | 90     | 100       | 220       | 150       |           |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A       | N/A       | N/A       |           |
| Moisture Content               | %     | 1                   | 12     | 16        | 22        | 19        |           |
| Surrogate                      | Unit  | Acceptable Limits   |        |           |           |           |           |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101    | 101       | 101       | 99        |           |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 78     | 80        | 80        | 91        |           |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 94     | 93        | 88        | 86        |           |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-24

DATE REPORTED: 2019-07-30

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

379904-379947

Results are based on the dry weight of the sample.  
 The C6-C10 (F1) fraction is calculated using toluene response factor.  
 The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
 Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
 Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
 Quality control data is available upon request.  
 Assistance in the interpretation of data is available upon request.  
 This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
 nC6 and nC10 response factors are within 30% of Toluene response factor.  
 nC10, nC16 and nC34 response factors are within 10% of their average.  
 C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
 Linearity is within 15%.  
 The chromatogram returned to baseline by the retention time of nC50.  
 Extraction and holding times were met for this sample.  
 C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
 Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E497437

PROJECT: A04012A11

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Trace Organics Analysis

| RPT Date:   |       | DUPLICATE |        |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|---|-------|-----------|--------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER   | Batch | Sample Id | Dup #1 | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|   |       |           |        |        |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |        |        |       |                |              |                    |       |          |                    |       |          |                   |       |  |
| Benzene   | 2100  | 379904    | <0.005 | <0.005 | NA    | < 0.005        | 98%          | 80%                | 120%  | 87%      | 80%                | 120%  | 74%      | 60%               | 140%  |  |
| Toluene   | 2100  | 379904    | <0.05  | <0.05  | NA    | < 0.05         | 98%          | 80%                | 120%  | 89%      | 80%                | 120%  | 73%      | 60%               | 140%  |  |
| Ethylbenzene  | 2100  | 379904    | <0.01  | <0.01  | NA    | < 0.01         | 102%         | 80%                | 120%  | 89%      | 80%                | 120%  | 69%      | 60%               | 140%  |  |
| Xylenes   | 2100  | 379904    | <0.05  | <0.05  | NA    | < 0.05         | 110%         | 80%                | 120%  | 94%      | 80%                | 120%  | 74%      | 60%               | 140%  |  |
| C6 - C10 (F1)   | 2100  | 379904    | <10    | <10    | NA    | < 10           | 105%         | 80%                | 120%  | 95%      | 80%                | 120%  | 80%      | 60%               | 140%  |  |
| C10 - C16 (F2)  | 1515  | 379905    | 4650   | 3690   | 23.0% | < 10           | 95%          | 80%                | 120%  | 103%     | 80%                | 120%  | 95%      | 60%               | 140%  |  |
| C16 - C34 (F3)  | 1515  | 379905    | 490    | 400    | 20.2% | < 10           | 96%          | 80%                | 120%  | 95%      | 80%                | 120%  | 87%      | 60%               | 140%  |  |
| C34 - C50 (F4)  | 1515  | 379905    | 40     | 20     | NA    | < 10           | 90%          | 80%                | 120%  | 101%     | 80%                | 120%  | 93%      | 60%               | 140%  |  |
| Moisture Content  | 1515  | 379905    | 14     | 13     | 7.4%  | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

|   |      |        |     |     |       |      |     |     |      |     |     |      |     |     |      |
|---|------|--------|-----|-----|-------|------|-----|-----|------|-----|-----|------|-----|-----|------|
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |      |        |     |     |       |      |     |     |      |     |     |      |     |     |      |
| C10 - C16 (F2)  | 1077 | 379928 | 120 | 140 | 15.4% | < 10 | 91% | 80% | 120% | 91% | 80% | 120% | 90% | 60% | 140% |
| C16 - C34 (F3)  | 1077 | 379928 | 230 | 210 | 9.1%  | < 10 | 84% | 80% | 120% | 89% | 80% | 120% | 88% | 60% | 140% |
| C34 - C50 (F4)  | 1077 | 379928 | 50  | 40  | NA    | < 10 | 92% | 80% | 120% | 91% | 80% | 120% | 85% | 60% | 140% |
| Moisture Content  | 1077 | 379928 | 11  | 11  | 0.0%  | < 1  |     |     |      |     |     |      |     |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

|   |      |        |        |        |    |         |      |     |      |      |     |      |     |     |      |
|---|------|--------|--------|--------|----|---------|------|-----|------|------|-----|------|-----|-----|------|
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |      |        |        |        |    |         |      |     |      |      |     |      |     |     |      |
| Benzene   | 1956 | 379928 | <0.005 | <0.005 | NA | < 0.005 | 99%  | 80% | 120% | 88%  | 80% | 120% | 73% | 60% | 140% |
| Toluene   | 1956 | 379928 | <0.05  | <0.05  | NA | < 0.05  | 103% | 80% | 120% | 92%  | 80% | 120% | 75% | 60% | 140% |
| Ethylbenzene  | 1956 | 379928 | <0.01  | <0.01  | NA | < 0.01  | 91%  | 80% | 120% | 80%  | 80% | 120% | 62% | 60% | 140% |
| Xylenes   | 1956 | 379928 | <0.05  | <0.05  | NA | < 0.05  | 107% | 80% | 120% | 81%  | 80% | 120% | 62% | 60% | 140% |
| C6 - C10 (F1)   | 1956 | 379928 | <10    | <10    | NA | < 10    | 106% | 80% | 120% | 104% | 80% | 120% | 67% | 60% | 140% |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

Certified By:



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E497437  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |



# AGAT Laboratories

2910 12 Street NE

Calgary, Alberta T2E 7P7

P: 403-735-2005 • F: 403-735-2771

webearth.agatlabs.com

## Laboratory Use Only

Arrival Temperature: \_\_\_\_\_

AGAT Job Number: 19E497437

Date and Time: 19 JUL 24 10:02

## Chain of Custody Record

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

**Report Information**

Company: IEG Consultants  
 Contact: Kyle Schepanow  
 Address: 500-2618 Hopewell Place  
Calgary, AB T1Y 7J7  
 Phone: 403-648-4292 Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: AD4012A11  
 Sampled By: \_\_\_\_\_

**Report Information**

1. Name: Stephanie Hannem  
 Email: shannem@klohn.com  
 2. Name: Kim Mackenzie  
 Email: kmackenzie@klohn.com  
 3. Name: Kyle Schepanow  
 Email: kshepanow@klohn.com

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Rush TAT  Two Day / Next Day (100%)  
 Three Day (50%)  
 Four Day (25%)  
 Date Required: \_\_\_\_\_

SEE BACK FOR SURCHARGE BREAKDOWN. CONTACT YOUR CPM FOR ADDITIONAL INFORMATION

**Invoice To** Same Yes  No

Company: SAME AS ABOVE  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: 102019-001  
 Standing Offer #: \_\_\_\_\_

**Requirements** (Selection may impact detection limits)

CCME  AB Tier 1  
 Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  Acute

**Report Format**

Single  Sample Per Page  
 Multiple  Samples Per Page  
 Export

|  |  |
|--|--|
| Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50                    | <input checked="" type="checkbox"/> CCME/AB : BTEX/F1-F4 <input type="checkbox"/> CCME/AB : BTEX/F1-F2   |
| <input type="checkbox"/> BC: BTEX/APH/EPH <input type="checkbox"/> BC: LEPH/HEPH   | <input type="checkbox"/> SK: BTEX/TVH/C11-C22, C23-C60   |
| <b>Soil Metals:</b> <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | <b>Water Metals:</b> <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> |
| <b>Routine Water Chemistry</b>   | <b>Landfill:</b> <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK   |
| <b>Coliforms:</b> <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli  | <b>Particle Size:</b> <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture   |
| HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee)  |  |
| HOLD FOR 30 DAYS AFTER ANALYSIS (Additional Fee)   |  |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         |
|---------------------------|-----------------------|-------|-------------------|---------------|--|-----------------|------|---------|
|                           |                       |       |                   |               |  | VIALS / JARS    | BAGS | BOTTLES |
| 1 <u>379904</u>           | <u>EX19-036</u>       |       | <u>July 20/19</u> | <u>Soil</u>   |  | <u>3</u>        |      |         |
| 2 <u>905</u>              | <u>EX19-037</u>       |       | ↓                 | ↓             |  |                 |      |         |
| 3 <u>906</u>              | <u>EX19-038</u>       |       | ↓                 | ↓             |  |                 |      |         |
| 4 <u>907</u>              | <u>EX19-039</u>       |       | ↓                 | ↓             |  |                 |      |         |
| 5 <u>908</u>              | <u>EX19-040</u>       |       | ↓                 | ↓             |  |                 |      |         |
| 6 <u>909</u>              | <u>EX19-041</u>       |       | ↓                 | ↓             |  |                 |      |         |
| 7 <u>910</u>              | <u>EX19-042</u>       |       | <u>July 21/19</u> | ↓             |  |                 |      |         |
| 8 <u>911</u>              | <u>EX19-043</u>       |       | ↓                 | ↓             |  |                 |      |         |
| 9 <u>912</u>              | <u>EX19-044</u>       |       | ↓                 | ↓             |  |                 |      |         |
| 10 <u>913</u>             | <u>EX19-045</u>       |       | ↓                 | ↓             |  |                 |      |         |

|   |                                       |   |                     |                    |  |
|---|---------------------------------------|---|---------------------|--------------------|--|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> <u>Mannem</u> | Date/Time:<br><u>July 22/19 13:00</u> | Samples Received By (Print Name and Sign):<br><u>Jason Trasmont</u> <u>Trasmont</u> | Date/Time:<br>_____ | Pink Copy - Client | Page <u>1</u> of <u>3</u><br>N <sup>o</sup> : AB <b>090064</b> |
| Samples Relinquished By (Print Name and Sign):  | Date/Time:                            | Samples Received By (Print Name and Sign):  | Date/Time:          | Yellow Copy - AGAT |  |
| Samples Relinquished By (Print Name and Sign):  | Date/Time:                            | Samples Received By (Print Name and Sign):  | Date/Time:          | White Copy - AGAT  |  |







# AGAT Laboratories

2910 12 Street NE

Calgary, Alberta T2E 7P7

P: 403-735-2005 • F: 403-735-2771

webearth.agatlabs.com

**Laboratory Use Only**

Arrival Temperature: \_\_\_\_\_

AGAT Job Number: **19E497437**

Date and Time: **19 JUL 24 10:02**

**Chain of Custody Record**

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

**Report Information**

Company: IEG Consultants  
 Contact: Kyle Schepanow  
 Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 7T7  
 Phone: 403-648-4292 Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: A04012A11  
 Sampled By: \_\_\_\_\_

**Report Information**

1. Name: Stephanie Hannem  
 Email: shannem@klohn.com  
 2. Name: Kim Mackenzie  
 Email: kmackenzie@klohn.com  
 3. Name: Kyle Schepanow  
 Email: kschepanow@klohn.com

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Three Day (50%)  
 Four Day (25%)

Rush TAT \_\_\_\_\_  
 Date Required: \_\_\_\_\_

SEE BACK FOR  
SURCHARGE  
BREAKDOWN.  
CONTACT YOUR CPM  
FOR ADDITIONAL  
INFORMATION

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: I02019-001  
 Standing Offer #: \_\_\_\_\_

**Requirements** (Selection may impact detection limits)

CCME  AB Tier 1  
 Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  
 Acute

**Report Format**

Single  Sample Per Page  
 Multiple  Samples Per Page  
 Export

|  |  |
|--|--|
| Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50                                      | <input checked="" type="checkbox"/> CCME/AB : BTEX/F1-F4 <input type="checkbox"/> CCME/AB : BTEX/F1-F2   |
| <input type="checkbox"/> BC: BTEX/VPH/EPH <input type="checkbox"/> BC: LEPH/HEPH   | SK: BTEX/VPH/C11-C22, C23-C60  |
| <input type="checkbox"/> Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | <input type="checkbox"/> Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> |
| <input type="checkbox"/> Routine Water Chemistry   | <input type="checkbox"/> Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK   |
| <input type="checkbox"/> Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli  | <input type="checkbox"/> Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture   |
| HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee)  |  |
| HOLD FOR 30 DAYS AFTER ANALYSIS (Additional Fee)   |  |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         |
|---------------------------|-----------------------|-------|-------------------|---------------|--|-----------------|------|---------|
|                           |                       |       |                   |               |  | VIALS / JARS    | BAGS | BOTTLES |
| 1                         | 939 TP19-033B         |       | July 21/19        | SOIL          |  | 3               |      |         |
| 2                         | 940 TP19-033C         |       |                   |               |  | 3               |      |         |
| 3                         | 941 TP19-034A         |       |                   |               |  | 3               |      |         |
| 4                         | 942 TP19-034B         |       |                   |               |  | 3               |      |         |
| 5                         | 943 TP19-035A         |       |                   |               |  | 3               |      |         |
| 6                         | 944 TP19-035B         |       |                   |               |  | 3               |      |         |
| 7                         | 945 TP19-036A         |       |                   |               |  | 3               |      |         |
| 8                         | 946 TP19-036B         |       |                   |               |  | 3               |      |         |
| 9                         | 947 TP19-036C         |       |                   |               |  | 3               |      |         |
| 10                        |                       |       |                   |               |  |                 |      |         |

|  |                                    |  |                                       |
|--|------------------------------------|--|---------------------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> <i>[Signature]</i> | Date/Time:<br><u>July 22/13:00</u> | Samples Received By (Print Name and Sign):<br><u>Jason Traimate</u> <i>[Signature]</i> | Date/Time:<br><u>24 July 19 1002H</u> |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                         | Samples Received By (Print Name and Sign):   | Date/Time:                            |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                         | Samples Received By (Print Name and Sign):   | Date/Time:                            |

Pink Copy - Client  
 Yellow Copy - AGAT  
 White Copy - AGAT

Page 3 of 3  
 No: AB **090063**



# AGAT Laboratories

## SAMPLE INTEGRITY RECEIPT FORM

9.9°C

### RECEIVING BASICS - Shipping

Company/Consultant: IEG Consultants

Courier: Canadian North Prepaid Collect

Waybill# 578 - YEV - 10609544

Branch  EDM  GP  FN  FM  RD  VAN  LYD  FSJ  EST Other: \_\_\_\_\_

If multiple sites were submitted at once: Yes  No

Custody Seal Intact: Yes  No  NA

TAT: <24hr  24-48hr  48-72hr  Reg Other \_\_\_\_\_

Cooler Quantity: 2

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar)  $9.5 + 9.8 + 9.4 = 9.4$  °C 2 (Bottle/Jar)  $11.1 + 10.4 + 9.7 = 10.4$  °C

3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E497437

Samples Damaged: Yes  No  If YES why?

No Bubble Wrap Frozen Courier

Other: \_\_\_\_\_

Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes  No

Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_

CPM Initial \_\_\_\_\_

General Comments: Handwritten notes and signatures

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No

Inorganic Tests (Please Circle): Mibi, BOD, Nitrate/Nitrite, Turbidity, Microtox, Ortho PO4, Tedlar Bag, Residual Chlorine, Chlorophyll\*, Chloroamines\*

Earliest Expiry: X

Hydrocarbons: Earliest Expiry Terracon

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_

Legal Samples: Yes  No

International Samples: Yes  No

Tape Sealed: Yes  No

Coolant Used: Icepack  Bagged Ice  Free Ice  Free Water  None

\* Subcontracted Analysis (See CPM)



**CANADIAN NORTH**  
**C A R G O**

**518-YEV-10609546**

| Shipper's Name and Address<br>Norm et adresse de l'expéditeur<br><br>IEG - Camp Farewell<br>PO Box 1038<br>Inuvik<br>Northwest Territories, Canada<br>403-829-3098<br>Attn: Nicole Wills  |   | Not negotiable / Non négociable<br><b>Air Waybill / Lettre de transport aérien</b><br>Issued by / Emise par<br><br>Canadian North; 101 3731 52 Ave E,<br>Edmonton International Airport, AB,<br>Canada, T9E0V4<br><br>Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.<br>Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.  |                                   |   |  |   |   |  |  |
|---|---|---|-----------------------------------|---|--|---|---|--|--|
| Consignee's Name and Address<br>Nom et adresse du destinataire<br><br>AGAT Laboratories Ltd<br>6310 Roper Road NW<br>Edmonton<br>Alberta, Canada<br>T6E 6S4 780 395 2525<br>Attn: Chantal Seeney  |   | It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF, ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR. |                                   |   |  |   |   |  |  |
| Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur<br><br>Agent's IATA Code / Code IATA de l'agent<br>Account Number / Numéro de compte<br><br>Airport of Departure (Address of First Carrier) and Requested Routing<br>Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé<br><b>Inuvik</b> |   | Accounting Information / Renseignements comptables<br><b>KLO100CW</b><br><br>IEG Consultants Ltd.<br>500 - 2618 Hopewell Place NE<br>Calgary<br>AB, Canada<br>T1Y 7J7<br>PO:  |                                   |   |  |   |   |  |  |
| To / à<br><b>YEG</b>  | By first carrier / Par premier transport<br><b>CANADIAN NORTH</b> | To / à<br>by / par<br>To / à<br>by / par  | Currency<br>Monnaie<br><b>CDN</b> | CHGS<br>Code Frais<br><b>PX</b>   | WT / Poids-Vol<br>PPD Payé<br><b>X</b> | Other/Autres<br>COLL Du<br><b>X</b>               | Declared Value for Carriage<br>Valeur déclarée pour la transport<br><b>NDV</b>  | Declared value for Customs<br>Valeur déclarée pour la douane<br><b>NCV</b> |  |
| Airport of Destination / Aéroport de destination<br><b>Edmonton</b>   |   | Flight Date - For Carrier Use Only<br>Vol. Date - Réservé au Transporteur   |                                   | Amount of Insurance<br>Montant de l'assurance<br>INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance"<br>ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance"  |  |   |   |  |  |
| Handling Information / Renseignements pour le traitement de l'expédition<br><b>H4PU</b><br><b>KEEP COOL</b><br><br><div style="text-align: right;">SCI</div>  |   |   |                                   |   |  |   |   |  |  |
| No. of Pieces<br>Nombre de colis<br>RCP   | Gross Weight<br>Poids brut<br>kg                                  | Chargeable Weight<br>Poids de taxation  | Rate / Charge<br>Tarif / Montant  | Interline   | Total                                  | Commodity Item<br>No. d'article de la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |  |  |
| 2   | K   | K   | 36                                |   |  | GAD   | Soil Samples 60cm x 33cm x 71cm   |  |  |
| 2   | 36  | 36  |                                   |   |  |   |   |  |  |
| Weight Charge<br>Prepaid / Porte payé   |   | Taxation au poids<br>Collect / Port dû  |                                   | Other Charges / Autres frais  |  |   |   |  |  |
| Valuation Charge  |   | Taxation à la valeur  |                                   | Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.<br>L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure où une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable. |  |   |   |  |  |
| Tax   |   | Taxe  |                                   | Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent   |  |   |   |  |  |
| Total other Charges Due Agent   |   | Total des autres frais dûs à l'agent  |                                   | Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent   |  |   |   |  |  |
| Total other Charges Due Carrier   |   | Total des autres frais dûs au   |                                   | Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent   |  |   |   |  |  |
| Total Prepaid / Total port payé   |   | Total collect / Total port dû   |                                   | Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent   |  |   |   |  |  |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination   |   | Charges at Destination / Frais à l'arrivée  |                                   | Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent   |  |   |   |  |  |
|   |   |   |                                   | Executed on (Date) at (Place)<br>Fait le (Date) à (Lieu)<br>23 Jul 2019 YEV<br>Signature of issuing Carrier or its Agent<br>Signature du Transporteur émetteur ou de son Agent  |  |   |   |  |  |
|   |   |   |                                   | Total Collect Charges / Total Du  |  |   |   |  |  |

518-YEV-10609546

Copy 3 - Consignee / Shipper Copy

Track online at [CanadianNorth.com/Cargo/Track](http://CanadianNorth.com/Cargo/Track).

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E498490

TRACE ORGANICS REVIEWED BY: Melinda Guay, Technical Reviewer

DATE REPORTED: Aug 01, 2019

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E498490

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-28

DATE REPORTED: 2019-08-01

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-052   | EX19-053   | EX19-054   | EX19-055   | EX19-056   |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-25 | 2019-07-25 | 2019-07-25 | 2019-07-25 | 2019-07-25 |
|                                |       | G / S               | RDL    | 387678     | 387682     | 387683     | 387684     | 387685     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | 0.01       | 0.36       | <0.01      | 0.02       |            |
| Xylenes                        | mg/kg | 0.05                | <0.05  | 0.08       | 4.04       | <0.05      | 0.15       |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | 780        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | 780        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | <10    | <10        | 4270       | 40         | <10        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | <10    | 30         | 810        | 80         | 130        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | <10    | <10        | <10        | <10        | 50         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 9      | 4          | 8          | 5          | 10         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 99     | 99         | 111        | 99         | 100        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 84     | 89         | 119        | 84         | 95         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 93     | 99         | 102        | 95         | 102        |            |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E498490

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-07-28

DATE REPORTED: 2019-08-01

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

387678-387685

Results are based on the dry weight of the sample.  
 The C6-C10 (F1) fraction is calculated using toluene response factor.  
 The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
 Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
 Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
 Quality control data is available upon request.  
 Assistance in the interpretation of data is available upon request.  
 This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
 nC6 and nC10 response factors are within 30% of Toluene response factor.  
 nC10, nC16 and nC34 response factors are within 10% of their average.  
 C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
 Linearity is within 15%.  
 The chromatogram returned to baseline by the retention time of nC50.  
 Extraction and holding times were met for this sample.  
 C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
 Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
 PROJECT: A04012A11  
 SAMPLING SITE:

AGAT WORK ORDER: 19E498490  
 ATTENTION TO: Kyle Schepanow  
 SAMPLED BY:

### Trace Organics Analysis

| RPT Date:   |       | DUPLICATE |        |        |      |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|---|-------|-----------|--------|--------|------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER   | Batch | Sample Id | Dup #1 | Dup #2 | RPD  | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|   |       |           |        |        |      |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |        |        |      |                |              |                    |       |          |                    |       |          |                   |       |  |
| Benzene   | 1958  | 395842    | <0.005 | <0.005 | NA   | < 0.005        | 94%          | 80%                | 120%  | 100%     | 80%                | 120%  | 90%      | 60%               | 140%  |  |
| Toluene   | 1958  | 395842    | <0.05  | <0.05  | NA   | < 0.05         | 98%          | 80%                | 120%  | 103%     | 80%                | 120%  | 96%      | 60%               | 140%  |  |
| Ethylbenzene  | 1958  | 395842    | 0.03   | 0.02   | NA   | < 0.01         | 87%          | 80%                | 120%  | 90%      | 80%                | 120%  | 81%      | 60%               | 140%  |  |
| Xylenes   | 1958  | 395842    | 0.40   | 0.38   | 5.1% | < 0.05         | 101%         | 80%                | 120%  | 88%      | 80%                | 120%  | 82%      | 60%               | 140%  |  |
| C6 - C10 (F1)   | 1958  | 395842    | <10    | <10    | NA   | < 10           | 105%         | 80%                | 120%  | 91%      | 80%                | 120%  | 111%     | 60%               | 140%  |  |
| C10 - C16 (F2)  | 1518  | 385927    | < 10   | < 10   | NA   | < 10           | 111%         | 80%                | 120%  | 110%     | 80%                | 120%  | 115%     | 60%               | 140%  |  |
| C16 - C34 (F3)  | 1518  | 385927    | < 10   | < 10   | NA   | < 10           | 114%         | 80%                | 120%  | 101%     | 80%                | 120%  | 107%     | 60%               | 140%  |  |
| C34 - C50 (F4)  | 1518  | 385927    | < 10   | < 10   | NA   | < 10           | 110%         | 80%                | 120%  | 108%     | 80%                | 120%  | 114%     | 60%               | 140%  |  |
| Moisture Content  | 1518  | 385927    | 24     | 24     | 0.0% | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

Certified By: 

## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD  
 PROJECT: A04012A11  
 SAMPLING SITE:

AGAT WORK ORDER: 19E498490  
 ATTENTION TO: Kyle Schepanow  
 SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |





# AGAT Laboratories

2910 12 Street NE  
 Calgary, Alberta T2E 7P7  
 P: 403-735-2005 • F: 403-735-2771  
 webearth.agatlabs.com

**Laboratory Use Only**

Arrival Temperature: 8.0 °C  
 AGAT Job Number: 19E498490  
 Date and Time: 19 JUL 28 9:22

**Chain of Custody Record**

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

**Report Information**

Company: IEG Consultants  
 Contact: Kyle Schepanow  
 Address: 500-2618 Hopewell Place  
Calgary, AB T2Y 7J7  
 Phone: 403-648-4292 Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: A04012A11  
 Sampled By: \_\_\_\_\_

**Report Information**

1. Name: Stephanie Hannem  
 Email: shannem@klohn.com  
 2. Name: Kim Mackenzie  
 Email: kmackenzie@klohn.com  
 3. Name: Kyle Schepanow  
 Email: kschepanow@klohn.com

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Rush TAT  Three Day (50%)  
 Four Day (25%)  
 Date Required: \_\_\_\_\_

SEE BACK FOR  
 SURCHARGE  
 BREAKDOWN.  
 CONTACT YOUR CPM  
 FOR ADDITIONAL  
 INFORMATION

**Invoice To** Same Yes  / No

Company: SAME AS ABOVE  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: \_\_\_\_\_  
 Standing Offer #: 102019-001

**Requirements** (Selection may impact detection limits)

CCME       AB Tier 1  
 Agricultural       Agricultural  
 Industrial       Industrial  
 Residential/Park       Residential/Park  
 Commercial       Commercial  
 FWAL       Natural Area  
 Drinking Water       Alberta Surface Water  
 Other: \_\_\_\_\_       Chronic  
     Acute

**Report Format**

Single  
 Sample Per Page  
 Multiple  
 Samples Per Page  
 Export

|   |   |
|---|---|
| Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50                   | HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee) |
| <input checked="" type="checkbox"/> CCME/AB : BTEX/F1-F4 <input type="checkbox"/> CCME/AB : BTEX /F1-F2   |   |
| <input type="checkbox"/> BC: BTEX/APH/EPH <input type="checkbox"/> BC: LEPH/HEPH  |   |
| SK: BTEX/TVH/C11-C22, C23-C60   |   |
| Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup>       |   |
| Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> |   |
| Routine Water Chemistry   |   |
| Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK   |   |
| Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli  |   |
| Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture   |   |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION                            | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         |  |
|---------------------------|--|-------|-------------------|---------------|--|-----------------|------|---------|--|
|                           |  |       |                   |               |  | VIALS / JARS    | BAGS | BOTTLES |  |
| 1                         | 7678 EX19-052                                    |       | JULY 25/19        | SOIL          |  | 3               |      |         |  |
| 2                         | 682 EX19-053                                     |       | ↓                 | ↓             |  | 3               |      |         |  |
| 3                         | 683 EX19-054                                     |       | ↓                 | ↓             |  | 3               |      |         |  |
| 4                         | 684 EX19-055                                     |       | ↓                 | ↓             |  | 3               |      |         |  |
| 5                         | 685 EX19-056                                     |       | ↓                 | ↓             |  | 3               |      |         |  |
| 6                         | +Vials for EX19-036-EX19-051 (last IEG shipment) |       |                   |               |  |                 |      |         |  |
| 7                         |  |       |                   |               |  |                 |      |         |  |
| 8                         |  |       |                   |               |  |                 |      |         |  |
| 9                         |  |       |                   |               |  |                 |      |         |  |
| 10                        |  |       |                   |               |  |                 |      |         |  |

|   |                                       |  |                                |   |   |
|---|---------------------------------------|--|--------------------------------|---|---|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>July 26/19 16:00</u> | Samples Received By (Print Name and Sign):<br><u>[Signature]</u> | Date/Time:<br><u>7/28/2019</u> | Pink Copy - Client<br>Yellow Copy - AGAT<br>White Copy - AGAT | Page <u>1</u> of <u>1</u><br>Nº: AB <b>090065</b> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                            | Samples Received By (Print Name and Sign):                       | Date/Time:                     |   |   |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                            | Samples Received By (Print Name and Sign):                       | Date/Time:                     |   |   |

### RECEIVING BASICS - Shipping

Company/Consultant: IEG Consultants  
 Courier: Canadian North Prepaid Collect  
 Waybill# 518-YEV-10613864  
 Branch:  EDM  GP  FN  FM  RD  VAN  LYD  FSJ  EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No  
 Custody Seal Intact: Yes No  NA  
 TAT: <24hr 24-48hr 48-72hr  Reg Other \_\_\_\_\_  
 Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No  
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\*  
 Earliest Expiry: \_\_\_\_\_  
 Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No  
 International Samples: Yes  No  
 Tape Sealed: Yes  No  
 Coolant Used:  Icepack  Bagged Ice  Free Ice  Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 7.8 + 7.8 + 5.4 = 8.0 °C    2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E498490  
 Samples Damaged: Yes  No If YES why?  
 No Bubble Wrap Frozen Courier  
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes No  
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* Subcontracted Analysis (See CPM)



**CANADIAN NORTH**  
C A R G O

**518-YEV-10613864**

|   |  |  |
|---|--|--|
| Shipper's Name and Address<br>Nom et adresse de l'expéditeur  |  | Not negotiable / Non négociable<br><b>Air Waybill / Lettre de transport aérien</b><br>Issued by / Émise par  |
| IEG - Camp Farewell<br>PO Box 1038<br>Inuvik<br>Northwest Territories, Canada<br>403-829-3098<br>Attn: Nicole Wills |  | Canadian North; 101 3731 52 Ave E,<br>Edmonton International Airport, AB,<br>Canada, T9E0V4  |
|   |  | Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.<br>Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité. |

|  |  |   |
|--|--|---|
| Consignee's Name and Address<br>Nom et adresse du destinataire   |  | It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR. |
| AGAT Laboratories Ltd<br>6310 Roper Road NW<br>Edmonton<br>Alberta, Canada<br>T6E 6S4 780 395 2525<br>Attn: Chantal Seeney |  |   |

|   |  |   |                 |
|---|--|---|-----------------|
| Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur  | Accounting Information / Renseignements comptables |   | <b>KLO100CW</b> |
| Agent's IATA Code / Code IATA de l'agent  | Account Number / Numéro de compte                  | IEG Consultants Ltd.<br>500 - 2618 Hopewell Place NE<br>Calgary<br>AB, Canada<br>T1Y 7J7<br>PO: |                 |
| Airport of Departure (Address of First Carrier) and Requested Routing<br>Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé |  | <b>Inuvik</b>   |                 |

|   |   |   |          |                         |            |                                   |                                 |                |              |  |  |
|---|---|---|----------|-------------------------|------------|-----------------------------------|---------------------------------|----------------|--------------|--|--|
| To / à<br><b>YEG</b>  | By first carrier / Par premier transport<br><b>CANADIAN NORTH</b> | To / à  | by / par | To / à                  | by / par   | Currency<br>Monnaie<br><b>CDN</b> | CHGS<br>Code Frais<br><b>PX</b> | WT / Poids-Vol | Other/Autres | Declared Value for Carriage<br>Valeur déclarée pour la transport | Declared value for Customs<br>Valeur déclarée pour la douane |
| Airport of Destination / Aéroport de destination<br><b>Edmonton</b>   |   | Flight Date - For Carrier Use Only<br>Vol. Date - Réserve au Transporteur |          | PPD<br>Payé<br><b>X</b> | COLL<br>Du | PPD<br>Payé<br><b>X</b>           | COLL<br>Du                      | <b>NDV</b>     | <b>NCV</b>   | Amount of Insurance<br>Montant de l'assurance                    |  |
| INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance"<br>ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance" |   |   |          |                         |            |                                   |                                 |                |              |  |  |

|   |  |            |
|---|--|------------|
| Handling Information / Renseignements pour le traitement de l'expédition<br><b>H4PU</b><br><b>Keep cool</b> |  | <b>SCI</b> |
|---|--|------------|

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut | kg<br>lb | Chargeable<br>Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total | Commodity Item<br>No.<br>No. d'article de<br>la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|----------------------------|----------|---|----------------------------------|-----------|-------|---|---|
| 1                                       | K                          | K        | 12  |                                  |           |       | GAD   | Soil Samples 60cm x 33cm x 35cm   |
| 1                                       | 12                         |          | 12  |                                  |           |       |   |   |

|   |  |                              |
|---|--|------------------------------|
| Weight Charge<br>Prepaid / Porte payé   | Taxation au poids<br>Collect / Port dû | Other Charges / Autres frais |
| Valuation Charge  | Taxation à la valeur                   |                              |
| Tax   | Taxe                                   |                              |
| Total other Charges Due Agent   | Total des autres frais dûs à l'agent   |                              |
| Total other Charges Due Carrier   | Total des autres frais dûs au          |                              |
| Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent |  |                              |
| Total Prepaid / Total port payé   | Total collect / Total port dû          |                              |

|                        |                  |   |
|------------------------|------------------|---|
| 27 Jul 2019            |                  | YEV   |
| Executed on<br>Fait le | (Date)<br>(Date) | at<br>à   |
|                        |                  | (Place)<br>(Lieu)   |
|                        |                  | Signature of issuing Carrier or its Agent<br>Signature du Transporteur émetteur ou de son Agent |

|   |  |                                  |
|---|--|----------------------------------|
| For Carrier's User only at Destination<br>Réserve au transporteur à destination | Charges at Destination / Frais à l'arrivée | Total Collect Charges / Total Du |
|---|--|----------------------------------|

**518-YEV-10613864**

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E500744

TRACE ORGANICS REVIEWED BY: Melinda Guay, Technical Reviewer

DATE REPORTED: Aug 08, 2019

PAGES (INCLUDING COVER): 23

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E500744

PROJECT: A04012A11

6310 ROPER ROAD  
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CANADA T6B 3P9  
TEL (780)395-2525  
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<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |       | TP19-037B  | TP19-037U  | TP19-038A  | TP19-038B  | TP19-038U  | EX19-057   | EX19-058   | EX19-059   |            |
|--------------------------------|-------|---------------------|-------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |       | 2019-07-27 | 2019-07-27 | 2019-07-27 | 2019-07-27 | 2019-07-27 | 2019-07-28 | 2019-07-28 | 2019-07-28 | 2019-07-28 |
|                                |       | G / S               | RDL   | 405720     | 405757     | 405758     | 405759     | 405760     | 405761     | 405762     | 405763     |            |
| Benzene                        | mg/kg | 0.005               | 0.007 | 0.157      | <0.005     | 0.117      | 2.21       | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | <0.05 | 0.08       | <0.05      | 0.28       | 9.99       | 0.09       | <0.05      | <0.05      | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | 0.04  | 0.99       | 0.01       | 0.87       | 8.10       | 0.06       | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | 0.22  | 2.18       | 0.08       | 2.85       | 67.1       | 0.17       | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10   | <10        | <10        | 460        | 4260       | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10   | <10        | <10        | 460        | 4170       | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 80    | 20         | <10        | 2680       | 31700      | 130        | 250        | 340        | 340        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 20    | 40         | <10        | 990        | 6580       | 140        | 180        | 190        | 190        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | <10   | 20         | <10        | 120        | 160        | 30         | 50         | 50         | 50         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A   | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 11    | 19         | 5          | 7          | 25         | 11         | 10         | 9          | 9          |            |
| Surrogate                      | Unit  | Acceptable Limits   |       |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 105   | 104        | 104        | 111        | 109        | 103        | 105        | 105        | 103        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 98    | 95         | 93         | 97         | 95         | 92         | 96         | 96         | 102        |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 89    | 87         | 92         | 102        | 137        | 94         | 96         | 96         | 91         |            |

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## Certificate of Analysis

AGAT WORK ORDER: 19E500744

PROJECT: A04012A11

6310 ROPER ROAD  
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<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-060   | EX19-061   | EX19-062   | EX19-063   | EX19-064   | EX19-065   | TP19-039A  | TP19-039B  |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-28 | 2019-07-28 | 2019-07-28 | 2019-07-28 | 2019-07-28 | 2019-07-28 | 2019-07-28 | 2019-07-29 | 2019-07-29 |
|                                |       | G / S               | RDL    | 405764     | 405765     | 405766     | 405767     | 405768     | 405769     | 405770     | 405771     |            |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | <0.05  | 0.06       | <0.05      | <0.05      | <0.05      | 0.29       | <0.05      | <0.05      | 1.68       |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | 1.75       |            |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | 0.07       | <0.05      | <0.05      | 6.64       |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | 20     | <10        | <10        | <10        | <10        | <10        | <10        | <10        | 270        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | 20     | <10        | <10        | <10        | <10        | <10        | <10        | <10        | 260        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 270    | 300        | 20         | 80         | 1070       | 180        | <10        | <10        | 2470       |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 270    | 270        | 60         | 130        | 960        | 240        | <10        | <10        | 510        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 60     | 70         | 20         | 20         | 150        | 60         | 10         | 10         | 30         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 11     | 9          | 5          | 6          | 22         | 9          | 5          | 5          | 6          |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 106    | 104        | 103        | 104        | 104        | 103        | 103        | 104        | 110        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 109    | 106        | 92         | 88         | 112        | 95         | 80         | 80         | 106        |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 95     | 96         | 90         | 88         | 95         | 108        | 94         | 94         | 102        |            |

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AGAT WORK ORDER: 19E500744

PROJECT: A04012A11

6310 ROPER ROAD  
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<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |      | TP19-039U  | TP19-039D  | TP19-040A  | TP19-040B  | TP19-041A  | TP19-041B  | TP19-041U  | TP19-042A  |
|--------------------------------|-------|---------------------|------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |      | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |      | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 |
|                                |       | G / S               | RDL  | 405772     | 405773     | 405774     | 405775     | 405776     | 405777     | 405778     | 405779     |
| Benzene                        | mg/kg | 0.005               | 1.99 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | 5.58 | 0.31       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.05       | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | 0.14 | 0.57       | <0.01      | 0.06       | <0.01      | 1.10       | 0.33       | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | 0.44 | 2.01       | <0.05      | 1.05       | <0.05      | 0.87       | 1.12       | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | 10   | 100        | <10        | 112        | <10        | 40         | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10  | 100        | <10        | 110        | <10        | 40         | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 60   | 1540       | 280        | 3290       | 470        | 2080       | 110        | 190        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 680  | 400        | 360        | 1650       | 1150       | 2720       | 230        | 740        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 320  | 20         | 40         | 60         | 80         | 60         | 80         | 50         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A  | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 24   | 6          | 5          | 4          | 6          | 5          | 41         | 6          |            |
| Surrogate                      | Unit  | Acceptable Limits   |      |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 105  | 109        | 101        | 104        | 100        | 101        | 102        | 99         |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 91   | 100        | 84         | 105        | 94         | 81         | 91         | 74         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 94   | 88         | 89         | 106        | 99         | 86         | 91         | 89         |            |

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## Certificate of Analysis

AGAT WORK ORDER: 19E500744

PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |       | TP19-042U  | EX19-066   | EX19-067   | EX19-068   | WR1-001    | WR1-002    | WR1-003    | WR1-004    |            |
|--------------------------------|-------|---------------------|-------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |       | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 |
|                                |       | G / S               | RDL   | 405780     | 405781     | 405782     | 405783     | 405784     | 405785     | 405786     | 405787     |            |
| Benzene                        | mg/kg | 0.005               | 0.034 | 0.006      | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | 0.29  | 0.21       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | 0.42  | 0.09       | 0.03       | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | 1.72  | 0.48       | 0.17       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10   | 60         | <10        | <10        | <10        | 30         | 20         | 10         | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10   | 60         | <10        | <10        | <10        | 30         | 20         | 10         | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 380   | 770        | <10        | <10        | <10        | 330        | 320        | 380        | 280        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 1020  | 1060       | 30         | <10        | <10        | 990        | 920        | 1160       | 1010       |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 270   | 140        | 20         | 10         | 10         | 320        | 290        | 360        | 330        |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A   | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 56    | 19         | 10         | 19         | 5          | 5          | 6          | 6          | 6          |            |
| Surrogate                      | Unit  | Acceptable Limits   |       |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 100   | 101        | 101        | 100        | 100        | 100        | 101        | 102        | 101        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 117   | 94         | 93         | 104        | 73         | 76         | 77         | 77         | 65         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 93    | 95         | 83         | 85         | 77         | 83         | 77         | 77         | 83         |            |

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## Certificate of Analysis

AGAT WORK ORDER: 19E500744

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
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<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR1-005    | WR2-001    | WR2-002    | WR2-003    | WR2-004    | WR2-005    | WR3-001    | WR3-002    |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 |
|                                |       | G / S               | RDL    | 405788     | 405789     | 405790     | 405791     | 405792     | 405793     | 405794     | 405795     |            |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.06       |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | 10         | <10        | 20         | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | 10         | <10        | 20         | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 350    | 830        | 650        | 640        | 580        | 770        | 20         | 100        | 100        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 920    | 340        | 250        | 230        | 180        | 320        | 140        | 270        | 270        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 270    | 110        | 80         | 70         | 50         | 100        | 70         | 110        | 110        |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 5      | 15         | 16         | 16         | 15         | 14         | 13         | 15         | 15         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101    | 101        | 101        | 100        | 101        | 101        | 101        | 101        | 100        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 78     | 92         | 100        | 83         | 78         | 96         | 87         | 80         | 80         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 71     | 86         | 88         | 92         | 73         | 90         | 84         | 100        | 100        |            |

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AGAT WORK ORDER: 19E500744

PROJECT: A04012A11

6310 ROPER ROAD  
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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR3-003    | WR3-004    | WR3-005    | WR3-006    | WR4-001    | WR4-002    | WR4-003    | WR4-004    |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 |
|                                |       | G / S               | RDL    | 405796     | 405797     | 405798     | 405799     | 405800     | 405801     | 405802     | 405803     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.05       |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.06       |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 80     | 20         | 70         | 30         | 80         | 150        | 270        | 520        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 200    | 140        | 210        | 130        | 200        | 310        | 350        | 490        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 80     | 70         | 80         | 60         | 40         | 70         | 60         | 70         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 14     | 14         | 13         | 12         | 9          | 8          | 7          | 11         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 99     | 100        | 99         | 100        | 99         | 100        | 100        | 100        | 99         |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 94     | 75         | 66         | 68         | 72         | 66         | 63         | 74         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 86     | 86         | 87         | 91         | 95         | 96         | 100        | 105        |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            | WR4-005    | WR4-006    | WR4-007    | WR4-008    | WR5-001    | WR5-002    | WR5-003    | WR5-004    |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | G / S               | RDL        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
| DATE SAMPLED:                  |       | 2019-07-29          | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 |
| Benzene                        | mg/kg | 0.005               | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05      | 0.08       | <0.05      | <0.05      | <0.05      | <0.05      | 0.15       | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | 0.02       | <0.01      | 0.02       | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05      | 0.09       | <0.05      | <0.05      | <0.05      | 0.26       | <0.05      | 0.09       | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 250        | 310        | 220        | 350        | 290        | 380        | 400        | 400        | 320        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 350        | 410        | 400        | 500        | 480        | 550        | 640        | 640        | 440        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 60         | 70         | 100        | 100        | 110        | 130        | 140        | 140        | 90         |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 8          | 9          | 9          | 9          | 9          | 9          | 14         | 13         | 11         |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101        | 101        | 101        | 100        | 100        | 101        | 101        | 101        | 101        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 73         | 76         | 70         | 74         | 68         | 84         | 68         | 68         | 69         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 100        | 94         | 92         | 99         | 88         | 87         | 97         | 97         | 95         |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            |            |            |            |            |            |            |            |            |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | G / S               |            | WR5-005    | WR5-R005   | WR6-001    | WR6-002    | WR6-003    | WR6-004    | WR6-005    | WR6-006    |
|                                |       | RDL                 | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 |
| Benzene                        | mg/kg | 0.005               | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | 0.06       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | 0.07       | <0.05      | 0.05       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 330        | 320        | 200        | 170        | 220        | 190        | 160        | 170        | 170        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 430        | 480        | 280        | 250        | 260        | 350        | 280        | 220        | 220        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 80         | 110        | 60         | 80         | 80         | 100        | 80         | 40         | 40         |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 11         | 13         | 11         | 9          | 11         | 12         | 10         | 10         | 10         |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101        | 101        | 101        | 100        | 100        | 100        | 99         | 103        | 103        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 71         | 83         | 71         | 63         | 72         | 67         | 73         | 78         | 78         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 91         | 98         | 92         | 85         | 92         | 89         | 91         | 70         | 70         |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR7-001    | WR7-002    | WR7-003    | WR7-004    | WR7-005    | WR7-R005   | EX19-069   | EX19-070   |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-29 | 2019-07-30 | 2019-07-30 |
|                                |       | G / S               | RDL    | 405820     | 405821     | 405822     | 405823     | 405824     | 405825     | 405826     | 405827     |            |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | 0.014      | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | <0.05  | 0.06       | 0.05       | <0.05      | <0.05      | <0.05      | 0.06       | 5.59       | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | 0.01       | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 70     | 90         | 50         | 50         | 60         | 60         | 60         | 20         | 20         |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 300    | 410        | 260        | 260        | 220        | 270        | 270        | 780        | 140        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 90     | 120        | 80         | 80         | 60         | 80         | 80         | 300        | 60         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 17     | 22         | 16         | 14         | 20         | 20         | 20         | 30         | 11         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 104    | 104        | 104        | 104        | 104        | 104        | 104        | 104        | 104        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 83     | 81         | 82         | 80         | 81         | 81         | 81         | 93         | 79         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 68     | 68         | 75         | 67         | 67         | 72         | 72         | 76         | 71         |            |

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AGAT WORK ORDER: 19E500744

PROJECT: A04012A11

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-071   | EX19-072   | EX19-073   | EX19-074   | EX19-075   | EX19-076   | EX19-077   | EX19-078   |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-07-30 | 2019-07-30 | 2019-07-30 | 2019-07-30 | 2019-07-30 | 2019-07-30 | 2019-07-30 | 2019-07-30 |
|                                |       | G / S               | RDL    | 405828     | 405829     | 405830     | 405831     | 405832     | 405833     | 405834     | 405835     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | 0.119      | 0.301      | <0.005     |
| Toluene                        | mg/kg | 0.05                | 0.12   | 0.06       | <0.05      | <0.05      | <0.05      | 0.17       | 5.03       | 5.96       | 0.10       |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | 0.26       | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.96       | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | 20         | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | 10         | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 140    | 70         | <10        | <10        | <10        | 150        | 30         | 40         | 280        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 810    | 380        | 40         | 20         | 140        | 140        | 980        | 400        | 780        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 280    | 140        | 20         | <10        | <10        | <10        | 380        | 150        | 160        |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 28     | 19         | 18         | 13         | 32         | 27         | 27         | 39         | 30         |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 104    | 104        | 104        | 104        | 103        | 104        | 104        | 104        | 103        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 92     | 80         | 83         | 78         | 98         | 93         | 93         | 102        | 92         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 82     | 71         | 68         | 68         | 63         | 77         | 77         | 84         | 77         |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |       | EX19-079   | EX19-080   | EX19-081   | EX19-082   | EX19-083   | EX19-084   | EX19-R084  | EX19-085   |
|--------------------------------|-------|---------------------|-------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |       | 2019-07-30 | 2019-07-30 | 2019-07-30 | 2019-07-30 | 2019-07-30 | 2019-07-30 | 2019-07-30 | 2019-07-30 |
|                                |       | G / S               | RDL   | 405836     | 405837     | 405838     | 405839     | 405840     | 405841     | 405842     | 405843     |
| Benzene                        | mg/kg | 0.005               | 0.123 | 0.169      | <0.005     | 0.015      | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | 1.79  | 1.36       | <0.05      | <0.05      | 3.28       | 0.08       | 0.06       | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | 0.25  | 0.19       | 0.01       | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | 1.13  | 0.46       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10   | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10   | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 20    | 40         | 150        | <10        | 10         | 200        | 160        | 250        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 200   | 680        | 390        | 20         | 710        | 490        | 370        | 220        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 70    | 270        | 90         | <10        | 350        | 180        | 120        | 20         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A   | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 17    | 21         | 25         | 15         | 24         | 39         | 26         | 9          |            |
| Surrogate                      | Unit  | Acceptable Limits   |       |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 104   | 104        | 103        | 104        | 103        | 103        | 102        | 102        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 74    | 83         | 81         | 70         | 101        | 106        | 97         | 90         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 73    | 73         | 74         | 65         | 96         | 103        | 96         | 106        |            |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E500744

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-01

DATE REPORTED: 2019-08-08

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

405720-405843

Results are based on the dry weight of the sample.  
 The C6-C10 (F1) fraction is calculated using toluene response factor.  
 The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
 Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
 Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
 Quality control data is available upon request.  
 Assistance in the interpretation of data is available upon request.  
 This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
 nC6 and nC10 response factors are within 30% of Toluene response factor.  
 nC10, nC16 and nC34 response factors are within 10% of their average.  
 C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
 Linearity is within 15%.  
 The chromatogram returned to baseline by the retention time of nC50.  
 Extraction and holding times were met for this sample.  
 C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
 Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:



## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E500744

PROJECT: A04012A11

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

| Trace Organics Analysis |       |           |           |        |     |                |              |                    |       |          |                    |       |              |                   |
|-------------------------|-------|-----------|-----------|--------|-----|----------------|--------------|--------------------|-------|----------|--------------------|-------|--------------|-------------------|
| RPT Date: Aug 08, 2019  |       |           | DUPLICATE |        |     |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       | MATRIX SPIKE |                   |
| PARAMETER               | Batch | Sample Id | Dup #1    | Dup #2 | RPD | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery     | Acceptable Limits |
|                         |       |           |           |        |     |                | Lower        | Upper              | Lower |          | Upper              | Lower |              | Upper             |

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

|                  |      |        |       |       |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|-------|-------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 1963 | 405760 | 2.21  | 2.25  | 2.0%  | < 0.005 | 101% | 80% | 120% | 100% | 80% | 120% | 92%  | 60% | 140% |
| Toluene          | 1963 | 405760 | 9.99  | 10.1  | 1.0%  | < 0.05  | 103% | 80% | 120% | 103% | 80% | 120% | 94%  | 60% | 140% |
| Ethylbenzene     | 1963 | 405760 | 8.10  | 8.00  | 1.2%  | < 0.01  | 108% | 80% | 120% | 116% | 80% | 120% | 106% | 60% | 140% |
| Xylenes          | 1963 | 405760 | 67.1  | 66.3  | 1.2%  | < 0.05  | 111% | 80% | 120% | 93%  | 80% | 120% | 85%  | 60% | 140% |
| C6 - C10 (F1)    | 1963 | 405760 | 4260  | 4290  | 0.7%  | < 10    | 102% | 80% | 120% | 83%  | 80% | 120% | 82%  | 60% | 140% |
| C10 - C16 (F2)   | 1217 | 405760 | 31700 | 25700 | 20.9% | < 10    | 103% | 80% | 120% | 112% | 80% | 120% | 96%  | 60% | 140% |
| C16 - C34 (F3)   | 1217 | 405760 | 6580  | 5070  | 25.9% | < 10    | 109% | 80% | 120% | 102% | 80% | 120% | 91%  | 60% | 140% |
| C34 - C50 (F4)   | 1217 | 405760 | 160   | 130   | 20.7% | < 10    | 102% | 80% | 120% | 111% | 80% | 120% | 128% | 60% | 140% |
| Moisture Content | 1217 | 405760 | 25    | 24    | 4.1%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 2108 | 405777 | <0.005 | <0.005 | NA    | < 0.005 | 94%  | 80% | 120% | 93%  | 80% | 120% | 102% | 60% | 140% |
| Toluene          | 2108 | 405777 | <0.05  | <0.05  | NA    | < 0.05  | 94%  | 80% | 120% | 94%  | 80% | 120% | 103% | 60% | 140% |
| Ethylbenzene     | 2108 | 405777 | 1.10   | 1.22   | 10.3% | < 0.01  | 98%  | 80% | 120% | 93%  | 80% | 120% | 108% | 60% | 140% |
| Xylenes          | 2108 | 405777 | 0.87   | 0.95   | 8.8%  | < 0.05  | 109% | 80% | 120% | 100% | 80% | 120% | 117% | 60% | 140% |
| C6 - C10 (F1)    | 2108 | 405777 | 40     | 50     | NA    | < 10    | 101% | 80% | 120% | 105% | 80% | 120% | 95%  | 60% | 140% |
| C10 - C16 (F2)   | 1500 | 405789 | 830    | 820    | 1.2%  | < 10    | 96%  | 80% | 120% | 99%  | 80% | 120% | 105% | 60% | 140% |
| C16 - C34 (F3)   | 1500 | 405789 | 340    | 310    | 9.2%  | < 10    | 102% | 80% | 120% | 95%  | 80% | 120% | 97%  | 60% | 140% |
| C34 - C50 (F4)   | 1500 | 405789 | 110    | 100    | 9.5%  | < 10    | 107% | 80% | 120% | 90%  | 80% | 120% | 92%  | 60% | 140% |
| Moisture Content | 1500 | 405789 | 15     | 13     | 14.3% | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

|                  |      |        |        |        |       |         |      |     |      |     |     |      |     |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|-----|-----|------|-----|-----|------|
| Benzene          | 2110 | 405798 | <0.005 | <0.005 | NA    | < 0.005 | 97%  | 80% | 120% | 84% | 80% | 120% | 88% | 60% | 140% |
| Toluene          | 2110 | 405798 | <0.05  | <0.05  | NA    | < 0.05  | 96%  | 80% | 120% | 83% | 80% | 120% | 87% | 60% | 140% |
| Ethylbenzene     | 2110 | 405798 | <0.01  | <0.01  | NA    | < 0.01  | 93%  | 80% | 120% | 84% | 80% | 120% | 82% | 60% | 140% |
| Xylenes          | 2110 | 405798 | <0.05  | <0.05  | NA    | < 0.05  | 100% | 80% | 120% | 86% | 80% | 120% | 88% | 60% | 140% |
| C6 - C10 (F1)    | 2110 | 405798 | <10    | <10    | NA    | < 10    | 109% | 80% | 120% | 81% | 80% | 120% | 76% | 60% | 140% |
| C10 - C16 (F2)   | 1524 | 405800 | 80     | 90     | 11.8% | < 10    | 99%  | 80% | 120% | 94% | 80% | 120% | 89% | 60% | 140% |
| C16 - C34 (F3)   | 1524 | 405800 | 200    | 220    | 9.5%  | < 10    | 106% | 80% | 120% | 86% | 80% | 120% | 83% | 60% | 140% |
| C34 - C50 (F4)   | 1524 | 405800 | 40     | 50     | NA    | < 10    | 99%  | 80% | 120% | 92% | 80% | 120% | 88% | 60% | 140% |
| Moisture Content | 1524 | 405800 | 9      | 10     | 10.5% | < 1     |      |     |      |     |     |      |     |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

|              |      |        |        |        |    |         |      |     |      |     |     |      |     |     |      |
|--------------|------|--------|--------|--------|----|---------|------|-----|------|-----|-----|------|-----|-----|------|
| Benzene      | 1964 | 405819 | <0.005 | <0.005 | NA | < 0.005 | 108% | 80% | 120% | 87% | 80% | 120% | 89% | 60% | 140% |
| Toluene      | 1964 | 405819 | <0.05  | <0.05  | NA | < 0.05  | 108% | 80% | 120% | 88% | 80% | 120% | 90% | 60% | 140% |
| Ethylbenzene | 1964 | 405819 | <0.01  | <0.01  | NA | < 0.01  | 113% | 80% | 120% | 96% | 80% | 120% | 97% | 60% | 140% |

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E500744  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

### Trace Organics Analysis (Continued)

| RPT Date: Aug 08, 2019 |       |           | DUPLICATE |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|------------------------|-------|-----------|-----------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER              | Batch | Sample Id | Dup #1    | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|                        |       |           |           |        |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Xylenes                | 1964  | 405819    | <0.05     | <0.05  | NA    | < 0.05         | 111%         | 80%                | 120%  | 80%      | 80%                | 120%  | 81%      | 60%               | 140%  |  |
| C6 - C10 (F1)          | 1964  | 405819    | <10       | <10    | NA    | < 10           | 107%         | 80%                | 120%  | 91%      | 80%                | 120%  | 105%     | 60%               | 140%  |  |
| C10 - C16 (F2)         | 1084  | 405839    | < 10      | < 10   | NA    | < 10           | 83%          | 80%                | 120%  | 93%      | 80%                | 120%  | 99%      | 60%               | 140%  |  |
| C16 - C34 (F3)         | 1084  | 405839    | 20        | 20     | NA    | < 10           | 80%          | 80%                | 120%  | 94%      | 80%                | 120%  | 101%     | 60%               | 140%  |  |
| C34 - C50 (F4)         | 1084  | 405839    | < 10      | < 10   | NA    | < 10           | 92%          | 80%                | 120%  | 90%      | 80%                | 120%  | 97%      | 60%               | 140%  |  |
| Moisture Content       | 1084  | 405838    | 21        | 25     | 17.4% | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

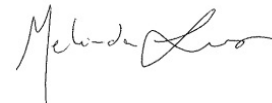
Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 1963 | 405841 | <0.005 | <0.005 | NA    | < 0.005 | 101% | 80% | 120% | 85%  | 80% | 120% | 108% | 60% | 140% |
| Toluene          | 1963 | 405841 | 0.09   | 0.08   | NA    | < 0.05  | 103% | 80% | 120% | 86%  | 80% | 120% | 98%  | 60% | 140% |
| Ethylbenzene     | 1963 | 405841 | <0.01  | <0.01  | NA    | < 0.01  | 108% | 80% | 120% | 91%  | 80% | 120% | 114% | 60% | 140% |
| Xylenes          | 1963 | 405841 | 0.07   | <0.05  | NA    | < 0.05  | 111% | 80% | 120% | 81%  | 80% | 120% | 91%  | 60% | 140% |
| C6 - C10 (F1)    | 1963 | 405841 | <10    | <10    | NA    | < 10    | 102% | 80% | 120% | 85%  | 80% | 120% | 109% | 60% | 140% |
| C10 - C16 (F2)   | 1499 | 411501 | 1050   | 1490   | 34.6% | < 10    | 98%  | 80% | 120% | 113% | 80% | 120% | 112% | 60% | 140% |
| C16 - C34 (F3)   | 1499 | 411501 | 610    | 760    | 21.9% | < 10    | 103% | 80% | 120% | 109% | 80% | 120% | 109% | 60% | 140% |
| C34 - C50 (F4)   | 1499 | 411501 | 60     | 80     | 28.6% | < 10    | 106% | 80% | 120% | 107% | 80% | 120% | 105% | 60% | 140% |
| Moisture Content | 1499 | 411501 | 21     | 22     | 4.7%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E500744

PROJECT: A04012A11

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |



# AGAT Laboratories

2910 12 Street NE

Calgary, Alberta T2E 7P7

P: 403-735-2005 • F: 403-735-2771

webearth.agatlabs.com

## Laboratory Use Only

Arrival Temperature: \_\_\_\_\_

AGAT Job Number: 19E500744

Date and Time: '19AUG 1 9:52

## Chain of Custody Record

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

### Report Information

Company: IEG Consultants  
 Contact: Kyle Schepanow  
 Address: 500 - 2618 Hopewell Place  
Calgary, AB T1Y 4R4 7J7  
 Phone: 403-648-4292 Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: A04012A11

### Report Information

1. Name: Stephanie Hannem  
 Email: shannem@klohn.com  
 2. Name: Kim Mackenzie  
 Email: kmackenzie@klohn.com  
 3. Name: Kyle Schepanow  
 Email: kschepanow@klohn.com

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Rush TAT  Three Day (50%)  
 Four Day (25%)

SEE BACK FOR SURCHARGE BREAKDOWN. CONTACT YOUR CPM FOR ADDITIONAL INFORMATION

Date Required: \_\_\_\_\_

Sampled By: \_\_\_\_\_

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: \_\_\_\_\_  
 Standing Offer #: 102019-001

### Requirements (Selection may impact detection limits)

CCME  AB Tier 1  
 Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  Acute

### Report Format

Single  Sample Per Page  
 Multiple  Samples Per Page  
 Export

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION   | DEPTH | DATE/TIME SAMPLED  | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         | Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input type="checkbox"/> CCME/AB : BTEX/F1-F4 <input type="checkbox"/> CCME/AB : BTEX/F1-F2 | <input type="checkbox"/> BC: BTEX/VPH/EPH <input type="checkbox"/> BC: LEPH/HEPH | SK: BTEX/TVH/C11-C22, C23-C60 | Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Routine Water Chemistry | Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture | HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee) | HOLD FOR 30 DAYS AFTER ANALYSIS (Additional Fee) |
|---------------------------|-------------------------|-------|--------------------|---------------|--|-----------------|------|---------|---|---|--|-------------------------------|---|---|-------------------------|---|--|---|---|--|
|                           |                         |       |                    |               |  | VIALS / JARS    | BAGS | BOTTLES |   |   |  |                               |   |   |                         |   |  |   |   |  |
| 1                         | <u>405720 TP19-037B</u> |       | <u>JULY 27 /19</u> | <u>SOIL</u>   |  |                 |      |         | <input checked="" type="checkbox"/>   |   |  |                               |   |   |                         |   |  |   |   |  |
| 2                         | <u>757 TP19-0374</u>    |       |                    |               |  |                 |      |         | <input checked="" type="checkbox"/>   |   |  |                               |   |   |                         |   |  |   |   |  |
| 3                         | <u>758 TP19-038A</u>    |       |                    |               |  |                 |      |         | <input checked="" type="checkbox"/>   |   |  |                               |   |   |                         |   |  |   |   |  |
| 4                         | <u>759 TP19-038B</u>    |       |                    |               |  |                 |      |         | <input checked="" type="checkbox"/>   |   |  |                               |   |   |                         |   |  |   |   |  |
| 5                         | <u>760 TP19-0384</u>    |       |                    |               |  |                 |      |         | <input checked="" type="checkbox"/>   |   |  |                               |   |   |                         |   |  |   |   |  |
| 6                         | <u>761 EX19-057</u>     |       |                    |               |  |                 |      |         | <input checked="" type="checkbox"/>   |   |  |                               |   |   |                         |   |  |   |   |  |
| 7                         | <u>762 EX19-058</u>     |       |                    |               |  |                 |      |         | <input checked="" type="checkbox"/>   |   |  |                               |   |   |                         |   |  |   |   |  |
| 8                         | <u>763 EX19-059</u>     |       |                    |               |  |                 |      |         | <input checked="" type="checkbox"/>   |   |  |                               |   |   |                         |   |  |   |   |  |
| 9                         | <u>764 EX19-060</u>     |       |                    |               |  |                 |      |         | <input checked="" type="checkbox"/>   |   |  |                               |   |   |                         |   |  |   |   |  |
| 10                        | <u>765 EX19-061</u>     |       |                    |               |  |                 |      |         | <input checked="" type="checkbox"/>   |   |  |                               |   |   |                         |   |  |   |   |  |

Samples Relinquished By (Print Name and Sign):  
Stephanie Hannem *[Signature]*  
 Date/Time: July 30/19 17:00

Samples Received By (Print Name and Sign):  
Jason Trautman *[Signature]*  
 Date/Time: 1 Aug 19 09:52

Pink Copy - Client  
 Yellow Copy - AGAT  
 White Copy - AGAT

Page 1 of 5  
 NO: AB **090066**



## Chain of Custody Record

P: 403.735.2005 • F: 403.735.2771

### Report to:

Company: IEG Consultants

Same as COC#: 090066

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | SAMPLE MATRIX | DATE/TIME SAMPLED | COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT | # OF CONTAINERS | Detailed Soil Salinity (Saturated Paste) | CCME BTEX/F1-F4 | Soil Metals <input type="checkbox"/> HWS-B <input type="checkbox"/> Cr <sup>6</sup> <input type="checkbox"/> Hg | Water Metals <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg | Routine Water Potability | AB Class 2 Landfill | BC Landfill | D50 Detailed Soil Salinity (As Received) | Microtox | BTEXS/VPH/EPH <input type="checkbox"/> LEPH/HEPH <input type="checkbox"/> |  |  |
|---------------------------|-----------------------|---------------|-------------------|---|-----------------|--|-----------------|---|--|--------------------------|---------------------|-------------|--|----------|---|--|--|
| 766                       | EX19-062              | JULY 28/19    | SOIL              |   | 1               |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 767                       | EX19-063              | ↓             | ↓                 |   | 1               |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 768                       | EX19-064              |               |                   |   | 1               |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 769                       | EX19-065              |               |                   |   | 1               |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 770                       | TP19-039A             |               |                   |   | JULY 29/19      |  |                 | 1   |  |                          |                     |             |  |          |   |  |  |
| 771                       | TP19-039B             |               |                   |   | 1               |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 772                       | TP19-0394             |               |                   |   | 1               |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 773                       | TP19-039D             |               |                   |   | 1               |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 774                       | TP19-040A             |               |                   |   | 1               |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 775                       | TP19-040B             |               |                   |   | 1               |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 776                       | TP19-041A             |               |                   |   | 1               |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 777                       | TP19-041B             | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 778                       | TP19-0414             | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 779                       | TP19-042A             | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 780                       | TP19-042U             | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 781                       | EX19-066              | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 782                       | EX19-067              | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 783                       | EX19-068              | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 784                       | WR1-001               | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 785                       | WR1-002               | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 786                       | WR1-003               | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 787                       | WR1-004               | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 788                       | WR1-005               | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 789                       | WR2-001               | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |
| 790                       | WR2-002               | 1             |                   |   |                 |  |                 |   |  |                          |                     |             |  |          |   |  |  |

19 AUG 1 9:52

HOLD FOR 60 DAYS  
PRESERVED (Y/N)  
CONTAMINATED/HAZARDOUS (Y/N)

Samples Relinquished By (Print Name and Sign):  
Stephanie Hannem

Date/Time  
JULY 30/19 17:00

Samples Received By (Print Name and Sign):  
J. Trasmuk

Date/Time  
1 Aug 19 09:52H

Pink Copy - Client  
Yellow Copy - AGAT  
White Copy - AGAT

Page 2 of 5  
Nº: AB **039577** A









10°C

### RECEIVING BASICS - Shipping

Company/Consultant: IEG  
 Courier: Canadian North Cargo Prepaid Collect  
 Waybill# 518-YEV-10616701  
 Branch:  EDM  GP  FN  FM  RD  VAN  LYD  FSJ  EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No

Custody Seal Intact: Yes  No  NA  
 TAT: <24hr  24-48hr  48-72hr  Reg  Other \_\_\_\_\_  
 Cooler Quantity: 3

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No   
 Inorganic Tests (Please Circle): Mibi, BOD, Nitrate/Nitrite, Turbidity, Microtox, Ortho PO4, Tedlar Bag, Residual Chlorine, Chlorophyll\*, Chloroamines\*  
 Earliest Expiry: X  
 Hydrocarbons: Earliest Expiry Tenacore

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No   
 International Samples: Yes  No   
 Tape Sealed: Yes  No   
 Coolant Used: Icepack  Bagged Ice  Free Ice  Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 10.1 + 9.8 + 9.6 = 9.8 °C    2 (Bottle/Jar) 10.4 + 10.1 + 10.3 = 10.3 °C  
 3 (Bottle/Jar) 9.9 + 9.4 + 10.1 = 9.8 °C    4 (Bottle/Jar) \_\_\_\_\_ °C  
 5 (Bottle/Jar) \_\_\_\_\_ °C    6 (Bottle/Jar) \_\_\_\_\_ °C  
 7 (Bottle/Jar) \_\_\_\_\_ °C    8 (Bottle/Jar) \_\_\_\_\_ °C  
 9 (Bottle/Jar) \_\_\_\_\_ °C    10 (Bottle/Jar) \_\_\_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E500744  
 Samples Damaged: Yes  No  If YES why?  
 No Bubble Wrap  Frozen  Courier   
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes  No   
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_

\* Subcontracted Analysis (See CPM)



**CANADIAN NORTH**  
C A R G O

**518-YEV-10616701**

|  |   |   |   |
|--|---|---|---|
| Shipper's Name and Address<br>Nom et adresse de l'expéditeur   |   | Not negotiable / Non négociable<br><b>Air Waybill / Lettre de transport aérien</b><br>Issued by / Émise par   |   |
| IEG - Camp Farewell<br>PO Box 1038<br>Inuvik<br>Northwest Territories, Canada<br>403-829-3098<br>Attn: Nicole Wills  |   | Canadian North; 101 3731 52 Ave E,<br>Edmonton International Airport, AB,<br>Canada, T9E0V4   |   |
| Consignee's Name and Address<br>Nom et adresse du destinataire   |   | Copies 1, 2, 3 & 4 of this Air Waybill are original and have the same validity.<br>Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.   |   |
| AGAT Laboratories Ltd<br>6310 Roper Road NW<br>Edmonton<br>Alberta, Canada<br>T6E 6S4 780 395 2525<br>Attn: Chantal Seeney   |   | It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est soumis aux conditions du contrat qui figurent au verso. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QU'ILS NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR. |   |
| Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur   |   | Accounting Information / Renseignements comptables <b>KLO100CW</b>  |   |
| Agent's IATA Code / Code IATA de l'agent   |   | IEG Consultants Ltd.<br>500 - 2618 Hopewell Place NE<br>Calgary<br>AB, Canada<br>T1Y 7J7<br>PO:   |   |
| Airport of Departure (Address of First Carrier) and Requested Routing<br>Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé<br><b>Inuvik</b> |   |   |   |
| To / à<br><b>YEG</b>   | By first carrier / Par premier transport<br><b>CANADIAN NORTH</b> | To / à  | by / par  |
| Airport of Destination / Aéroport de destination<br><b>Edmonton</b>  |   | Flight Date - For Carrier Use Only<br>Vol. Date - Réservé au Transporteur   |   |
| Currency<br>Monnaie<br><b>CDN</b>  | CHGS<br>Code Frais<br><b>PX</b>                                   | WT / Poids-Val.<br>PFD Payé<br>COLL Du<br><b>X</b>  | Other / Autres<br>PFD Payé<br>COLL Du<br><b>X</b> |
| Declared Value for Carriage<br>Valeur déclarée pour la marchandise<br><b>NDV</b>   |   | Declared value for Customs<br>Valeur déclarée pour le douane<br><b>NCV</b>  |   |
| Amount of insurance<br>Montant de l'assurance  |   | INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance".<br>ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer, en chiffres dans la case "Montant de l'assurance".  |   |
| Handling Information / Renseignements pour le traitement de l'expédition<br><b>HFPU</b><br><b>***KEEP COOL***</b>  |   |   |   |
| <b>SCI</b>   |   |   |   |
| No. of Pieces<br>Nombre de colis<br>RCP  | Gross Weight<br>Poids brut  | kg<br>lb  | Chargeable Weight<br>Poids de taxation            |
| 3  | K   | K   | 54  |
| Rate / Charge<br>Tarif / Montant   |   | Interline   |   |
| 54   |   |   |   |
| Total  |   | Commodity Item<br>No. d'article de la marchandise   |   |
| 3  |   | GAD Soil Samples 60cm x 33cm x 108cm  |   |
| Weight Charge<br>Prepaid / Porte payé  |   | Taxation au poids<br>Collect / Port dû  |   |
| Valuation Charge   |   | Taxation à la valeur  |   |
| Tax  |   | Taxe  |   |
| Total other Charges Due Agent  |   | Total des autres frais dûs à l'agent  |   |
| Total other Charges Due Carrier  |   | Total des autres frais dûs au   |   |
| Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent  |   |   |   |
| Total Prepaid / Total port payé  |   | Total collect / Total port dû   |   |
| 31 Jul 2019  |   | YEV   |   |
| Executed on<br>Fait le   | (Date)<br>(Date)  | at<br>à   | (Place)<br>(Lieu)                                 |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination  |   | Charges at Destination / Frais à l'arrivée<br>Total Collect Charges / Total Du  |   |
|  |   | Signature of issuing Carrier or its Agent<br>Signature du Transporteur émetteur ou de son Agent   |   |

**518-YEV-10616701**

Copy 3 - Consignee / Shipper Copy

Track online at [CanadianNorth.com/Cargo/Track](http://CanadianNorth.com/Cargo/Track).

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Accounts Payable

PROJECT: A04012A11

AGAT WORK ORDER: 19E502600

TRACE ORGANICS REVIEWED BY: Ran Ma, Trace Organics Supervisor

DATE REPORTED: Aug 09, 2019

PAGES (INCLUDING COVER): 10

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E502600

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Accounts Payable

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-08

DATE REPORTED: 2019-08-09

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | BH19-122A  | BH19-122B  | BH19-123A  | BH19-123B  | BH19-124A  | BH19-124B  | BH19-125A  | BH19-126A  |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-06 | 2019-08-06 | 2019-08-06 | 2019-08-06 | 2019-08-06 | 2019-08-06 | 2019-08-06 | 2019-08-06 |
|                                |       | G / S               | RDL    | 419825     | 419828     | 419829     | 419830     | 419831     | 419832     | 419833     | 419834     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 1.59       |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | 0.06   | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | 180        | <10        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 30     | 20         | 30         | 30         | 100        | 20         | <10        | 10         | 80         |
| C34 - C50 (F4)                 | mg/kg | 10                  | <10    | <10        | <10        | <10        | 20         | <10        | <10        | <10        | 10         |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 4      | 4          | 5          | 4          | 8          | 6          | 7          | 12         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 100    | 100        | 101        | 100        | 100        | 100        | 100        | 100        | 100        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 77     | 76         | 96         | 74         | 68         | 70         | 73         | 90         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 104    | 88         | 89         | 92         | 105        | 89         | 89         | 93         |            |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E502600

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Accounts Payable

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-08

DATE REPORTED: 2019-08-09

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |       | BH19-126B  | BH19-127A  | BH19-127B  | EX19-090   |
|--------------------------------|-------|---------------------|-------|------------|------------|------------|------------|
|                                |       | G / S               | RDL   | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |       | 2019-08-06 | 2019-08-06 | 2019-08-06 | 2019-08-06 |
|                                |       |                     |       | 419835     | 419836     | 419837     | 419838     |
| Benzene                        | mg/kg | 0.005               | 0.274 | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | 5.75  | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | 0.17  | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | 1.90  | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | 10    | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10   | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 300   | <10        | <10        | <10        | <10        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 200   | 80         | 100        | <10        | <10        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 30    | 30         | 30         | <10        | <10        |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A   | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 40    | 9          | 7          | 10         | 10         |
| Surrogate                      | Unit  | Acceptable Limits   |       |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101   | 100        | 100        | 100        | 100        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 118   | 69         | 77         | 83         | 83         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 86    | 91         | 102        | 83         | 83         |

Certified By:

# Certificate of Analysis

AGAT WORK ORDER: 19E502600

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Accounts Payable

SAMPLING SITE:

SAMPLED BY:

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

DATE RECEIVED: 2019-08-08

DATE REPORTED: 2019-08-09

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

419825-419838 Results are based on the dry weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
The chromatogram returned to baseline by the retention time of nC50.  
Extraction and holding times were met for this sample.  
C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:



## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E502600  
ATTENTION TO: Accounts Payable  
SAMPLED BY:

### Trace Organics Analysis

| RPT Date: Aug 09, 2019  |       |           | DUPLICATE |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|---|-------|-----------|-----------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER   | Batch | Sample Id | Dup #1    | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|   |       |           |           |        |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |           |        |       |                |              |                    |       |          |                    |       |          |                   |       |  |
| Benzene   | 2099  | 419838    | <0.005    | <0.005 | NA    | < 0.005        | 111%         | 80%                | 120%  | 118%     | 80%                | 120%  | 100%     | 60%               | 140%  |  |
| Toluene   | 2099  | 419838    | <0.05     | <0.05  | NA    | < 0.05         | 112%         | 80%                | 120%  | 117%     | 80%                | 120%  | 101%     | 60%               | 140%  |  |
| Ethylbenzene  | 2099  | 419838    | <0.01     | <0.01  | NA    | < 0.01         | 114%         | 80%                | 120%  | 117%     | 80%                | 120%  | 103%     | 60%               | 140%  |  |
| Xylenes   | 2099  | 419838    | <0.05     | <0.05  | NA    | < 0.05         | 114%         | 80%                | 120%  | 112%     | 80%                | 120%  | 102%     | 60%               | 140%  |  |
| C6 - C10 (F1)   | 2099  | 419838    | <10       | <10    | NA    | < 10           | 106%         | 80%                | 120%  | 84%      | 80%                | 120%  | 102%     | 60%               | 140%  |  |
| C10 - C16 (F2)  | 1219  | 419838    | < 10      | < 10   | NA    | < 10           | 101%         | 80%                | 120%  | 84%      | 80%                | 120%  | 108%     | 60%               | 140%  |  |
| C16 - C34 (F3)  | 1219  | 419838    | < 10      | < 10   | NA    | < 10           | 108%         | 80%                | 120%  | 80%      | 80%                | 120%  | 104%     | 60%               | 140%  |  |
| C34 - C50 (F4)  | 1219  | 419838    | < 10      | < 10   | NA    | < 10           | 109%         | 80%                | 120%  | 105%     | 80%                | 120%  | 133%     | 60%               | 140%  |  |
| Moisture Content  | 1219  | 419838    | 10        | 9      | 10.5% | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E502600  
ATTENTION TO: Accounts Payable  
SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |





### Laboratory Use Only

Arrival Temperature: 7.3°C

AGAT Job Number: 19E502600

Date and Time: 19 AUG 8 10:04

## Chain of Custody Record

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

**Report Information**

Company: IEG Consultants

Contact: Kyle Schepanow

Address: 500 - 2618 Hopewell Place NE  
Calgary, AB T1Y 7J7

Phone: 403-648-4292 Fax: \_\_\_\_\_

LSD: \_\_\_\_\_

Client Project #: A04012A11

Sampled By: \_\_\_\_\_

**Report Information**

1. Name: Kim Mackenzie

Email: kmackenzie@klohn.com

2. Name: Stephanie Hanne

Email: shanne@klohn.com

3. Name: Kyle Schepanow

Email: kschepanow@klohn.com

### Turnaround Time Required (TAT)

Regular TAT:  5 to 7 Business Days

<24 Hours (200%)

Rush TAT:  Two Day / Next Day (100%)

Three Day (50%)

Four Day (25%)

Date Required: \_\_\_\_\_

SEE BACK FOR SURCHARGE BREAKDOWN. CONTACT YOUR CPM FOR ADDITIONAL INFORMATION

**Invoice To** Same Yes  No

Company: Same as Above.

Contact: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

PO/AFE#: 102019-001

Standing Offer #: \_\_\_\_\_

### Requirements (Selection may impact detection limits)

CCME  AB Tier 1

Agricultural  Agricultural

Industrial  Industrial

Residential/Park  Residential/Park

Commercial  Commercial

FWAL  Natural Area

Drinking Water  Alberta Surface Water

Other: \_\_\_\_\_  Chronic  Acute

### Report Format

Single Page

Multiple Samples Per Page

Export

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         | Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input type="checkbox"/> CCME/AB: BTEX/F1-F2 | <input type="checkbox"/> BC: BTEX/VP/EPH <input type="checkbox"/> BC: LEPH/HEPH | SK: BTEX/TVH/C11-C22, C23-C80 | Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Routine Water Chemistry | Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture | HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee) | HOLD FOR 30 DAYS AFTER ANALYSIS (Additional Fee) |
|---------------------------|-----------------------|-------|-------------------|---------------|--|-----------------|------|---------|---|--|---|-------------------------------|---|---|-------------------------|---|--|---|---|--|
|                           |                       |       |                   |               |  | VIALS / JARS    | BAGS | BOTTLES |   |  |   |                               |   |   |                         |   |  |   |   |  |
| 1                         | 9825 BH19-122A        |       | AUG 6/19          | SOIL          |  | 3               |      |         | X   |  |   |                               |   |   |                         |   |  |   |   |  |
| 2                         | 828 BH19-122B         |       |                   |               |  | 3               |      |         | X   |  |   |                               |   |   |                         |   |  |   |   |  |
| 3                         | 829 BH19-123A         |       |                   |               |  | 3               |      |         | X   |  |   |                               |   |   |                         |   |  |   |   |  |
| 4                         | 830 BH19-123B         |       |                   |               |  | 3               |      |         | X   |  |   |                               |   |   |                         |   |  |   |   |  |
| 5                         | 831 BH19-124A         |       |                   |               |  | 3               |      |         | X   |  |   |                               |   |   |                         |   |  |   |   |  |
| 6                         | 832 BH19-124B         |       |                   |               |  | 3               |      |         | X   |  |   |                               |   |   |                         |   |  |   |   |  |
| 7                         | 833 BH19-125A         |       |                   |               |  | 3               |      |         | X   |  |   |                               |   |   |                         |   |  |   |   |  |
| 8                         | 834 BH19-126A         |       |                   |               |  | 3               |      |         | X   |  |   |                               |   |   |                         |   |  |   |   |  |
| 9                         | 835 BH19-126B         |       |                   |               |  | 3               |      |         | X   |  |   |                               |   |   |                         |   |  |   |   |  |
| 10                        | 836 BH19-127A         |       |                   |               |  | 3               |      |         | X   |  |   |                               |   |   |                         |   |  |   |   |  |

|   |                                  |   |                                   |                    |                                   |
|---|----------------------------------|---|-----------------------------------|--------------------|-----------------------------------|
| Samples Relinquished By (Print Name and Sign): <u>Kim Mackenzie</u> | Date/Time: <u>AUG 6/19 14:00</u> | Samples Received By (Print Name and Sign): <u>John Trautman</u> | Date/Time: <u>8 Aug 19 10:04H</u> | Pink Copy - Client | Page <u>1</u> of <u>2</u>         |
| Samples Relinquished By (Print Name and Sign): _____                | Date/Time: _____                 | Samples Received By (Print Name and Sign): _____                | Date/Time: _____                  | Yellow Copy - AGAT | N <sup>o</sup> : AB <b>090069</b> |
| Samples Relinquished By (Print Name and Sign): _____                | Date/Time: _____                 | Samples Received By (Print Name and Sign): _____                | Date/Time: _____                  | White Copy - AGAT  |                                   |





### RECEIVING BASICS - Shipping

Company/Consultant: IEG Consultants  
 Courier: Canadian North Pick-up Prepaid Collect  
 Waybill# 518-YEV-10621855  
 Branch  EDM GP FN FM RD VAN LYD FSJ EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No   
 Custody Seal Intact: Yes  No  NA  
 TAT: <24hr  24-48hr 48-72hr Reg Other \_\_\_\_\_  
 Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No   
 Inorganic Tests (Please Circle): Mibi, BOD, Nitrate/Nitrite, Turbidity, Microtox, Ortho PO4, Tedlar Bag, Residual Chlorine, Chlorophyll\*, Chloroamines\*  
 Earliest Expiry: X  
 Hydrocarbons: Earliest Expiry Terracore

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No   
 International Samples: Yes  No   
 Tape Sealed: Yes  No   
 Coolant Used: Icepack  Bagged Ice  Free Ice  Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 4.9+7.3+7.6=7.3 °C 2 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C  
 3 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C 4 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C  
 5 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C 6 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C  
 7 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C 8 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C  
 9 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C 10 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C  
 (If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E502600  
 Samples Damaged: Yes  No  If YES why?  
 No Bubble Wrap Frozen Courier  
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes No  
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* Subcontracted Analysis (See CPM)



CANADIAN NORTH

518-YEV-10621855

Shipper's Name and Address  
Nom et adresse de l'expéditeur

IEG - Camp Farewell  
PO Box 1038  
Inuvik  
Northwest Territories, Canada  
403-829-3098  
Attn: Nicole Wills

Not negotiable / Non négociable  
**Air Waybill / Lettre de transport aérien**  
Issued by / Émise par

Canadian North: 101 3731 52 Ave E,  
Edmonton International Airport, AB,  
Canada, T9E0V4

Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.  
Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.

Consignee's Name and Address  
Nom et adresse du destinataire

AGAT Laboratories Ltd  
6310 Roper Road NW  
Edmonton  
Alberta, Canada  
T6E 6S4 780 395 2525  
Attn: Chantal Seeney

It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREOF BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY.

Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTÉUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR.

Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur

Agent's IATA Code / Code IATA de l'agent

Account Number / Numéro de compte

Accounting Information / Renseignements comptables **KLO100CW**

IEG Consultants Ltd.  
500 - 2618 Hopewell Place NE  
Calgary  
AB, Canada  
T1Y 7J7  
PO:

Airport of Departure (Address of First Carrier) and Requested Routing  
Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé

**Inuvik**

To / à By first carrier / Par premier transport To / à by / par To / à by / par

**YEG CANADIAN NORTH**

|                     |                    |  |                                  |   |  |
|---------------------|--------------------|--|----------------------------------|---|--|
| Currency<br>Monnaie | CHGS<br>Code Fixés | WT / Poids-Val                               | Other/Autres                     | Declared Value for Carriage<br>Valeur déclarée pour la transporteur | Declared value for Customs<br>Valeur déclarée pour la douane |
| <b>CDN</b>          | <b>PX</b>          | PPD Payé <input checked="" type="checkbox"/> | COLL Du <input type="checkbox"/> | <b>NDV</b>  | <b>NCV</b>   |

Airport of Destination / Aéroport de destination

**Edmonton**

Flight Date - For Carrier Use Only  
Vol. Date - Réservé au Transporteur

Amount of Insurance  
Montant de l'assurance

INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance"  
ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquez le montant à assurer en chiffres dans la case "Montant de l'assurance"

Handling Information / Renseignements pour le traitement de l'expédition

**H4PU**

**SCI**

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut | kg<br>lb | Chargeable<br>Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total   | Commodity Item<br>No.<br>No. d'article de<br>la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|----------------------------|----------|---|----------------------------------|-----------|---------|---|---|
| 1                                       | 12                         | K        | 12  | 7.57                             |           | \$90.84 | GAD   | Soil Samples 60cm x 33cm x 35cm   |
| 1                                       | 12                         |          | 12  |                                  |           | \$90.84 |   |   |

|   |  |  |
|---|--|--|
| Weight Charge<br>Prepaid / Porte payé<br><b>\$90.84</b>                         | Taxation au poids<br>Collect / Port dû     | Other Charges / Autres frais   |
| Valuation Charge  | Taxation à la valeur                       | <b>5T Nav Can Surcharge = 4.54, ACS Screening Fee = 7.50, 5T Fuel Surcharge = 19.98, GST/HST = 6.14</b><br><br>Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.<br>L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure où une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable. |
| Tax<br><b>\$6.14</b>  | Taxe                                       |  |
| Total other Charges Due Agent   | Total des autres frais dûs à l'agent       |  |
| Total other Charges Due Carrier<br><b>\$32.02</b>                               | Total des autres frais dûs au              |  |
| Total Prepaid / Total port payé<br><b>\$129.00</b>                              | Total collect / Total port dû              |  |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination | Charges at Destination / Frais à l'arrivée | Total Collect Charges / Total Du   |

Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent

**07 Aug 2019** **YEV**

Executed on (Date) at (Place)  
Fait le (Date) à (Lieu)

Signature of issuing Carrier or its Agent  
Signature du Transporteur émetteur ou de son Agent

**518-YEV-10621855**

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E502649

TRACE ORGANICS REVIEWED BY: Melinda Guay, Technical Reviewer

DATE REPORTED: Aug 11, 2019

PAGES (INCLUDING COVER): 9

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E502649

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-07

DATE REPORTED: 2019-08-09

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-086   | EX19-087   | TP19-043U  | TP19-044U  | TP19-045A  | TP19-045B  | TP19-046A  | TP19-046B  |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-02 | 2019-08-02 | 2019-08-02 | 2019-08-02 | 2019-08-04 | 2019-08-04 | 2019-08-04 | 2019-08-04 |
|                                |       | G / S               | RDL    | 420254     | 420256     | 420257     | 420258     | 420259     | 420260     | 420261     | 420262     |
| Benzene                        | mg/kg | 0.005               | <0.005 | 0.008      | <0.005     | 0.023      | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | 0.01       | 0.18       | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | 0.75       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 200    | 30         | <10        | 60         | <10        | <10        | 10         | 240        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 40     | 20         | <10        | 390        | 30         | 20         | 60         | 400        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | <10    | 10         | 10         | 140        | 30         | 10         | 10         | 20         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 3      | 17         | 17         | 38         | 4          | 5          | 3          | 5          |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101    | 100        | 101        | 99         | 101        | 99         | 100        | 101        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 78     | 122        | 115        | 106        | 109        | 125        | 93         | 99         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 88     | 83         | 82         | 93         | 86         | 87         | 90         | 89         |            |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E502649

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-07

DATE REPORTED: 2019-08-09

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | EX19-088 | EX19-089 |
|--------------------------------|-------|---------------------|--------|----------|----------|
|                                |       | G / S               | RDL    | 420263   | 420264   |
| Benzene                        | mg/kg |                     | 0.005  | <0.005   | 0.202    |
| Toluene                        | mg/kg |                     | 0.05   | 0.15     | <0.05    |
| Ethylbenzene                   | mg/kg |                     | 0.01   | 1.67     | 0.23     |
| Xylenes                        | mg/kg |                     | 0.05   | 2.79     | 0.08     |
| C6 - C10 (F1)                  | mg/kg |                     | 10     | 140      | <10      |
| C6 - C10 (F1 minus BTEX)       | mg/kg |                     | 10     | 140      | <10      |
| C10 - C16 (F2)                 | mg/kg |                     | 10     | 5470     | 50       |
| C16 - C34 (F3)                 | mg/kg |                     | 10     | 1580     | 590      |
| C34 - C50 (F4)                 | mg/kg |                     | 10     | 170      | 290      |
| Gravimetric Heavy Hydrocarbons | mg/kg |                     | 1000   | N/A      | N/A      |
| Moisture Content               | %     |                     | 1      | 7        | 16       |
| Surrogate                      | Unit  | Acceptable Limits   |        |          |          |
| Toluene-d8 (BTEX)              | %     |                     | 50-150 | 102      | 102      |
| Ethylbenzene-d10 (BTEX)        | %     |                     | 50-150 | 128      | 90       |
| o-Terphenyl (F2-F4)            | %     |                     | 50-150 | 105      | 100      |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E502649

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-07

DATE REPORTED: 2019-08-09

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

420254-420264

Results are based on the dry weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
The chromatogram returned to baseline by the retention time of nC50.  
Extraction and holding times were met for this sample.  
C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:



## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
 PROJECT: A04012A11  
 SAMPLING SITE:

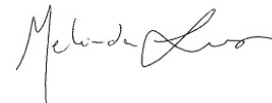
AGAT WORK ORDER: 19E502649  
 ATTENTION TO: Kyle Schepanow  
 SAMPLED BY:

### Trace Organics Analysis

| RPT Date:   |       |           | DUPLICATE |         |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|---|-------|-----------|-----------|---------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER   | Batch | Sample Id | Dup #1    | Dup #2  | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|   |       |           |           |         |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |           |         |       |                |              |                    |       |          |                    |       |          |                   |       |  |
| Benzene   | 2111  | 420254    | < 0.005   | < 0.005 | NA    | < 0.005        | 97%          | 80%                | 120%  | 86%      | 80%                | 120%  | 84%      | 60%               | 140%  |  |
| Toluene   | 2111  | 420254    | < 0.05    | < 0.05  | NA    | < 0.05         | 97%          | 80%                | 120%  | 85%      | 80%                | 120%  | 85%      | 60%               | 140%  |  |
| Ethylbenzene  | 2111  | 420254    | < 0.01    | < 0.01  | NA    | < 0.01         | 100%         | 80%                | 120%  | 85%      | 80%                | 120%  | 85%      | 60%               | 140%  |  |
| Xylenes   | 2111  | 420254    | < 0.05    | < 0.05  | NA    | < 0.05         | 113%         | 80%                | 120%  | 90%      | 80%                | 120%  | 93%      | 60%               | 140%  |  |
| C6 - C10 (F1)   | 2111  | 420254    | < 10      | < 10    | NA    | < 10           | 107%         | 80%                | 120%  | 91%      | 80%                | 120%  | 64%      | 60%               | 140%  |  |
| C10 - C16 (F2)  | 1527  | 420254    | 200       | 170     | 16.2% | < 10           | 100%         | 80%                | 120%  | 88%      | 80%                | 120%  | 83%      | 60%               | 140%  |  |
| C16 - C34 (F3)  | 1527  | 420254    | 40        | 40      | NA    | < 10           | 106%         | 80%                | 120%  | 82%      | 80%                | 120%  | 81%      | 60%               | 140%  |  |
| C34 - C50 (F4)  | 1527  | 420254    | <10       | <10     | NA    | < 10           | 100%         | 80%                | 120%  | 85%      | 80%                | 120%  | 83%      | 60%               | 140%  |  |
| Moisture Content  | 1527  | 420254    | 3         | 3       | NA    | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

Certified By: \_\_\_\_\_



## Method Summary

 CLIENT NAME: IEG CONSULTANTS LTD  
 PROJECT: A04012A11  
 SAMPLING SITE:

 AGAT WORK ORDER: 19E502649  
 ATTENTION TO: Kyle Schepanow  
 SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |



### Laboratory Use Only

Arrival Temperature: 6°C  
 AGAT Job Number: 19E502649  
 Date and Time: 19 AUG 7 11:38

## Chain of Custody Record

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

### Report Information

Company: IEG Consultants  
 Contact: Kyle Schepanow  
 Address: 500, 2618 Hopewell Place NE  
Calgary, AB  
 Phone: 403-648-4292 Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: A04012A11  
 Sampled By: \_\_\_\_\_

### Report Information

1. Name: Kim MacKenzie  
 Email: kmackenzie@klohn.com  
 2. Name: Stephanie Harnem  
 Email: sharnem@klohn.com  
 3. Name: Kyle Schepanow  
 Email: kschepanow@klohn.com

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Rush TAT  Three Day (50%)  
 Four Day (25%)  
 Date Required: \_\_\_\_\_

SEE BACK FOR  
 SURCHARGE  
 BREAKDOWN.  
 CONTACT YOUR CPM  
 FOR ADDITIONAL  
 INFORMATION

### Invoice To

Same Yes  No

Company: Same As Above  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: 102019-001  
 Standing Offer #: \_\_\_\_\_

### Requirements (Selection may impact detection limits)

CCME  AB Tier 1  
 Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  Acute

### Report Format

Single  
 Sample Per Page  
 Multiple  
 Samples Per Page  
 Export

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION            | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         | Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input checked="" type="checkbox"/> CCME/AB: BTEX/F1-F2 <input type="checkbox"/> CCME/AB: BTEX/F1-F4 | <input type="checkbox"/> BC: BTEX/VPH/EPH <input type="checkbox"/> BC: LEPH/HEPH | SK: BTEX/TVH/C11-C22, C23-C60 | Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Routine Water Chemistry | Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture | HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee) | HOLD FOR 30 DAYS AFTER ANALYSIS (Additional Fee) |
|---------------------------|----------------------------------|-------|-------------------|---------------|--|-----------------|------|---------|---|--|--|-------------------------------|---|---|-------------------------|---|--|---|---|--|
|                           |                                  |       |                   |               |  | VALS / JARS     | BAGS | BOTTLES |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 1                         | <u>420254</u><br><u>EX19-086</u> |       | <u>AUG 2/19</u>   | <u>SOIL</u>   |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 2                         | <u>256</u><br><u>EX19-087</u>    |       | ↓                 | ↓             |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 3                         | <u>257</u><br><u>TP19-043U</u>   |       | ↓                 | ↓             |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 4                         | <u>258</u><br><u>TP19-044U</u>   |       | ↓                 | ↓             |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 5                         | <u>259</u><br><u>TP19-045A</u>   |       | <u>AUG 4/19</u>   | ↓             |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 6                         | <u>260</u><br><u>TP19-045B</u>   |       | ↓                 | ↓             |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 7                         | <u>261</u><br><u>TP19-046A</u>   |       | ↓                 | ↓             |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 8                         | <u>262</u><br><u>TP19-046B</u>   |       | ↓                 | ↓             |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 9                         | <u>263</u><br><u>EX19-088</u>    |       | ↓                 | ↓             |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 10                        | <u>264</u><br><u>EX19-089</u>    |       | ↓                 | ↓             |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |

|   |                                     |   |                                     |                    |                                   |
|---|-------------------------------------|---|-------------------------------------|--------------------|-----------------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Kim MacKenzie</u> <i>[Signature]</i> | Date/Time:<br><u>Aug 5/19 16:00</u> | Samples Received By (Print Name and Sign):<br><u>Jason Trasmonte</u> <i>[Signature]</i> | Date/Time:<br><u>7 Aug 19 11:38</u> | Pink Copy - Client | Page <u>1</u> of <u>1</u>         |
| Samples Relinquished By (Print Name and Sign):  | Date/Time:                          | Samples Received By (Print Name and Sign):  | Date/Time:                          | Yellow Copy - AGAT | N <sup>o</sup> : AB <b>090070</b> |
| Samples Relinquished By (Print Name and Sign):  | Date/Time:                          | Samples Received By (Print Name and Sign):  | Date/Time:                          | White Copy - AGAT  |                                   |



### RECEIVING BASICS - Shipping

Company/Consultant: TEG Consultants  
 Courier: Canadian North Prepaid Collect  
 Waybill# 518-7EY-10620945  
 Branch  EDM GP FN FM RD VAN LYD FSJ EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No   
 Custody Seal Intact: Yes No  NA  
 TAT: <24hr 24-48hr 48-72hr  Reg Other \_\_\_\_\_  
 Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No   
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity ,  
 Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* ,  
 Chloroamines\*  
 Earliest Expiry: 7  
 Hydrocarbons: Earliest Expiry Terracore

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No   
 International Samples: Yes  No   
 Tape Sealed: Yes  No   
 Coolant Used: Icepack   Bagged Ice Free Ice Free Water None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 5.7+6.1+6.2=6 °C 2 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C  
 3 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C 4 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C  
 5 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C 6 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C  
 7 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C 8 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C  
 9 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C 10 (Bottle/Jar) \_\_\_+\_\_\_+\_\_\_=\_\_\_ °C  
 (If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E502649  
 Samples Damaged: Yes  No  If YES why?  
 No Bubble Wrap Frozen Courier  
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the  
 above issues: Yes No  
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* Subcontracted Analysis (See CPM)



CANADIAN NORTH  
CARGO

518-YEV-10620945

Shipper's Name and Address  
Nom et adresse de l'expéditeur

IEG - Camp Farewell  
PO Box 1038  
Inuvik  
Northwest Territories, Canada  
403-829-3098  
Attn: Nicole Wills

Consignee's Name and Address  
Nom et adresse du destinataire

AGAT Laboratories Ltd  
6310 Roper Road NW  
Edmonton  
Alberta, Canada  
T6E 6S4 780 395 2525  
Attn: Chantal Seeny

Not negotiable / Non négociable

Air Waybill / Lettre de transport aérien  
Issued by / Émis par

Canadian North; 101 3731 52 Ave E,  
Edmonton International Airport, AB,  
Canada, T9E0V4

Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.  
Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.

It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREDON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE DU PAR TOUT AUTRE TRANSPORTÉUR À MOINS QU'ILS NE SOIENT DONNÉS PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTÉUR.

Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur

Accounting Information / Renseignements comptables

KLO100CW

Agent's IATA Code / Code IATA de l'agent

Account Number / Numéro de compte

IEG Consultants Ltd.  
500 - 2618 Hopewell Place NE  
Calgary  
AB, Canada  
T1Y 7J7  
PO:

Airport of Departure (Address of First Carrier) and Requested Routing  
Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé

Inuvik

To / à By first carrier / Par premier transport To / à by / par To / à by / par  
YEG CANADIAN NORTH

Currency  
Monnaie

CHGS  
Code Frais

WT / Poids-Vol

Other/Autres

Declared Value for Carriage  
Valeur déclarée pour la transport

Declared value for Customs  
Valeur déclarée pour la douane

Airport of Destination / Aéroport de destination

Edmonton

Flight Date - For Carrier Use Only  
Vol, Date - Reserve au Transporteur

CDN

PX

PPD  
Payé  
X

COLL  
Du  
X

NDV

NCV

Amount of Insurance  
Montant de l'assurance

INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance".  
ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance".

Handling Information / Renseignements pour le traitement de l'expédition

HFPU - KEEP COOL

SCI

| No. of Pieces / Nombre de colis / RCP | Gross Weight / Poids brut | kg | Chargeable Weight / Poids de taxation | Rate / Charge / Tarif / Montant | Interline | Total | Commodity Item No. / No. d'article de la marchandise | Description of Goods (inc. Dimensions or Volume) / Description des marchandises (y compris dimensions ou volume) |
|---------------------------------------|---------------------------|----|---------------------------------------|---------------------------------|-----------|-------|--|--|
|---------------------------------------|---------------------------|----|---------------------------------------|---------------------------------|-----------|-------|--|--|

|   |      |  |    |      |  |         |     |                                 |
|---|------|--|----|------|--|---------|-----|---------------------------------|
| 1 | 13 K |  | 13 | 7.57 |  | \$98.41 | GAD | Soil Samples 60cm x 33cm x 35cm |
|---|------|--|----|------|--|---------|-----|---------------------------------|

|   |    |  |    |  |  |         |  |  |
|---|----|--|----|--|--|---------|--|--|
| 1 | 13 |  | 13 |  |  | \$98.41 |  |  |
|---|----|--|----|--|--|---------|--|--|

|   |  |
|---|--|
| Weight Charge<br>Prepaid / Porte payé<br><b>\$98.41</b>                         | Taxation au poids<br>Collect / Port dû     |
| Valuation Charge  | Taxation à la valeur                       |
| Tax<br><b>\$6.62</b>  | Taxe                                       |
| Total other Charges Due Agent   | Total des autres frais dûs à l'agent       |
| Total other Charges Due Carrier<br><b>\$34.07</b>                               | Total des autres frais dûs au              |
| Total Prepaid / Total port payé<br><b>\$139.10</b>                              | Total collect / Total port dû              |
| For Carrier's User only at Destination<br>Réserve au transporteur à destination | Charges at Destination / Frais à l'arrivée |

Other Charges / Autres frais

5T Nav Can Surcharge = 4.92, ACS Screening Fee = 7.50, 5T Fuel Surcharge = 21.65, GST/HST = 6.62

Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure où une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable.

Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent

06 Aug 2019

YEV

Executed on / Fait le

(Date)

at / à

(Place) / (Lieu)

Signature of Issuing Carrier or its Agent / Signature du Transporteur émetteur ou de son Agent

Total Collect Charges / Total Du

518-YEV-10620945

Copy 2 shipper / consignee

Track online at [CanadianNorth.com/Cargo/Track](http://CanadianNorth.com/Cargo/Track).

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: kyle schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E503867

TRACE ORGANICS REVIEWED BY: Jarrod Roberts, Operations Manager

DATE REPORTED: Aug 15, 2019

PAGES (INCLUDING COVER): 21

VERSION\*: 2

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

**\*NOTES**

VERSION 2:Supersedes version 1. Biogenic component for F3 (the F3a:F3b breakdown) added to samples: 430415, 430416, 430417. (Aug 15/19 GH)

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E503867

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: kyle schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-11

DATE REPORTED: 2019-08-15

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR08-01    | WR08-02    | WR08-03    | WR08-04    | WR08-05    | WR08-06    | WR08-07    | WR08-R04   |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 |
|                                |       | G / S               | RDL    | 430295     | 430307     | 430308     | 430309     | 430310     | 430311     | 430312     | 430313     |            |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | 0.07   | <0.05      | 0.07       | 0.05       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | <0.05  | 0.05       | 0.05       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 60     | 100        | 100        | 120        | 110        | 90         | 80         | 100        | 100        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 180    | 470        | 210        | 330        | 300        | 220        | 240        | 250        | 250        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 40     | 80         | 40         | 80         | 70         | 50         | 60         | 50         | 50         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 13     | 10         | 12         | 13         | 11         | 11         | 11         | 11         | 15         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 99     | 96         | 98         | 109        | 102        | 98         | 96         | 96         | 96         |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 102    | 115        | 108        | 100        | 106        | 101        | 106        | 105        | 105        |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 68     | 79         | 60         | 79         | 79         | 73         | 78         | 74         | 74         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-11

DATE REPORTED: 2019-08-15

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR09-01    | WR09-02    | WR09-03    | WR09-04    | WR09-05    | WR09-06    | WR09-07    | WR09-08    |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 |
|                                |       | G / S               | RDL    | 430314     | 430315     | 430318     | 430319     | 430320     | 430321     | 430322     | 430323     |            |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.11       | <0.05      | 0.05       |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | 0.01       | <0.01      | <0.01      | 0.02       |            |
| Xylenes                        | mg/kg | 0.05                | 0.15   | <0.05      | <0.05      | <0.05      | <0.05      | 0.08       | <0.05      | 0.05       | 0.08       |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 160    | 180        | 210        | 150        | 140        | 150        | 80         | 180        | 180        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 290    | 320        | 340        | 180        | 310        | 280        | 150        | 280        | 280        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 50     | 60         | 60         | 30         | 70         | 60         | 40         | 50         | 50         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 13     | 11         | 14         | 12         | 12         | 12         | 13         | 12         | 12         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 106    | 114        | 92         | 101        | 89         | 92         | 93         | 93         | 95         |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 102    | 91         | 88         | 97         | 128        | 95         | 106        | 106        | 106        |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 77     | 93         | 84         | 73         | 79         | 100        | 81         | 81         | 81         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-11

DATE REPORTED: 2019-08-15

| SAMPLE DESCRIPTION:            |       | WR10-01           | WR10-02    | WR10-03    | WR10-04    | WR10-05    | WR10-06    | WR10-07    | WR10-08    |        |        |
|--------------------------------|-------|-------------------|------------|------------|------------|------------|------------|------------|------------|--------|--------|
| SAMPLE TYPE:                   |       | Soil              | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |        |        |
| DATE SAMPLED:                  |       | 2019-08-09        | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 |        |        |
| Parameter                      | Unit  | G / S             | RDL        | 430324     | 430325     | 430326     | 430327     | 430339     | 430340     | 430341 | 430342 |
| Benzene                        | mg/kg | 0.005             | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005 | <0.005 |
| Toluene                        | mg/kg | 0.05              | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05  | 0.06   |
| Ethylbenzene                   | mg/kg | 0.01              | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01  | <0.01  |
| Xylenes                        | mg/kg | 0.05              | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05  | <0.05  |
| C6 - C10 (F1)                  | mg/kg | 10                | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10    | <10    |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10    | <10    |
| C10 - C16 (F2)                 | mg/kg | 10                | 220        | 150        | 130        | 70         | 170        | 140        | 200        | 150    | 150    |
| C16 - C34 (F3)                 | mg/kg | 10                | 620        | 330        | 280        | 220        | 360        | 460        | 410        | 420    | 420    |
| C34 - C50 (F4)                 | mg/kg | 10                | 210        | 70         | 30         | 40         | 70         | 130        | 100        | 120    | 120    |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000              | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A    | N/A    |
| Moisture Content               | %     | 1                 | 11         | 14         | 12         | 13         | 14         | 14         | 14         | 17     | 14     |
| Surrogate                      | Unit  | Acceptable Limits |            |            |            |            |            |            |            |        |        |
| Toluene-d8 (BTEX)              | %     | 50-150            | 103        | 96         | 89         | 98         | 80         | 73         | 103        | 110    | 110    |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150            | 104        | 105        | 87         | 104        | 96         | 63         | 85         | 116    | 116    |
| o-Terphenyl (F2-F4)            | %     | 50-150            | 103        | 89         | 81         | 78         | 102        | 104        | 99         | 100    | 100    |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-11

DATE REPORTED: 2019-08-15

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR11-01    | WR11-02    | WR11-03    | WR11-04    | WR11-05    | WR11-06    | WR11-07    | WR11-08    |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 |
|                                |       | G / S               | RDL    | 430343     | 430344     | 430345     | 430346     | 430347     | 430348     | 430358     | 430359     |            |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | 0.036      | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | 0.11   | <0.05      | <0.05      | 1.24       | <0.05      | <0.05      | 0.05       | <0.05      | 0.08       |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | 0.07       | <0.01      | <0.01      | 0.01       | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | 0.24       | <0.05      | <0.05      | 0.08       | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 120    | 120        | 110        | 90         | 110        | 110        | 250        | 130        | 140        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 440    | 460        | 400        | 300        | 320        | 320        | 720        | 420        | 390        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 130    | 150        | 120        | 100        | 90         | 90         | 280        | 120        | 90         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 13     | 14         | 13         | 13         | 13         | 16         | 12         | 13         | 15         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 111    | 60         | 99         | 76         | 101        | 112        | 103        | 103        | 101        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 102    | 62         | 96         | 81         | 76         | 111        | 89         | 89         | 88         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 100    | 108        | 106        | 101        | 102        | 101        | 98         | 98         | 102        |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-11

DATE REPORTED: 2019-08-15

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR12-01    | WR12-02    | WR12-03    | WR12-R01   | WR13-01    | WR13-02    | WR13-03    | WR13-04    |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 | 2019-08-09 |
|                                |       | G / S               | RDL    | 430360     | 430361     | 430362     | 430363     | 430364     | 430365     | 430366     | 430367     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | 0.02       | 0.01       | 0.02       |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | 0.07       | 0.79       | 0.27       | 0.21       |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | 10         | 10         | 10         | 10         | 40         | 140        | 70         | 80         |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | 10         | 10         | 10         | 10         | 40         | 140        | 70         | 80         |
| C10 - C16 (F2)                 | mg/kg | 10                  | 230    | 290        | 290        | 920        | 1010       | 2000       | 920        | 1030       |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 490    | 860        | 400        | 660        | 190        | 300        | 170        | 150        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 120    | 260        | 100        | 80         | 40         | 130        | 40         | 10         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 8      | 10         | 10         | 9          | 13         | 12         | 10         | 10         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 92     | 98         | 93         | 100        | 94         | 91         | 98         | 100        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 82     | 88         | 76         | 101        | 90         | 123        | 107        | 118        |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 100    | 106        | 98         | 88         | 87         | 77         | 93         | 85         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-11

DATE REPORTED: 2019-08-15

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR13-05    | WR13-06    | BH19-128   | BH19-129   | BH19-130   | BH19-131   | BH19-132   | BH19-133   |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-09 | 2019-08-09 | 2019-08-07 | 2019-08-07 | 2019-08-07 | 2019-08-07 | 2019-08-07 | 2019-08-07 |
|                                |       | G / S               | RDL    | 430405     | 430406     | 430407     | 430413     | 430414     | 430415     | 430416     | 430417     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | 0.07   | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | 0.02   | 0.01       | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | 0.69   | 0.23       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | 100    | 70         | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | 100    | 70         | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 1710   | 1000       | 60         | 20         | 20         | 60         | 20         | 50         |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 270    | 190        | 560        | 400        | 190        | 2680       | 380        | 1900       |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 50     | 30         | 160        | 130        | 40         | 1070       | 160        | 630        |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 11     | 9          | 64         | 29         | 52         | 50         | 42         | 66         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 104    | 103        | 103        | 102        | 102        | 100        | 102        | 103        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 97     | 90         | 114        | 85         | 105        | 96         | 85         | 112        |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 97     | 99         | 97         | 95         | 102        | 100        | 94         | 96         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-11

DATE REPORTED: 2019-08-15

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |       | BH19-134 | BH19-135 |
|--------------------------------|-------|---------------------|-------|----------|----------|
|                                |       | G / S               | RDL   | 430418   | 430419   |
| Benzene                        | mg/kg | 0.005               | 0.040 | <0.005   |          |
| Toluene                        | mg/kg | 0.05                | 0.57  | <0.05    |          |
| Ethylbenzene                   | mg/kg | 0.01                | 4.21  | <0.01    |          |
| Xylenes                        | mg/kg | 0.05                | 14.7  | <0.05    |          |
| C6 - C10 (F1)                  | mg/kg | 10                  | 850   | <10      |          |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | 830   | <10      |          |
| C10 - C16 (F2)                 | mg/kg | 10                  | 8700  | 30       |          |
| C16 - C34 (F3)                 | mg/kg | 10                  | 1930  | 240      |          |
| C34 - C50 (F4)                 | mg/kg | 10                  | 600   | 80       |          |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A   | N/A      |          |
| Moisture Content               | %     | 1                   | 42    | 31       |          |
| Surrogate                      | Unit  | Acceptable Limits   |       |          |          |
| Toluene-d8 (BTEX)              | %     | 50-150              | 111   | 102      |          |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 128   | 90       |          |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 101   | 97       |          |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E503867

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: kyle schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-11

DATE REPORTED: 2019-08-15

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

430295-430419

Results are based on the dry weight of the sample.  
 The C6-C10 (F1) fraction is calculated using toluene response factor.  
 The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
 Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
 Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
 Quality control data is available upon request.  
 Assistance in the interpretation of data is available upon request.  
 This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
 nC6 and nC10 response factors are within 30% of Toluene response factor.  
 nC10, nC16 and nC34 response factors are within 10% of their average.  
 C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
 Linearity is within 15%.  
 The chromatogram returned to baseline by the retention time of nC50.  
 Extraction and holding times were met for this sample.  
 C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
 Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E503867

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: kyle schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (F3a&b) in Soil

DATE RECEIVED: 2019-08-11

DATE REPORTED: 2019-08-15

| Parameter           | Unit  | SAMPLE DESCRIPTION: |        |            |            |            |
|---------------------|-------|---------------------|--------|------------|------------|------------|
|                     |       | G / S               | RDL    | BH19-131   | BH19-132   | BH19-133   |
|                     |       |                     |        | Soil       | Soil       | Soil       |
|                     |       |                     |        | 2019-08-07 | 2019-08-07 | 2019-08-07 |
|                     |       |                     |        | 430415     | 430416     | 430417     |
| C16 - C22 (F3a)     | mg/kg |                     | 10     | 200        | 30         | 100        |
| C22 - C34 (F3b)     | mg/kg |                     | 10     | 2620       | 360        | 1860       |
| Moisture Content    | %     |                     | 1      | 50         | 42         | 66         |
| Surrogate           | Unit  | Acceptable Limits   |        |            |            |            |
| o-Terphenyl (F2-F4) | %     |                     | 50-150 | 100        | 94         | 96         |

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

430415-430417 Results are based on the dry weight of the sample.  
Extraction and holding times were met for this sample.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E503867

PROJECT: A04012A11

ATTENTION TO: kyle schepanov

SAMPLING SITE:

SAMPLED BY:

### Trace Organics Analysis

| RPT Date: Aug 15, 2019  |       |           | DUPLICATE |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       | MATRIX SPIKE |                   |       |
|---|-------|-----------|-----------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|--------------|-------------------|-------|
| PARAMETER   | Batch | Sample Id | Dup #1    | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery     | Acceptable Limits |       |
|   |       |           |           |        |       |                |              | Lower              | Upper |          | Lower              | Upper |              | Lower             | Upper |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |           |        |       |                |              |                    |       |          |                    |       |              |                   |       |
| Benzene   | 2104  | 430295    | <0.005    | <0.005 | NA    | < 0.005        | 95%          | 80%                | 120%  | 115%     | 80%                | 120%  | 89%          | 60%               | 140%  |
| Toluene   | 2104  | 430295    | 0.07      | 0.07   | NA    | < 0.05         | 88%          | 80%                | 120%  | 80%      | 80%                | 120%  | 88%          | 60%               | 140%  |
| Ethylbenzene  | 2104  | 430295    | <0.01     | <0.01  | NA    | < 0.01         | 87%          | 80%                | 120%  | 80%      | 80%                | 120%  | 87%          | 60%               | 140%  |
| Xylenes   | 2104  | 430295    | <0.05     | 0.05   | NA    | < 0.05         | 87%          | 80%                | 120%  | 82%      | 80%                | 120%  | 83%          | 60%               | 140%  |
| C6 - C10 (F1)   | 2104  | 430295    | <10       | <10    | NA    | < 10           | 100%         | 80%                | 120%  | 80%      | 80%                | 120%  | 74%          | 60%               | 140%  |
| C10 - C16 (F2)  | 1092  | 430295    | 60        | 70     | 15.4% | < 10           | 105%         | 80%                | 120%  | 98%      | 80%                | 120%  | 89%          | 60%               | 140%  |
| C16 - C34 (F3)  | 1092  | 430295    | 180       | 170    | 5.7%  | < 10           | 104%         | 80%                | 120%  | 98%      | 80%                | 120%  | 85%          | 60%               | 140%  |
| C34 - C50 (F4)  | 1092  | 430295    | 40        | 30     | NA    | < 10           | 104%         | 80%                | 120%  | 104%     | 80%                | 120%  | 94%          | 60%               | 140%  |
| Moisture Content  | 1092  | 430295    | 13        | 12     | 8.0%  | < 1            |              |                    |       |          |                    |       |              |                   |       |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

|   |      |        |        |        |       |         |      |     |      |      |     |      |     |     |      |
|---|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|-----|-----|------|
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |      |        |        |        |       |         |      |     |      |      |     |      |     |     |      |
| Benzene   | 2104 | 430339 | <0.005 | <0.005 | NA    | < 0.005 | 95%  | 80% | 120% | 114% | 80% | 120% | 96% | 60% | 140% |
| Toluene   | 2104 | 430339 | <0.05  | <0.05  | NA    | < 0.05  | 88%  | 80% | 120% | 80%  | 80% | 120% | 66% | 60% | 140% |
| Ethylbenzene  | 2104 | 430339 | <0.01  | <0.01  | NA    | < 0.01  | 87%  | 80% | 120% | 81%  | 80% | 120% | 66% | 60% | 140% |
| Xylenes   | 2104 | 430339 | <0.05  | <0.05  | NA    | < 0.05  | 87%  | 80% | 120% | 82%  | 80% | 120% | 62% | 60% | 140% |
| C6 - C10 (F1)   | 2104 | 430339 | <10    | <10    | NA    | < 10    | 100% | 80% | 120% | 86%  | 80% | 120% | 72% | 60% | 140% |
| C10 - C16 (F2)  | 1532 | 430339 | 170    | 160    | 6.1%  | < 10    | 115% | 80% | 120% | 95%  | 80% | 120% | 96% | 60% | 140% |
| C16 - C34 (F3)  | 1532 | 430339 | 360    | 300    | 18.2% | < 10    | 120% | 80% | 120% | 88%  | 80% | 120% | 86% | 60% | 140% |
| C34 - C50 (F4)  | 1532 | 430339 | 70     | 60     | 15.4% | < 10    | 118% | 80% | 120% | 90%  | 80% | 120% | 88% | 60% | 140% |
| Moisture Content  | 1532 | 430339 | 14     | 14     | 0.0%  | < 1     |      |     |      |      |     |      |     |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

|   |      |        |        |        |      |         |      |     |      |      |     |      |      |     |      |
|---|------|--------|--------|--------|------|---------|------|-----|------|------|-----|------|------|-----|------|
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |      |        |        |        |      |         |      |     |      |      |     |      |      |     |      |
| Benzene   | 1970 | 430405 | <0.005 | <0.005 | NA   | < 0.005 | 98%  | 80% | 120% | 82%  | 80% | 120% | 86%  | 60% | 140% |
| Toluene   | 1970 | 430405 | 0.07   | 0.06   | NA   | < 0.05  | 101% | 80% | 120% | 81%  | 80% | 120% | 88%  | 60% | 140% |
| Ethylbenzene  | 1970 | 430405 | 0.02   | 0.01   | NA   | < 0.01  | 101% | 80% | 120% | 83%  | 80% | 120% | 104% | 60% | 140% |
| Xylenes   | 1970 | 430405 | 0.69   | 0.69   | 0.0% | < 0.05  | 110% | 80% | 120% | 83%  | 80% | 120% | 86%  | 60% | 140% |
| C6 - C10 (F1)   | 1970 | 430405 | 100    | 100    | 0.0% | < 10    | 96%  | 80% | 120% | 87%  | 80% | 120% | 92%  | 60% | 140% |
| C10 - C16 (F2)  | 1504 | 430405 | 1710   | 1650   | 3.6% | < 10    | 99%  | 80% | 120% | 110% | 80% | 120% | 105% | 60% | 140% |
| C16 - C34 (F3)  | 1504 | 430405 | 270    | 260    | 3.8% | < 10    | 104% | 80% | 120% | 118% | 80% | 120% | 123% | 60% | 140% |
| C34 - C50 (F4)  | 1504 | 430405 | 50     | 40     | NA   | < 10    | 105% | 80% | 120% | 99%  | 80% | 120% | 107% | 60% | 140% |
| Moisture Content  | 1504 | 430405 | 11     | 10     | 9.5% | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.



## Quality Assurance

 CLIENT NAME: IEG CONSULTANTS LTD  
 PROJECT: A04012A11  
 SAMPLING SITE:

 AGAT WORK ORDER: 19E503867  
 ATTENTION TO: kyle schepanow  
 SAMPLED BY:

### Trace Organics Analysis (Continued)

|                        |       |              |           |        |     |                 |                    |                      |                    |          |                      |       |          |                      |       |
|------------------------|-------|--------------|-----------|--------|-----|-----------------|--------------------|----------------------|--------------------|----------|----------------------|-------|----------|----------------------|-------|
| RPT Date: Aug 15, 2019 |       |              | DUPLICATE |        |     | Method<br>Blank | REFERENCE MATERIAL |                      | METHOD BLANK SPIKE |          | MATRIX SPIKE         |       |          |                      |       |
| PARAMETER              | Batch | Sample<br>Id | Dup #1    | Dup #2 | RPD |                 | Measured<br>Value  | Acceptable<br>Limits |                    | Recovery | Acceptable<br>Limits |       | Recovery | Acceptable<br>Limits |       |
|                        |       |              |           |        |     |                 |                    | Lower                | Upper              |          | Lower                | Upper |          | Lower                | Upper |

Certified By:



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E503867

PROJECT: A04012A11

ATTENTION TO: kyle schepanow

SAMPLING SITE:

SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C22 (F3a)                | ORG-170-5120/5300               | CCME Tier 1 Method     | GC/FID               |
| C22 - C34 (F3b)                | ORG-170-5120/5300               | CCME Tier 1 Method     | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method     | GRAVIMETRIC          |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method     | GC/FID               |







# AGAT Laboratories

2910 12 Street NE  
 Calgary, Alberta T2E 7P7  
 P: 403-735-2005 • F: 403-735-2771  
 webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
 AGAT Job Number: 19E503867  
 Date and Time: 19 AUG 11 8:47

## Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

### Report Information

Company: IEG Consultants  
 Contact: \_\_\_\_\_  
 Address: SAME AS PAGE 1  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: A04012A11  
 Sampled By: \_\_\_\_\_

### Report Information

1. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_  
 2. Name: SAME AS PAGE 1  
 Email: \_\_\_\_\_  
 3. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Rush TAT  Three Day (50%)  
 Four Day (25%)

Date Required: \_\_\_\_\_

SEE BACK FOR  
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 CONTACT YOUR CPM  
 FOR ADDITIONAL  
 INFORMATION

### Invoice To

Same Yes  / No

Company: \_\_\_\_\_  
 Contact: SAME AS PAGE 1  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: IO2019-01  
 Standing Offer #: \_\_\_\_\_

### Requirements (Selection may impact detection limits)

CCME  AB Tier 1  
 Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other:  Chronic  Acute

### Report Format

Single  Sample Per Page  
 Multiple  Samples Per Page  
 Export

|   |  |  |  |   |  |  |  |  |  |   |  |  |   |
|---|--|--|--|---|--|--|--|--|--|---|--|--|---|
| Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input checked="" type="checkbox"/> CCME/AB : BTEX/F1-F2 | <input type="checkbox"/> BC: LEPH/HEPH | <input type="checkbox"/> SK: BTEX/TVH/C11-C22, C23-C60 | <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | <input type="checkbox"/> Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture | <input type="checkbox"/> Routine Water Chemistry | <input type="checkbox"/> Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | <input type="checkbox"/> Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | <input type="checkbox"/> Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture | <input type="checkbox"/> HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee) | <input type="checkbox"/> HOLD FOR 30 DAYS AFTER ANALYSIS (Additional Fee) |
|---|--|--|--|---|--|--|--|--|--|---|--|--|---|

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         | Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input checked="" type="checkbox"/> CCME/AB : BTEX/F1-F2 | <input type="checkbox"/> BC: LEPH/HEPH | <input type="checkbox"/> SK: BTEX/TVH/C11-C22, C23-C60 | <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | <input type="checkbox"/> Routine Water Chemistry | <input type="checkbox"/> Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | <input type="checkbox"/> Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | <input type="checkbox"/> Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture | <input type="checkbox"/> HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee) | <input type="checkbox"/> HOLD FOR 30 DAYS AFTER ANALYSIS (Additional Fee) |
|---------------------------|-----------------------|-------|-------------------|---------------|--|-----------------|------|---------|---|--|--|--|---|--|--|--|---|--|--|---|
|                           |                       |       |                   |               |  | VIALS / JARS    | BAGS | BOTTLES |   |  |  |  |   |  |  |  |   |  |  |   |
| 1                         | <u>430339</u>         |       | <u>AUG 9/19</u>   | <u>SOIL</u>   |  | <u>3</u>        |      |         | <input checked="" type="checkbox"/>   |  |  |  |   |  |  |  |   |  |  |   |
| 2                         | <u>340</u>            |       |                   |               |  | <u>3</u>        |      |         | <input checked="" type="checkbox"/>   |  |  |  |   |  |  |  |   |  |  |   |
| 3                         | <u>341</u>            |       |                   |               |  | <u>3</u>        |      |         | <input checked="" type="checkbox"/>   |  |  |  |   |  |  |  |   |  |  |   |
| 4                         | <u>342</u>            |       |                   |               |  | <u>3</u>        |      |         | <input checked="" type="checkbox"/>   |  |  |  |   |  |  |  |   |  |  |   |
| 5                         | <u>343</u>            |       |                   |               |  | <u>3</u>        |      |         | <input checked="" type="checkbox"/>   |  |  |  |   |  |  |  |   |  |  |   |
| 6                         | <u>344</u>            |       |                   |               |  | <u>3</u>        |      |         | <input checked="" type="checkbox"/>   |  |  |  |   |  |  |  |   |  |  |   |
| 7                         | <u>345</u>            |       |                   |               |  | <u>3</u>        |      |         | <input checked="" type="checkbox"/>   |  |  |  |   |  |  |  |   |  |  |   |
| 8                         | <u>346</u>            |       |                   |               |  | <u>3</u>        |      |         | <input checked="" type="checkbox"/>   |  |  |  |   |  |  |  |   |  |  |   |
| 9                         | <u>347</u>            |       |                   |               |  | <u>3</u>        |      |         | <input checked="" type="checkbox"/>   |  |  |  |   |  |  |  |   |  |  |   |
| 10                        | <u>348</u>            |       |                   |               |  | <u>3</u>        |      |         | <input checked="" type="checkbox"/>   |  |  |  |   |  |  |  |   |  |  |   |

|  |                  |   |                             |                    |                           |
|--|------------------|---|-----------------------------|--------------------|---------------------------|
| Samples Relinquished By (Print Name and Sign): _____ | Date/Time: _____ | Samples Received By (Print Name and Sign): <u>[Signature]</u> | Date/Time: <u>8/11/2019</u> | Pink Copy - Client | Page <u>3</u> of <u>6</u> |
| Samples Relinquished By (Print Name and Sign): _____ | Date/Time: _____ | Samples Received By (Print Name and Sign): _____              | Date/Time: _____            | Yellow Copy - AGAT | Nº: AB <u>090068</u>      |
| Samples Relinquished By (Print Name and Sign): _____ | Date/Time: _____ | Samples Received By (Print Name and Sign): _____              | Date/Time: _____            | White Copy - AGAT  |                           |





# AGAT Laboratories

2910 12 Street NE  
 Calgary, Alberta T2E 7P7  
 P: 403-735-2005 • F: 403-735-2771  
 webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
 AGAT Job Number: **19E503867**  
 Date and Time: **19 AUG 11 8:47**

## Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

### Report Information

Company: **IEG Consultants**  
 Contact: \_\_\_\_\_  
 Address: **SAME AS PAGE 1**  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: **A04012A11**  
 Sampled By: \_\_\_\_\_

### Report Information

1. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_  
 2. Name: **SAME AS PAGE 1**  
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 3. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Rush TAT  Three Day (50%)  
 Four Day (25%)

Date Required: \_\_\_\_\_

SEE BACK FOR  
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### Invoice To

Same Yes  No

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 PO/AFE#: **IO2019-01**  
 Standing Offer #: \_\_\_\_\_

### Requirements (Selection may impact detection limits)

CCME  AB Tier 1  
 Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  
 Acute

### Report Format

Single  Sample Per Page  
 Multiple  Samples Per Page  
 Export

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         | Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input checked="" type="checkbox"/> CCME/AB : BTEX/F1-F4 <input type="checkbox"/> CCME/AB : BTEX/F1-F2 | <input type="checkbox"/> BC: BTEX/MPH/EPH <input type="checkbox"/> BC: LEPH/HEPH | SK: BTEX/TVH/C11-C22, C23-C60 | Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Routine Water Chemistry | Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture | HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee) | HOLD FOR 30 DAYS AFTER ANALYSIS (Additional Fee) |
|---------------------------|-----------------------|-------|-------------------|---------------|--|-----------------|------|---------|---|--|--|-------------------------------|---|---|-------------------------|---|--|---|---|--|
|                           |                       |       |                   |               |  | WALS/JARS       | BAGS | BOTTLES |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 1                         | 430367 WR13-04        |       | AUG 9/19          | SOIL          |  | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 2                         | 405 WR13-05           |       |                   |               |  | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 3                         | 406 WR13-06           |       |                   |               |  | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 4                         | 407 BH19-128          |       | AUG 7/19          |               |  | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 5                         | 413 BH19-129          |       |                   |               |  | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 6                         | 414 BH19-130          |       |                   |               |  | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 7                         | 415 BH19-131          |       |                   |               |  | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 8                         | 416 BH19-132          |       |                   |               | broken jar lid and tap                                     | 2               |      |         |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 9                         | 417 BH19-133          |       |                   |               |  | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 10                        | 418 BH19-134          |       |                   |               | jar lid is broken and tap                                  | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |   |  |

|  |                  |   |                             |                    |                           |
|--|------------------|---|-----------------------------|--------------------|---------------------------|
| Samples Relinquished By (Print Name and Sign): _____ | Date/Time: _____ | Samples Received By (Print Name and Sign): <b>[Signature]</b> | Date/Time: <b>8/11/2019</b> | Pink Copy - Client | Page <b>5</b> of <b>6</b> |
| Samples Relinquished By (Print Name and Sign): _____ | Date/Time: _____ | Samples Received By (Print Name and Sign): _____              | Date/Time: _____            | Yellow Copy - AGAT |                           |
| Samples Relinquished By (Print Name and Sign): _____ | Date/Time: _____ | Samples Received By (Print Name and Sign): _____              | Date/Time: _____            | White Copy - AGAT  |                           |

Nº: AB **090068**







### RECEIVING BASICS - Shipping

Company/Consultant: IEG Consultants

Courier: Canadian Milk Pick up Prepaid Collect

Waybill# 518-TEV-30817619

Branch  EDM  GP  FN  FM  RD  VAN  LYD  FSJ  EST Other: \_\_\_\_\_

If multiple sites were submitted at once: Yes  No

Custody Seal Intact: Yes  No  NA

TAT: <24hr  24-48hr  48-72hr  Reg  Other \_\_\_\_\_

Cooler Quantity: 3

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No

Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\*

Earliest Expiry: \_\_\_\_\_

Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_

Legal Samples: Yes  No

International Samples: Yes  No

Tape Sealed: Yes  No

Coolant Used: Icepack   Bagged Ice  Free Ice  Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen) 6.1°C

1 (Bottle/Jar) ~~6.4~~ + ~~6.6~~ + ~~6.4~~ = 6.5 °C    2 (Bottle/Jar) ~~6.0~~ + ~~6.0~~ + ~~5.5~~ = 5.8 °C

3 (Bottle/Jar) ~~5.9~~ + ~~6.1~~ + ~~6.1~~ = 6.0 °C    4 (Bottle/Jar) \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ °C

5 (Bottle/Jar) \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ °C    6 (Bottle/Jar) \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ °C

7 (Bottle/Jar) \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ °C    8 (Bottle/Jar) \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ °C

9 (Bottle/Jar) \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ °C    10 (Bottle/Jar) \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E503867

Samples Damaged: Yes  No  If YES why?

No Bubble Wrap  Frozen  Courier

Other: \_\_\_\_\_

Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes  No

Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_

CPM Initial \_\_\_\_\_

General Comments: Sample ID 430348, listed twice on COC:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\* Subcontracted Analysis (See CPM)



CANADIAN NORTH

518-YEV-30817614

Shipper's Name and Address  
Nom et adresse de l'expéditeur

IEG

Inuvik  
Northwest Territories, Canada  
X0E 0T0 403-829-3048  
Attn: Kim MacKenzie

Consignee's Name and Address  
Nom et adresse du destinataire

AGAT Laboratories Ltd  
6310 Roper Road NW  
Edmonton  
Alberta, Canada  
T6E 6S4 780 395 2525  
Attn: Chantal Seeney

Not negotiable / Non négociable

Air Waybill / Lettre de transport aérien

Issued by / Émise par

Canadian North; 101 3731 52 Ave E,  
Edmonton International Airport, AB,  
Canada, T9E0V4

Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.  
Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.

It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR.

Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur

Accounting Information / Renseignements comptables

KLO100CW

Agent's IATA Code / Code IATA de l'agent

Account Number / Numéro de compte

IEG Consultants Ltd.  
500 - 2618 Hopewell Place NE  
Calgary  
AB, Canada  
T1Y 7J7  
PO:

Airport of Departure (Address of First Carrier) and Requested Routing  
Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé

Inuvik

To / à  
YEG

By first carrier / Par premier transport  
CANADIAN NORTH

To / à

by / par

To / à

by / par

Currency  
Monnaie

CHGS  
Code Frais

WT / Poids-Val

Other/Autres

Declared Value for Carriage  
Valeur déclarée pour la  
transport

Declared value for Customs  
Valeur déclarée pour la douane

CDN

PX

PPD  
Payé

COLL  
Du

NDV

NCV

Airport of Destination / Aéroport de destination

Edmonton

Flight Date - For Carrier Use Only  
Vol, Date - Réservé au Transporteur

Amount of Insurance  
Montant de l'assurance

INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance"  
ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans le case "Montant de l'assurance"

Handling Information / Renseignements pour le traitement de l'expédition

KEEP COOL  
HOLD FOR PICK UP

SCI

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut | kg<br>lb | Chargeable<br>Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total    | Commodity Item<br>No.<br>No. d'article de<br>la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|----------------------------|----------|---|----------------------------------|-----------|----------|---|---|
| 3                                       | 53 K                       |          | 53  | 5.67                             |           | \$300.51 | GEN   | Soil SAMPLES 56cm x 60cm x 60cm   |

3

53

53

\$300.51

Weight Charge  
Prepaid / Porte payé  
\$300.51

Taxation au poids  
Collect / Port dû

Other Charges / Autres frais

5T Nav Can Surcharge = 15.03, ACS Screening Fee = 7.95, 5T Fuel Surcharge = 66.11, GST/HST = 19.48

Valuation Charge

Taxation à la valeur

Tax

Taxe

Total other Charges Due Agent

Total des autres frais dûs à l'agent

Total other Charges Due Carrier

Total des autres frais dûs au

\$89.09

Total Prepaid / Total port payé

Total collect / Total port dû

\$409.08

Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent

10 Aug 2019

YEV

Executed on  
Fait le

(Date)  
(Date)

at  
à

(Place)  
(Lieu)

Signature of Issuing Carrier or its Agent  
Signature du Transporteur émetteur ou de son Agent

For Carrier's User only at Destination  
Réservé au transporteur à destination

Charges at Destination / Frais à l'arrivée

Total Collect Charges / Total Du

518-YEV-30817614

Copy 2 shipper / consignee

Track online at [CanadianNorth.com/Cargo/Track](http://CanadianNorth.com/Cargo/Track).

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E504850

TRACE ORGANICS REVIEWED BY: Laarni Hafso, Laboratory Manager

DATE REPORTED: Aug 22, 2019

PAGES (INCLUDING COVER): 15

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E504850

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-14

DATE REPORTED: 2019-08-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR4-009    | WR4-010    | WR4-011    | WR4-012    | WR4-013    | WR4-014    | WR4-015    | WR4-016    |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 |
|                                |       | G / S               | RDL    | 437027     | 437052     | 437053     | 437054     | 437055     | 437056     | 437057     | 437058     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.05       | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 240    | 150        | 540        | 300        | 350        | 190        | 390        | 260        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 400    | 250        | 660        | 490        | 570        | 320        | 550        | 450        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 50     | <10        | 60         | 90         | 110        | <10        | 60         | 80         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 10     | 13         | 11         | 11         | 9          | 12         | 12         | 10         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 103    | 100        | 102        | 103        | 103        | 102        | 103        | 101        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 119    | 132        | 146        | 73         | 146        | 125        | 128        | 118        |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 103    | 73         | 106        | 104        | 118        | 79         | 122        | 101        |            |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E504850

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-14

DATE REPORTED: 2019-08-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR5-006    | WR5-007    | WR5-008    | WR5-009    | WR5-010    | WR14-001   | WR14-002   | WR14-003   |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 |
|                                |       | G / S               | RDL    | 437059     | 437060     | 437061     | 437062     | 437063     | 437064     | 437065     | 437066     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | 0.005      | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.08       | 0.10       | 0.05       |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | 0.06       | 0.02       | 0.07       |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.25       | 0.08       | 0.26       |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | 20         | <10        | 20         |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | 20         | <10        | 20         |
| C10 - C16 (F2)                 | mg/kg | 10                  | 400    | 350        | 290        | 320        | 300        | 960        | 2020       | 1240       |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 550    | 550        | 470        | 490        | 490        | 800        | 1780       | 1050       |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 90     | 90         | 70         | 270        | 80         | 40         | 170        | 100        |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 15     | 14         | 14         | 17         | 16         | 19         | 14         | 18         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 103    | 103        | 84         | 103        | 102        | 104        | 104        | 104        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 73     | 92         | 78         | 96         | 138        | 146        | 102        | 140        |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 103    | 106        | 104        | 103        | 105        | 105        | 114        | 102        |            |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E504850

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
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TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-14

DATE REPORTED: 2019-08-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            | WR14-004   | WR14-005   | WR14-006   | WR14-007   | WR14-R007  | WR6-007    | WR6-008    | WR6-009    |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | G / S               | RDL        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
| DATE SAMPLED:                  |       | 2019-08-12          | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 | 2019-08-12 |
| Benzene                        | mg/kg | 0.005               | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | 0.006      | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05      | 0.07       | <0.05      | <0.05      | <0.05      | 0.06       | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | 0.01       | 0.08       | 0.02       | <0.01      | 0.02       | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05      | 0.17       | 0.10       | <0.05      | 0.11       | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10        | 30         | 20         | <10        | 20         | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10        | 30         | 20         | <10        | 20         | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 2190       | 990        | 1090       | 1290       | 880        | 160        | 300        | 170        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 1580       | 940        | 1020       | 1030       | 840        | 220        | 660        | 240        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 140        | 140        | 130        | 80         | 100        | 30         | 270        | 60         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 18         | 18         | 19         | 19         | 19         | 19         | 11         | 12         | 11         |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 105        | 103        | 104        | 104        | 100        | 101        | 101        | 101        | 101        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 99         | 148        | 147        | 97         | 107        | 93         | 92         | 100        |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 101        | 102        | 94         | 101        | 99         | 100        | 89         | 89         |            |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E504850

PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-14

DATE REPORTED: 2019-08-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        |            |            |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|
|                                |       | G / S               | RDL    | WR6-010    | WR6-011    | WR6-012    |
|                                |       |                     |        | Soil       | Soil       | Soil       |
|                                |       |                     |        | 2019-08-12 | 2019-08-12 | 2019-08-12 |
|                                |       |                     |        | 437075     | 437076     | 437077     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 220    | 200        | 210        | 210        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 130    | 290        | 280        | 280        |
| C34 - C50 (F4)                 | mg/kg | 10                  | <10    | 60         | 30         | 30         |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 10     | 11         | 12         | 12         |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 100    | 102        | 102        | 102        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 85     | 129        | 116        | 116        |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 91     | 108        | 120        | 120        |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E504850

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-14

DATE REPORTED: 2019-08-22

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

- 437027 Results are based on the dry weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
The chromatogram returned to baseline by the retention time of nC50.  
Extraction and holding times were met for this sample.  
C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.
- 437052 Results are based on the dry weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
The chromatogram has returned to baseline by the retention time of nC50.  
Extraction and holding times were met for this sample.
- 437052 Results are based on the wet weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
Total C6 - C10 results are corrected for BTEX.  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
Linearity is within 15%.  
Extraction and holding times were met for this sample.  
C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.

Certified By:





## Certificate of Analysis

AGAT WORK ORDER: 19E504850

PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-14

DATE REPORTED: 2019-08-22

Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

- 437053-437055 Results are based on the dry weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
The chromatogram returned to baseline by the retention time of nC50.  
Extraction and holding times were met for this sample.  
C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.
- 437056 Results are based on the wet weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
Total C6 - C10 results are corrected for BTEX.  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
Linearity is within 15%.  
Extraction and holding times were met for this sample.  
C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.
- 437056 Results are based on the dry weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
The chromatogram has returned to baseline by the retention time of nC50.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E504850

PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-14

DATE REPORTED: 2019-08-22

Extraction and holding times were met for this sample.

437057-437077

Results are based on the dry weight of the sample.

The C6-C10 (F1) fraction is calculated using toluene response factor.

The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.

Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.

Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).

Quality control data is available upon request.

Assistance in the interpretation of data is available upon request.

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

nC6 and nC10 response factors are within 30% of Toluene response factor.

nC10, nC16 and nC34 response factors are within 10% of their average.

C50 response factor is within 70% of nC10 + nC16 + nC34 average.

Linearity is within 15%.

The chromatogram returned to baseline by the retention time of nC50.

Extraction and holding times were met for this sample.

C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.

Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E504850  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

### Trace Organics Analysis

| RPT Date: Aug 22, 2019  |       |           | DUPLICATE |         |       | Method Blank | REFERENCE MATERIAL |                   |       | METHOD BLANK SPIKE |                   |       | MATRIX SPIKE |                   |       |
|---|-------|-----------|-----------|---------|-------|--------------|--------------------|-------------------|-------|--------------------|-------------------|-------|--------------|-------------------|-------|
| PARAMETER   | Batch | Sample Id | Dup #1    | Dup #2  | RPD   |              | Measured Value     | Acceptable Limits |       | Recovery           | Acceptable Limits |       | Recovery     | Acceptable Limits |       |
|   |       |           |           |         |       |              |                    | Lower             | Upper |                    | Lower             | Upper |              | Lower             | Upper |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |           |         |       |              |                    |                   |       |                    |                   |       |              |                   |       |
| Benzene   | 1972  | 7027      | < 0.005   | < 0.005 | NA    | < 0.005      | 105%               | 80%               | 120%  | 108%               | 80%               | 120%  | 97%          | 60%               | 140%  |
| Toluene   | 1972  | 7027      | < 0.05    | < 0.05  | NA    | < 0.05       | 108%               | 80%               | 120%  | 104%               | 80%               | 120%  | 95%          | 60%               | 140%  |
| Ethylbenzene  | 1972  | 7027      | < 0.01    | < 0.01  | NA    | < 0.01       | 108%               | 80%               | 120%  | 107%               | 80%               | 120%  | 99%          | 60%               | 140%  |
| Xylenes   | 1972  | 7027      | < 0.05    | < 0.05  | NA    | < 0.05       | 119%               | 80%               | 120%  | 92%                | 80%               | 120%  | 85%          | 60%               | 140%  |
| C6 - C10 (F1)   | 1972  | 7027      | < 10      | < 10    | NA    | < 10         | 100%               | 80%               | 120%  | 99%                | 80%               | 120%  | 79%          | 60%               | 140%  |
| C10 - C16 (F2)  | 1506  | 437027    | 240       | 270     | 11.8% | < 10         | 98%                | 80%               | 120%  | 109%               | 80%               | 120%  | 70%          | 60%               | 140%  |
| C16 - C34 (F3)  | 1506  | 437027    | 400       | 410     | 2.5%  | < 10         | 105%               | 80%               | 120%  | 106%               | 80%               | 120%  | 93%          | 60%               | 140%  |
| C34 - C50 (F4)  | 1506  | 437027    | 50        | 60      | 18.2% | < 10         | 105%               | 80%               | 120%  | 93%                | 80%               | 120%  | 100%         | 60%               | 140%  |
| Moisture Content  | 1506  | 437027    | 10        | 9       | 10.5% | < 1          |                    |                   |       |                    |                   |       |              |                   |       |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

|   |      |        |        |        |    |         |      |     |      |      |     |      |      |     |      |
|---|------|--------|--------|--------|----|---------|------|-----|------|------|-----|------|------|-----|------|
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |      |        |        |        |    |         |      |     |      |      |     |      |      |     |      |
| Benzene   | 2105 | 438230 | <0.005 | <0.005 | NA | < 0.005 | 104% | 80% | 120% | 100% | 80% | 120% | 117% | 60% | 140% |
| Toluene   | 2105 | 438230 | <0.05  | <0.05  | NA | < 0.05  | 100% | 80% | 120% | 104% | 80% | 120% | 121% | 60% | 140% |
| Ethylbenzene  | 2105 | 438230 | <0.01  | <0.01  | NA | < 0.01  | 110% | 80% | 120% | 109% | 80% | 120% | 134% | 60% | 140% |
| Xylenes   | 2105 | 438230 | <0.05  | <0.05  | NA | < 0.05  | 112% | 80% | 120% | 109% | 80% | 120% | 132% | 60% | 140% |
| C6 - C10 (F1)   | 2105 | 438230 | <10    | <10    | NA | < 10    | 102% | 80% | 120% | 85%  | 80% | 120% | 83%  | 60% | 140% |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

|   |      |        |     |     |       |      |     |     |      |      |     |      |      |     |      |
|---|------|--------|-----|-----|-------|------|-----|-----|------|------|-----|------|------|-----|------|
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |      |        |     |     |       |      |     |     |      |      |     |      |      |     |      |
| C10 - C16 (F2)  | 1103 | 454283 | 140 | 120 | 15.4% | < 10 | 93% | 80% | 120% | 112% | 80% | 120% | 123% | 60% | 140% |
| C16 - C34 (F3)  | 1103 | 454283 | 270 | 220 | 20.4% | < 10 | 87% | 80% | 120% | 115% | 80% | 120% | 107% | 60% | 140% |
| C34 - C50 (F4)  | 1103 | 454283 | <10 | 10  | NA    | < 10 | 87% | 80% | 120% | 120% | 80% | 120% | 113% | 60% | 140% |
| Moisture Content  | 1103 | 454283 | 11  | 11  | 0.0%  | < 1  |     |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

Certified By:



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E504850

PROJECT: A04012A11

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Gravimetric Heavy Hydrocarbons | ORG-170-5300, 170-5120          | CCME Tier 1 Method     | GRAVIMETRIC          |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| Moisture Content               | ORG-170-5120/5300               | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |









# AGAT Laboratories

## SAMPLE INTEGRITY RECEIPT FORM

### RECEIVING BASICS - Shipping

Company/Consultant: IEG Consultant  
 Courier: CANADIAN NORTH Prepaid Collect  
 Waybill# SIR-YEV-10626453  
 Branch  EDM  GP  FN  FM  RD  VAN  LYD  FSJ  EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No   
 Custody Seal Intact: Yes  No   
 TAT: <24hr 24-48hr  48-72hr Reg Other \_\_\_\_\_  
 Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No   
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\* TC  
 Earliest Expiry: N/A  
 Hydrocarbons: Earliest Expiry N/A

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  NO   
 International Samples: Yes  NO   
 Tape Sealed: Yes  NO   
 Coolant Used: Icepack  Bagged Ice  Free Ice  Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 218 + 10 + 7.9 = 235.9 °C    2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 191504850  
 Samples Damaged:  Yes  No If YES why?  
 No Bubble Wrap  Frozen  Courier   
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes  No   
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: JARS were packed with VIALS  
250ml jars received broken for samples WR4-010, WR4-014 and WRS-008.

\* Subcontracted Analysis (See CPM)





**CANADIAN NORTH**  
CARGO

**518-YEV-10626453**

|  |   |   |  |
|--|---|---|--|
| Shipper's Name and Address<br>Nom et adresse de l'expéditeur   |   | Not negotiable / Non négociable<br><b>Air Waybill / Lettre de transport aérien</b><br>Issued by / Emise par   |  |
| IEG<br><br>Inuvik<br>Northwest Territories, Canada<br>X0E 0T0 403-829-3048<br>Attn: Kim MacKenzie  |   | Canadian North; 101 3731 52 Ave E,<br>Edmonton International Airport, AB,<br>Canada, T9E0V4   |  |
| Consignee's Name and Address<br>Nom et adresse du destinataire   |   | Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.<br>Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.  |  |
| AGAT Laboratories Ltd<br>6310 Roper Road NW<br>Edmonton<br>Alberta, Canada<br>T6E 6S4 780 395 2525<br>Attn: Chantal Seeney   |   | It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF, ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR, L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR. |  |
| Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur   |   | Accounting Information / Renseignements comptables<br><b>KLO100CW</b>   |  |
| Agent's IATA Code / Code IATA de l'agent   |   | IEG Consultants Ltd.<br>500 - 2618 Hopewell Place NE<br>Calgary<br>AB, Canada<br>T1Y 7J7<br>PO:   |  |
| Account Number / Numéro de compte  |   |   |  |
| Airport of Departure (Address of First Carrier) and Requested Routing<br>Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé<br><b>Inuvik</b>   |   |   |  |
| To / à<br><b>YEG</b>   | By first carrier / Par premier transport<br><b>CANADIAN NORTH</b> | To / à  | by / par   |
| Airport of Destination / Aéroport de destination<br><b>Edmonton</b>  |   | Flight Date - For Carrier Use Only<br>Vol, Date - Réservé au Transporteur   |  |
| Currency<br>Monnaie  | CHGS<br>Code Frais  | WT / Poids-Vol  | Other/Autres   |
| <b>CDN</b>   | <b>PX</b>   | PPD Payé<br><b>X</b>  | COLL Du<br><b>X</b>  |
| Amount of Insurance<br>Montant de l'assurance  |   | Declared Value for Carriage<br>Valeur déclarée pour la livraison  | Declared value for Customs<br>Valeur déclarée pour la douane |
|  |   | <b>NDV</b>  | <b>NCV</b>   |
| INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions hereof, indicate amount to be insured in figures box marked "Amount of Insurance"<br>ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance" |   |   |  |
| Handling Information / Renseignements pour le traitement de l'expédition<br><b>HFPU</b><br><b>***KEEP COOL***</b>  |   |   |  |
| <b>SCI</b>   |   |   |  |

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut | kg<br>lb | Chargeable Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total | Commodity Item<br>No.<br>No. d'article de<br>la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|----------------------------|----------|--|----------------------------------|-----------|-------|---|---|
| 1                                       | K                          |          | K                                      | 26                               |           |       | GAD   | SOIL SAMPLES 60cm x 33cm x 36cm   |
| 1                                       | 26                         |          | 26                                     |                                  |           |       |   |   |

|   |  |   |
|---|--|---|
| Weight Charge<br>Prepaid / Porte payé   | Taxation au poids<br>Collect / Port dû | Other Charges / Autres frais  |
| Valuation Charge  | Taxation à la valeur                   |   |
| Tax   | Taxe                                   |   |
| Total other Charges Due Agent   | Total des autres frais dûs à l'agent   |   |
| Total other Charges Due Carrier   | Total des autres frais dûs au          | Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.<br>L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure où une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable. |
| Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent   |  |   |
| Total Prepaid / Total port payé   | Total collect / Total port dû          |   |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination |  | Executed on (Date) at (Place)<br>Fait le (Date) à (Lieu)<br>13 Aug 2019 YEV<br>Signature of issuing Carrier or its Agent<br>Signature du Transporteur émetteur ou de son Agent  |
| Charges at Destination / Frais à l'arrivée                                      |  | Total Collect Charges / Total Dû  |

**518-YEV-10626453**

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
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ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E507199

TRACE ORGANICS REVIEWED BY: Melinda Guay, Technical Reviewer

DATE REPORTED: Aug 22, 2019

PAGES (INCLUDING COVER): 19

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E507199

PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-20

DATE REPORTED: 2019-08-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            |            |            |            |            |            |            |            |            |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | G / S               |            | EX19-091   | WR9-009    | WR9-010    | WR9-011    | WR9-012    | WR9-013    | WR9-014    | WR9-015    |
|                                |       | RDL                 | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
| DATE SAMPLED:                  |       | 2019-08-13          | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 |
| Benzene                        | mg/kg | 0.005               | 0.259      | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | 1.57       | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | 3.47       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 260        | 180        | 200        | 170        | 160        | 190        | 190        | 360        | 360        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 560        | 300        | 440        | 460        | 410        | 420        | 390        | 680        | 680        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 260        | 50         | 130        | 130        | 120        | 140        | 90         | 130        | 130        |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 15         | 13         | 14         | 13         | 17         | 14         | 13         | 15         | 15         |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 104        | 103        | 103        | 103        | 103        | 103        | 103        | 103        | 103        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 77         | 82         | 80         | 84         | 94         | 77         | 95         | 96         | 96         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 103        | 103        | 102        | 97         | 95         | 87         | 103        | 119        | 119        |

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ATTENTION TO: Kyle Schepanow

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-20

DATE REPORTED: 2019-08-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            |            |            |            |            |            |            |            |          |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|----------|
|                                |       | G / S               |            | WR9-016    | WR10-009   | WR10-R009  | WR10-010   | WR10-011   | WR10-012   | WR10-013   | WR10-014 |
|                                |       | RDL                 | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil     |
| DATE SAMPLED:                  |       | 2019-08-15          | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 |          |
| Benzene                        | mg/kg | 0.005               | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005   |
| Toluene                        | mg/kg | 0.05                | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05    |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01    |
| Xylenes                        | mg/kg | 0.05                | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05    |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10      |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10      |
| C10 - C16 (F2)                 | mg/kg | 10                  | 160        | 140        | 110        | 100        | 1090       | 130        | <10        | 80         |          |
| C16 - C34 (F3)                 | mg/kg | 10                  | 470        | 400        | 300        | 300        | 1870       | 500        | 10         | 190        |          |
| C34 - C50 (F4)                 | mg/kg | 10                  | 130        | 40         | 50         | 90         | 1150       | 140        | <10        | 40         |          |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |          |
| Moisture Content               | %     | 1                   | 14         | 11         | 13         | 14         | 17         | 14         | 18         | 16         |          |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |            |          |
| Toluene-d8 (BTEX)              | %     | 50-150              | 104        | 104        | 103        | 104        | 104        | 104        | 104        | 104        |          |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 84         | 77         | 106        | 76         | 78         | 77         | 77         | 79         |          |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 103        | 100        | 96         | 95         | 100        | 100        | 81         | 93         |          |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-20

DATE REPORTED: 2019-08-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR10-015   | WR10-016   | WR11-009   | WR11-010   | WR11-011   | WR011-012  | WR011-013  | WR011-014  |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 | 2019-08-15 |
|                                |       | G / S               | RDL    | 454259     | 454260     | 454261     | 454262     | 454263     | 454264     | 454265     | 454266     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | 0.08       | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | 0.11       | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | 1.90       | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | 60         | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | 60         | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 130    | 120        | 100        | 120        | 90         | 80         | 160        | 400        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 250    | 460        | 450        | 480        | 350        | 310        | 290        | 610        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 120    | 90         | 100        | 30         | 110        | 70         | <10        | 330        |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 18     | 19         | 14         | 16         | 14         | 14         | 17         | 16         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 103    | 103        | 103        | 104        | 100        | 101        | 100        | 100        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 80     | 87         | 78         | 68         | 81         | 90         | 89         | 89         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 95     | 93         | 105        | 100        | 95         | 90         | 97         | 92         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-20

DATE REPORTED: 2019-08-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR011-015  | WR011-016  | WR1-006    | WR1-007    | WR1-008    | WR1-009    | WR1-010    | WR2-006    |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-15 | 2019-08-15 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 |
|                                |       | G / S               | RDL    | 454267     | 454268     | 454269     | 454270     | 454271     | 454272     | 454273     | 454274     |            |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |            |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |            |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 480    | 20         | 170        | 200        | 220        | 220        | 220        | 490        | 540        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 210    | 380        | 780        | 830        | 910        | 910        | 740        | 200        | 210        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 90     | 170        | 210        | 240        | 290        | 290        | 220        | 50         | 50         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 17     | 18         | 7          | 7          | 8          | 8          | 8          | 8          | 15         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 100    | 99         | 99         | 99         | 99         | 99         | 99         | 100        | 100        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 70     | 94         | 68         | 70         | 69         | 74         | 74         | 89         | 84         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 101    | 104        | 90         | 92         | 101        | 87         | 87         | 82         | 89         |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-20

DATE REPORTED: 2019-08-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            | WR2-007    | WR2-008    | WR2-009    | WR2-010    | WR2-011    | WR1-R010   | WR12-004   | WR12-005   |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | G / S               | RDL        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
| DATE SAMPLED:                  |       | 2019-08-16          | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 |
| Benzene                        | mg/kg | 0.005               | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 460        | 510        | 610        | 310        | 130        | 190        | 100        | 60         |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 180        | 140        | 260        | 1070       | 290        | 790        | 190        | 280        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | <10        | 50         | 60         | 340        | 80         | 240        | 70         | 70         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 14         | 13         | 15         | 15         | 15         | 7          | 8          | 9          |            |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 100        | 101        | 101        | 101        | 100        | 99         | 100        | 99         |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 72         | 78         | 82         | 77         | 80         | 74         | 90         | 74         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 83         | 88         | 98         | 110        | 119        | 109        | 98         | 109        |            |

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-20

DATE REPORTED: 2019-08-22

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        |            |            |            |            |            |            |            |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | G / S               |        | WR12-006   | WR13-007   | WR13-008   | WR13-009   | WR13-010   | WR13-011   | WR13-012   |
|                                |       | RDL                 |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 | 2019-08-16 |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | 0.08       | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 140    | 380        | 720        | 890        | 670        | 730        | 810        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 270    | 10         | 170        | 160        | 180        | 260        | 130        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | <10    | <10        | 50         | 40         | 40         | 120        | <10        |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 11     | 12         | 13         | 12         | 13         | 13         | 12         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 102    | 102        | 102        | 102        | 103        | 103        | 102        |            |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 88     | 83         | 76         | 94         | 84         | 83         | 75         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 89     | 70         | 83         | 83         | 70         | 76         | 73         |            |

Certified By:





## Certificate of Analysis

AGAT WORK ORDER: 19E507199

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-20

DATE REPORTED: 2019-08-22

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

454133-454289

Results are based on the dry weight of the sample.  
 The C6-C10 (F1) fraction is calculated using toluene response factor.  
 The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
 Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
 Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
 Quality control data is available upon request.  
 Assistance in the interpretation of data is available upon request.  
 This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
 nC6 and nC10 response factors are within 30% of Toluene response factor.  
 nC10, nC16 and nC34 response factors are within 10% of their average.  
 C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
 Linearity is within 15%.  
 The chromatogram returned to baseline by the retention time of nC50.  
 Extraction and holding times were met for this sample.  
 C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
 Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E507199  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

| Trace Organics Analysis |       |           |           |        |     |                |              |                    |       |          |                    |       |              |                   |
|-------------------------|-------|-----------|-----------|--------|-----|----------------|--------------|--------------------|-------|----------|--------------------|-------|--------------|-------------------|
| RPT Date: Aug 22, 2019  |       |           | DUPLICATE |        |     |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       | MATRIX SPIKE |                   |
| PARAMETER               | Batch | Sample Id | Dup #1    | Dup #2 | RPD | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery     | Acceptable Limits |
|                         |       |           |           |        |     |                | Lower        | Upper              | Lower |          | Upper              | Lower |              | Upper             |

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

|                  |      |        |       |       |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|-------|-------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 1978 | 454133 | 0.259 | 0.345 | 28.5% | < 0.005 | 98%  | 80% | 120% | 95%  | 80% | 120% | 101% | 60% | 140% |
| Toluene          | 1978 | 454133 | <0.05 | 0.05  | NA    | < 0.05  | 102% | 80% | 120% | 96%  | 80% | 120% | 101% | 60% | 140% |
| Ethylbenzene     | 1978 | 454133 | 1.57  | 2.16  | 31.6% | < 0.01  | 101% | 80% | 120% | 104% | 80% | 120% | 104% | 60% | 140% |
| Xylenes          | 1978 | 454133 | 3.47  | 4.81  | 32.4% | < 0.05  | 110% | 80% | 120% | 93%  | 80% | 120% | 89%  | 60% | 140% |
| C6 - C10 (F1)    | 1978 | 454133 | <10   | <10   | NA    | < 10    | 95%  | 80% | 120% | 99%  | 80% | 120% | 98%  | 60% | 140% |
| C10 - C16 (F2)   | 1541 | 454250 | 360   | 330   | 8.7%  | < 10    | 106% | 80% | 120% | 119% | 80% | 120% | 110% | 60% | 140% |
| C16 - C34 (F3)   | 1541 | 454250 | 680   | 680   | 0.0%  | < 10    | 113% | 80% | 120% | 115% | 80% | 120% | 102% | 60% | 140% |
| C34 - C50 (F4)   | 1541 | 454250 | 130   | 160   | 20.7% | < 10    | 113% | 80% | 120% | 117% | 80% | 120% | 104% | 60% | 140% |
| Moisture Content | 1541 | 454250 | 15    | 16    | 6.5%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 2123 | 454263 | <0.005 | <0.005 | 0.0%  | < 0.005 | 117% | 80% | 120% | 115% | 80% | 120% | 93%  | 60% | 140% |
| Toluene          | 2123 | 454263 | 0.08   | 0.08   | 0.0%  | < 0.05  | 118% | 80% | 120% | 118% | 80% | 120% | 96%  | 60% | 140% |
| Ethylbenzene     | 2123 | 454263 | 0.11   | 0.11   | 0.0%  | < 0.01  | 116% | 80% | 120% | 109% | 80% | 120% | 90%  | 60% | 140% |
| Xylenes          | 2123 | 454263 | 1.90   | 1.88   | 1.1%  | < 0.05  | 117% | 80% | 120% | 108% | 80% | 120% | 93%  | 60% | 140% |
| C6 - C10 (F1)    | 2123 | 454263 | 60     | 60     | 0.0%  | < 10    | 93%  | 80% | 120% | 86%  | 80% | 120% | 114% | 60% | 140% |
| C10 - C16 (F2)   | 1201 | 454263 | 90     | 100    | 10.5% | < 10    | 88%  | 80% | 120% | 104% | 80% | 120% | 103% | 60% | 140% |
| C16 - C34 (F3)   | 1201 | 454263 | 350    | 340    | 2.9%  | < 10    | 92%  | 80% | 120% | 106% | 80% | 120% | 115% | 60% | 140% |
| C34 - C50 (F4)   | 1201 | 454263 | 110    | 80     | 31.6% | < 10    | 86%  | 80% | 120% | 119% | 80% | 120% | 120% | 60% | 140% |
| Moisture Content | 1201 | 454263 | 14     | 13     | 7.4%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

|                  |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|------------------|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Benzene          | 1978 | 454283 | <0.005 | <0.005 | NA    | < 0.005 | 98%  | 80% | 120% | 95%  | 80% | 120% | 87%  | 60% | 140% |
| Toluene          | 1978 | 454283 | <0.05  | <0.05  | NA    | < 0.05  | 102% | 80% | 120% | 97%  | 80% | 120% | 87%  | 60% | 140% |
| Ethylbenzene     | 1978 | 454283 | <0.01  | <0.01  | NA    | < 0.01  | 101% | 80% | 120% | 104% | 80% | 120% | 89%  | 60% | 140% |
| Xylenes          | 1978 | 454283 | <0.05  | <0.05  | NA    | < 0.05  | 110% | 80% | 120% | 94%  | 80% | 120% | 79%  | 60% | 140% |
| C6 - C10 (F1)    | 1978 | 454283 | <10    | <10    | NA    | < 10    | 95%  | 80% | 120% | 97%  | 80% | 120% | 94%  | 60% | 140% |
| C10 - C16 (F2)   | 1103 | 454283 | 140    | 120    | 15.4% | < 10    | 93%  | 80% | 120% | 112% | 80% | 120% | 123% | 60% | 140% |
| C16 - C34 (F3)   | 1103 | 454283 | 270    | 220    | 20.4% | < 10    | 87%  | 80% | 120% | 115% | 80% | 120% | 107% | 60% | 140% |
| C34 - C50 (F4)   | 1103 | 454283 | <10    | 10     | NA    | < 10    | 87%  | 80% | 120% | 120% | 80% | 120% | 113% | 60% | 140% |
| Moisture Content | 1103 | 454283 | 11     | 11     | 0.0%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

## Quality Assurance

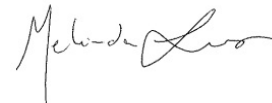
 CLIENT NAME: IEG CONSULTANTS LTD  
 PROJECT: A04012A11  
 SAMPLING SITE:

 AGAT WORK ORDER: 19E507199  
 ATTENTION TO: Kyle Schepanow  
 SAMPLED BY:

### Trace Organics Analysis (Continued)

|                        |       |              |           |        |     |                 |                    |                      |                    |          |                      |       |          |                      |       |
|------------------------|-------|--------------|-----------|--------|-----|-----------------|--------------------|----------------------|--------------------|----------|----------------------|-------|----------|----------------------|-------|
| RPT Date: Aug 22, 2019 |       |              | DUPLICATE |        |     | Method<br>Blank | REFERENCE MATERIAL |                      | METHOD BLANK SPIKE |          | MATRIX SPIKE         |       |          |                      |       |
| PARAMETER              | Batch | Sample<br>Id | Dup #1    | Dup #2 | RPD |                 | Measured<br>Value  | Acceptable<br>Limits |                    | Recovery | Acceptable<br>Limits |       | Recovery | Acceptable<br>Limits |       |
|                        |       |              |           |        |     |                 |                    | Lower                | Upper              |          | Lower                | Upper |          | Lower                | Upper |

Certified By:



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E507199

PROJECT: A04012A11

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |



# AGAT Laboratories

2910 12 Street NE  
 Calgary, Alberta T2E 7P7  
 P: 403-735-2005 • F: 403-735-2771  
 webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: 6.7 °C  
 AGAT Job Number: 19E507199  
 Date and Time: 19 AUG 20 10:24

## Chain of Custody Record

Emergency Support Services Hotline 1-888-AGAT 245 (1-888-242-8245)

### Report Information

Company: IEG Consultants  
 Contact: Kyle Schepanow  
 Address: 500-2618 Hopewell Place  
Calgary AB T1Y 7T7  
 Phone: 403-648-4292 Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: A04012A11  
 Sampled By: \_\_\_\_\_

### Report Information

1. Name: Stephanie Hannem  
 Email: shanneme@klohn.com  
 2. Name: Kim Mackenzie  
 Email: kmackenzie@klohn.com  
 3. Name: Kyle Schepanow  
 Email: kschepanow

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Rush TAT  Two Day / Next Day (100%)  
 Three Day (50%)  
 Four Day (25%)

SEE BACK FOR  
 SURCHARGE  
 BREAKDOWN.  
 CONTACT YOUR CPM  
 FOR ADDITIONAL  
 INFORMATION

### Invoice To

Same Yes  / No

Company: SAME AS ABOVE  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/A/E#: \_\_\_\_\_  
 Standing Offer #: 102019-001

### Requirements (Selection may impact detection limits)

CCME  AB Tier 1  
 Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  Acute

### Report Format

Single  Sample Per Page  
 Multiple  Samples Per Page  
 Export

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         | Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input checked="" type="checkbox"/> CCME/AB : BTEX/F1-F4 <input type="checkbox"/> CCME/AB : BTEX/F1-F2 | <input type="checkbox"/> BC: BTEX/MPH/EPH <input type="checkbox"/> BC: LEPH/HEPH | SK: BTEX/TMH/C11-C22, C23-C60 | Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Routine Water Chemistry | Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture | HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee) | HOLD FOR 30 DAYS AFTER ANALYSIS (Additional Fee) |
|---------------------------|-----------------------|-------|-------------------|---------------|--|-----------------|------|---------|---|--|--|-------------------------------|---|---|-------------------------|---|--|---|---|--|
|                           |                       |       |                   |               |  | VIALS / JARS    | BAGS | BOTTLES |   |  |  |                               |   |   |                         |   |  |   |   |  |
| 1 454133                  | EX19-091              |       | Aug 13/19         | Soil          |  | W               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 2 454241                  | WR9-009               |       | Aug 15/19         |               |  | W               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 3 454245                  | WR9-010               |       |                   |               |  | W               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 4 454246                  | WR9-011               |       |                   |               |  | W               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 5 454247                  | WR9-012               |       |                   |               |  | W               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 6 454248                  | WR9-013               |       |                   |               |  | W               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 7 454249                  | WR9-014               |       |                   |               |  | W               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 8 454250                  | WR9-015               |       |                   |               |  | W               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 9 454251                  | WR9-016               |       |                   |               |  | W               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |
| 10 454252                 | WR10-009              |       |                   |               |  | 3               |      |         | <input checked="" type="checkbox"/>   |  |  |                               |   |   |                         |   |  |   |   |  |

|   |                                      |   |                              |                    |                           |
|---|--------------------------------------|---|------------------------------|--------------------|---------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>Aug 16/19 13:00</u> | Samples Received By (Print Name and Sign):<br><u>R. deBorja</u> | Date/Time:<br><u>8/20/19</u> | Pink Copy - Client | Page <u>1</u> of <u>5</u> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                   | Yellow Copy - AGAT | No: AB <u>090068</u>      |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                           | Samples Received By (Print Name and Sign):                      | Date/Time:                   | White Copy - AGAT  |                           |



# AGAT Laboratories

2910 12 Street NE  
 Calgary, Alberta T2E 7P7  
 P: 403-735-2005 • F: 403-735-2771  
 webearth.agatlabs.com

**Laboratory Use Only**  
 Arrival Temperature: \_\_\_\_\_  
 AGAT Job Number: 19E507199  
 Date and Time: 19 AUG 20 10:24

## Chain of Custody Record

Emergency Support Services Hotline 1-888-AGAT 24/5 (1-888-242-6245)

**Report Information**

Company: see page 1  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: \_\_\_\_\_  
 Sampled By: \_\_\_\_\_

**Report Information**

1. Name: see page 1  
 Email: \_\_\_\_\_  
 2. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_  
 3. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Three Day (50%)  
 Four Day (25%)

Rush TAT \_\_\_\_\_  
 Date Required: \_\_\_\_\_

SEE I  
 SUR  
 BRE/  
 CONTAC  
 FOR A  
 INFO

**Invoice To** Same Yes  / No

Company: see page 1  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: \_\_\_\_\_  
 Standing Offer #: \_\_\_\_\_

**Requirements** (Selection may impact detection limits)

CCME  AB Tier 1  
 Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  Acute

**Report Format**

Single  
 Sample Per Page  
 Multiple  
 Samples Per Page  
 Export

|   |   |   |  |  |   |   |                         |   |  |   |
|---|---|---|--|--|---|---|-------------------------|---|--|---|
| Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input checked="" type="checkbox"/> CCME/AB: BTEX/F1-F2 | <input type="checkbox"/> BC: BTEX/VPH/EPH | <input type="checkbox"/> BC: LEPH/HEPH | <input type="checkbox"/> SK: BTEX/VPH/C11-C22, C23-C60 | Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Routine Water Chemistry | Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | Califorms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture |
|---|---|---|--|--|---|---|-------------------------|---|--|---|

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION               | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         |
|---------------------------|-------------------------------------|-------|-------------------|---------------|--|-----------------|------|---------|
|                           |                                     |       |                   |               |  | VIALS / JARS    | BAGS | BOTTLES |
| 1                         | 454253 WR10-R009                    |       | Aug 15/19         | Soil          |  | 3               |      |         |
| 2                         | 454254 WR10-010                     |       |                   |               |  | 3               |      |         |
| 3                         | 454255 <del>WR10-010</del> WR10-011 |       |                   |               |  | 3               |      |         |
| 4                         | 454256 WR10-012                     |       |                   |               |  | 3               |      |         |
| 5                         | 454257 WR10-013                     |       |                   |               |  | 3               |      |         |
| 6                         | 454258 WR10-014                     |       |                   |               |  | 3               |      |         |
| 7                         | 454259 WR10-015                     |       |                   |               |  | 3               |      |         |
| 8                         | 454260 WR10-016                     |       |                   |               |  | 3               |      |         |
| 9                         | 454261 WR11-009                     |       |                   |               |  | 3               |      |         |
| 10                        | 454262 WR11-010                     |       |                   |               |  | 3               |      |         |

|  |                                      |  |                                |                    |                           |
|--|--------------------------------------|--|--------------------------------|--------------------|---------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> <i>[Signature]</i> | Date/Time:<br><u>Aug 16/19 13:00</u> | Samples Received By (Print Name and Sign):<br><u>[Signature]</u> | Date/Time:<br><u>8/20/2019</u> | Pink Copy - Client | Page <u>2</u> of <u>5</u> |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):                       | Date/Time:                     | Yellow Copy - AGAT | No: AB <u>0901</u>        |
| Samples Relinquished By (Print Name and Sign):   | Date/Time:                           | Samples Received By (Print Name and Sign):                       | Date/Time:                     | White Copy - AGAT  |                           |



# AGAT Laboratories

2910 12 Street NE  
 Calgary, Alberta T2E 7P7  
 P: 403-735-2005 • F: 403-735-2771  
 webearth.agatlabs.com

## Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
 AGAT Job Number: 19E507199  
 Date and Time: \_\_\_\_\_

### Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-6245)

19 AUG 20 10:24

**Report Information**

Company: see page 1  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: \_\_\_\_\_  
 Sampled By: \_\_\_\_\_

**Report Information**

1. Name: see page 1  
 Email: \_\_\_\_\_  
 2. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_  
 3. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Three Day (50%)  
 Four Day (25%)

Rush TAT \_\_\_\_\_  
 Date Required: \_\_\_\_\_

SEE I  
 SUR  
 BRE/  
 CONTAC  
 FOR A  
 INFO

**Invoice To** Same Yes  / No

Company: see page 1  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: \_\_\_\_\_  
 Standing Offer #: \_\_\_\_\_

**Requirements** (Selection may impact detection limits)

CCME  AB Tier 1

Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  Acute

**Report Format**

Single  Sample Per Page  
 Multiple  Samples Per Page  
 Export

|   |   |   |  |  |   |   |                         |   |  |   |
|---|---|---|--|--|---|---|-------------------------|---|--|---|
| Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input checked="" type="checkbox"/> CCME/AB: BTEX/F1-F2 | <input type="checkbox"/> BC: BTEX/MPH/EPH | <input type="checkbox"/> BC: LEPH/HEPH | <input type="checkbox"/> SK: BTEX/TVH/C11-C22, C23-060 | Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Routine Water Chemistry | Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture |
|---|---|---|--|--|---|---|-------------------------|---|--|---|

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         |
|---------------------------|-----------------------|-------|-------------------|---------------|--|-----------------|------|---------|
|                           |                       |       |                   |               |  | VALS / JARS     | BAGS | BOTTLES |
| 1                         | 454263 WR11-011       |       | Aug 15/19         | soil          |  | 3               |      |         |
| 2                         | 454264 WR11-012       |       | ↓                 | ↓             |  | 3               |      |         |
| 3                         | 454265 WR11-013       |       | ↓                 | ↓             |  | 3               |      |         |
| 4                         | 454266 WR11-014       |       | ↓                 | ↓             |  | 3               |      |         |
| 5                         | 454267 WR11-015       |       | ↓                 | ↓             |  | 3               |      |         |
| 6                         | 454268 WR11-016       |       | ↓                 | ↓             |  | 3               |      |         |
| 7                         | 454269 WRI-001 006    |       | Aug 16/19         | ↓             |  | 3               |      |         |
| 8                         | 454270 WRI-002 007    |       | ↓                 | ↓             |  | 3               |      |         |
| 9                         | 454271 WRI-003 008    |       | ↓                 | ↓             |  | 3               |      |         |
| 10                        | 454272 WRI-004 009    |       | ↓                 | ↓             |  | 3               |      |         |

Sample Relinquished By (Print Name and Sign):  
Stephanie Hannem *Stannem*  
 Date/Time: Aug 16/19 13:00

Samples Received By (Print Name and Sign):  
 \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

Date/Time: 8/20/19  
 Date/Time: \_\_\_\_\_

Page 3 of 19  
 Pink Copy - Client  
 Yellow Copy - AGAT  
 White Copy - AGAT  
 No: AB 0901



# AGAT Laboratories

2910 12 Street NE  
 Calgary, Alberta T2E 7P7  
 P: 403-735-2005 • F: 403-735-2771  
 webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
 AGAT Job Number: **19E50779**  
 Date and Time: \_\_\_\_\_

## Chain of Custody Record

Emergency Support Services Hotline 1-855-ARAT 2345 (1-855-2742-8245)

**Report Information**

Company: see page 1  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: \_\_\_\_\_  
 Sampled By: \_\_\_\_\_

**Report Information**

1. Name: see page 1  
 Email: \_\_\_\_\_  
 2. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_  
 3. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Three Day (50%)  
 Four Day (25%)

Date Required: \_\_\_\_\_

19 AUG 20 10:24

SEE I  
 SUR  
 BRE/  
 CONTAC  
 FOR A  
 INFO

**Invoice To** Same Yes  / No

Company: see page 1  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: \_\_\_\_\_  
 Standing Offer #: \_\_\_\_\_

**Requirements (Selection may impact detection limits)**

CCME  AB Tier 1

Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  Acute

**Report Format**

Single  Sample Per Page  
 Multiple  Samples Per Page  
 Export

|   |  |   |  |  |  |  |  |  |   |  |
|---|--|---|--|--|--|--|--|--|---|--|
| Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input checked="" type="checkbox"/> CCME/AB : BTEX/F1-F2 | <input type="checkbox"/> BC: BTEX/VPH/EPH | <input type="checkbox"/> BC: LEPH/NEPH | <input type="checkbox"/> SK: BTEX/VPH/C11-C22, C23-C60 | <input type="checkbox"/> Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | <input type="checkbox"/> Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | <input type="checkbox"/> Routine Water Chemistry | <input type="checkbox"/> Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | <input type="checkbox"/> Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | <input type="checkbox"/> Particle Size: <input type="checkbox"/> Sieve (75um) <input type="checkbox"/> Texture |
|---|--|---|--|--|--|--|--|--|---|--|

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         |
|---------------------------|-----------------------|-------|-------------------|---------------|--|-----------------|------|---------|
|                           |                       |       |                   |               |  | VIALS / JARS    | BAGS | BOTTLES |
| 1                         | 454273 WR1-010        |       | Aug 16/19         | Soil          |  | 3               |      |         |
| 2                         | 454274 WR2-006        |       |                   |               |  | 3               |      |         |
| 3                         | 454275 WR2-007        |       |                   |               |  | 3               |      |         |
| 4                         | 454476 WR2-008        |       |                   |               |  | 3               |      |         |
| 5                         | 454477 WR2-009        |       |                   |               |  | 3               |      |         |
| 6                         | 454478 WR2-010        |       |                   |               |  | 3               |      |         |
| 7                         | 454479 WR2-011        |       |                   |               |  | 3               |      |         |
| 8                         | 454480 WR1-R010       |       |                   |               |  | 3               |      |         |
| 9                         | 454481 WR12-004       |       |                   |               |  | 3               |      |         |
| 10                        | 454482 WR12-005       |       |                   |               |  | 3               |      |         |

Sample Relinquished By (Print Name and Sign):  
Stephanie Hannem

Sample Relinquished By (Print Name and Sign):  
 \_\_\_\_\_

Sample Relinquished By (Print Name and Sign):  
 \_\_\_\_\_

Date/Time: Aug 16/19 13:00

Samples Received By (Print Name and Sign):  
Ry de Geron

Samples Received By (Print Name and Sign):  
 \_\_\_\_\_

Samples Received By (Print Name and Sign):  
 \_\_\_\_\_

Date/Time: 8/20/19

Pink Copy - Client  
 Yellow Copy - AGAT  
 White Copy - AGAT

Page 4 of 5

Nº: AB 0901





# AGAT Laboratories

2910 12 Street NE  
 Calgary, Alberta T2E 7P7  
 P: 403-735-2005 • F: 403-735-2771  
 webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
 AGAT Job Number: 19E507199  
 Date and Time: \_\_\_\_\_

## Chain of Custody Record

Emergency Support Services Hotline 1-800-AGAT 24/5 (1-800-242-8245)

### Report Information

Company: see page 1  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: \_\_\_\_\_  
 Sampled By: \_\_\_\_\_

### Report Information

1. Name: see page 1  
 Email: \_\_\_\_\_  
 2. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_  
 3. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_

### Turnaround Time Required (TAT)

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Three Day (50%)  
 Four Day (25%)

Date Required: \_\_\_\_\_

SEE I  
 SUR  
 BRE/  
 CONTAC  
 FOR A  
 INFO

### Invoice To

Same Yes  / No

Company: see page 1  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: \_\_\_\_\_  
 Standing Offer #: \_\_\_\_\_

### Requirements (Selection may impact detection limits)

CCME  AB Tier 1  
 Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area  
 Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  
 Acute

### Report Format

Single  Sample Per Page  
 Multiple  Samples Per Page  
 Export

|   |
|---|
| Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50                   |
| <input checked="" type="checkbox"/> CCME/AB : BTEX/F1-F4 <input type="checkbox"/> CCME/AB : BTEX/F1-F2  |
| <input type="checkbox"/> BC: BTEX/APH/EPH <input type="checkbox"/> BC: LEPH/HEPH  |
| SK: BTEX/TVH/C11-C22, C23-O60   |
| Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup>       |
| Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> |
| Routine Water Chemistry   |
| Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK   |
| Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli  |
| Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture   |

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | DEPTH    | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*)<br>*ADDITIONAL FEE | # OF CONTAINERS |      |         | Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input checked="" type="checkbox"/> CCME/AB : BTEX/F1-F4 <input type="checkbox"/> CCME/AB : BTEX/F1-F2 | <input type="checkbox"/> BC: BTEX/APH/EPH <input type="checkbox"/> BC: LEPH/HEPH | SK: BTEX/TVH/C11-C22, C23-O60 | Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Water Metals: <input type="checkbox"/> Dissolved <input type="checkbox"/> Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Routine Water Chemistry | Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture |  |
|---------------------------|-----------------------|----------|-------------------|---------------|---|-----------------|------|---------|---|--|--|-------------------------------|---|---|-------------------------|---|--|---|--|
|                           |                       |          |                   |               |   | VIALS/JARS      | BAGS | BOTTLES |   |  |  |                               |   |   |                         |   |  |   |  |
| 1                         | 454283                | WR12-006 | Aug 16/19         | soil          |   | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |  |
| 2                         | 454284                | WR13-007 |                   |               |   | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |  |
| 3                         | 454285                | WR13-008 |                   |               |   | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |  |
| 4                         | 454286                | WR13-009 |                   |               |   | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |  |
| 5                         | 454287                | WR13-010 |                   |               |   | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |  |
| 6                         | 454288                | WR13-011 |                   |               |   | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |  |
| 7                         | 454289                | WR13-012 |                   |               |   | 3               |      |         |   |  |  |                               |   |   |                         |   |  |   |  |
| 8                         | 454290                | WR4-010  |                   |               |   | 1               |      |         |   |  |  |                               |   |   |                         |   |  |   |  |
| 9                         | 454291                | WR4-014  |                   |               | vials already at lab for BTEX/F1                              | 1               |      |         |   |  |  |                               |   |   |                         |   |  |   |  |
| 10                        |                       |          |                   |               |   |                 |      |         |   |  |  |                               |   |   |                         |   |  |   |  |

|  |                                      |   |                              |                           |
|--|--------------------------------------|---|------------------------------|---------------------------|
| Sample Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> <u>Athannem</u> | Date/Time:<br><u>Aug 16/19 13:00</u> | Sample Received By (Print Name and Sign):<br><u>[Signature]</u> | Date/Time:<br><u>8/16/19</u> | Page <u>5</u> of <u>5</u> |
| Sample Relinquished By (Print Name and Sign):  | Date/Time:                           | Sample Received By (Print Name and Sign):                       | Date/Time:                   |                           |
| Sample Relinquished By (Print Name and Sign):  | Date/Time:                           | Sample Received By (Print Name and Sign):                       | Date/Time:                   | No: AB <u>0901</u>        |



### RECEIVING BASICS - Shipping

Company/Consultant: IEG Consultants  
 Courier: Canadian North Prepaid Collect  
 Waybill# 518-YEV-10630793  
 Branch  EDM  GP  FN  FM  RD  VAN  LYD  FSJ  EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No  
 Custody Seal Intact: Yes  No  NA  
 TAT: <24hr  24-48hr  48-72hr  Reg  Other \_\_\_\_\_  
 Cooler Quantity: 2

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No  
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\*  
 Earliest Expiry: \_\_\_\_\_  
 Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  No Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No  
 International Samples: Yes  No  
 Tape Sealed: Yes  No  
 Coolant Used: Icepack  Bagged Ice  Free Ice  Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

**FROZEN (Please Circle if samples received Frozen)**

1 (Bottle/Jar) 8.1 + 8.1 + 8.1 = 8.1 °C 2 (Bottle/Jar) 5.3 + 5.4 + 5.4 = 5.4 °C 6.7°C  
 3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19 E507199  
 Samples Damaged: Yes  No If YES why?  
 No Bubble Wrap  Frozen  Courier   
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes  No  
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* Subcontracted Analysis (See CPM)



CANADIAN NORTH  
CARGO

518-YEV-10630793

Shipper's Name and Address  
Nom et adresse de l'expéditeur

IEG - Camp Farewell  
PO Box 1038  
Inuvik  
Northwest Territories, Canada  
403-829-3098  
Attn: Nicole Wills

Consignee's Name and Address  
Nom et adresse du destinataire

AGAT Laboratories Ltd  
6310 Roper Road NW  
Edmonton  
Alberta, Canada  
T6E 6S4 780 395 2525  
Attn: Chantal Seoney

Not negotiable / Non négociable

Air Waybill / Lettre de transport aérien

Issued by / Émis par

Canadian North, 101 3731 52 Ave E.  
Edmonton International Airport, AB,  
Canada, T9E0V4

Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.  
Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.

It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF, ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR.

Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur

Accounting Information / Renseignements comptables

KLO100CW

Agent's IATA Code / Code IATA de l'agent

Account Number / Numéro de compte

IEG Consultants Ltd.  
500 - 2618 Hopewell Place NE  
Calgary  
AB, Canada  
T1Y 7J7  
PO:

Airport of Departure (Address of First Carrier) and Requested Routing  
Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé

Inuvik

To / à By first carrier / Par premier transport To / à by / par To / à by / par  
YEG CANADIAN NORTH

Currency Monnaie CHGS Code Frais WT / Poids-Val Other/Autres Declared Value for Carriage Valeur déclarée pour la marchandise Declared value for Customs Valeur déclarée pour la douane

CDN PX PPD Payé X COLL Du PPD Payé X COLL Du NDV NCV

Airport of Destination / Aéroport de destination

Edmonton

Flight Date - For Carrier Use Only  
Vol, Date - Réserve au Transporteur

Amount of Insurance Montant de l'assurance INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance" ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance"

Handling Information / Renseignements pour le traitement de l'expédition

H4PU

SCI

| No. of Pieces / Nombre de colis / RCP | Gross Weight / Poids brut | kg / lb | Chargeable Weight / Poids de taxation | Rate / Charge / Tarif / Montant | Interline | Total    | Commodity Item No. / No. d'article de la marchandise | Description of Goods (inc. Dimensions or Volume) / Description des marchandises (y compris dimensions ou volume) |
|---------------------------------------|---------------------------|---------|---------------------------------------|---------------------------------|-----------|----------|--|--|
| 2                                     | 34 K                      |         | 34                                    | 7.57                            |           | \$257.38 | GAD  | Soil Samples 60cm x 33cm x 70cm  |

2 34 34 \$257.38

\$257.38

|  |  |
|--|--|
| Weight Charge / Prepaid / Porte payé<br><b>\$257.38</b>                        | Taxation au poids / Collect / Port dû      |
| Valuation Charge   | Taxation à la valeur                       |
| Tax<br><b>\$16.72</b>  | Taxe                                       |
| Total other Charges Due Agent  | Total des autres frais dûs à l'agent       |
| Total other Charges Due Carrier<br><b>\$76.99</b>                              | Total des autres frais dûs au              |
| Total Prepaid / Total port payé<br><b>\$351.09</b>                             | Total collect / Total port dû              |
| For Carrier's User only at Destination / Réserve au transporteur à destination | Charges at Destination / Frais à l'arrivée |

Other Charges / Autres frais

5T Nav Can Surcharge = 12.87, ACS Screening Fee = 7.50, 5T Fuel Surcharge = 56.62, GST/HST = 16.72

Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure où une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable.

Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent

17 Aug 2019

YEV

Executed on (Date) at (Place)  
Fait le (Date) à (Lieu)

Signature of Issuing Carrier or its Agent  
Signature du Transporteur émetteur ou de son Agent

Total Collect Charges / Total Dû

518-YEV-10630793

Copy 2 shipper / consignee

Track online at [CanadianNorth.com/Cargo/Track](http://CanadianNorth.com/Cargo/Track).



**CANADIAN NORTH**

**518-YEV-10630793**

Shipper's Name and Address  
Nom et adresse de l'expéditeur

IEG - Camp Farewell  
PO Box 1038  
Inuvik  
Northwest Territories, Canada  
403-829-3098  
Attn: Nicole Willis

Consignee's Name and Address  
Nom et adresse du destinataire

AGAT Laboratories Ltd  
6310 Roper Road NW  
Edmonton  
Alberta, Canada  
T6E 6S4 780 395 2525  
Attn: Chantal Seeney

Not negotiable / Non négociable

**Air Waybill / Lettre de transport aérien**

Issued by / Émise par

Canadian North; 101 3731 52 Ave E,  
Edmonton International Airport, AB,  
Canada, T9E0V4

Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.  
Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.

It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR.

Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur

Accounting Information / Renseignements comptables

**KLO100CW**

Agent's IATA Code / Code IATA de l'agent

Account Number / Numéro de compte

IEG Consultants Ltd.  
500 - 2618 Hopewell Place NE  
Calgary  
AB, Canada  
T1Y 7J7  
PO:

Airport of Departure (Address of First Carrier) and Requested Routing  
Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé

**Inuvik**

To / à  
**YEG**

By first carrier / Par premier transport  
**CANADIAN NORTH**

To / à by / par To / à by / par

Currency  
Monnaie  
**CDN**

CHGS  
Code Frais  
**PX**

WT / Poids-Vol  
**PPD Payé X**

Other/Autres  
**COLL Du X**

Declared Value for Carriage  
Valeur déclarée pour la transport  
**NDV**

Declared value for Customs  
Valeur déclarée pour la douane  
**NCV**

Airport of Destination / Aéroport de destination

**Edmonton**

Flight Date - For Carrier Use Only  
Vol, Date - Réservé au Transporteur

Amount of Insurance  
Montant de l'assurance

INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance"  
ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance"

Handling Information / Renseignements pour le traitement de l'expédition

**H4PU**

**SCI**

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut | kg<br>lb | Chargeable<br>Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total           | Commodity Item<br>No.<br>No. d'article de<br>la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|----------------------------|----------|---|----------------------------------|-----------|-----------------|---|---|
| 2                                       | 34                         | K        | 34  | 7.57                             |           | \$257.38        | GAD   | Soil Samples 60cm x 33cm x 70cm   |
| <b>2</b>                                | <b>34</b>                  |          | <b>34</b>                                 |                                  |           | <b>\$257.38</b> |   |   |

|   |  |
|---|--|
| Weight Charge<br>Prepaid / Porte payé<br><b>\$257.38</b>                        | Taxation au poids<br>Collect / Port dû     |
| Valuation Charge  | Taxation à la valeur                       |
| Tax<br><b>\$16.72</b>   | Taxe                                       |
| Total other Charges Due Agent   | Total des autres frais dûs à l'agent       |
| Total other Charges Due Carrier<br><b>\$76.99</b>                               | Total des autres frais dûs au              |
| Total Prepaid / Total port payé<br><b>\$351.09</b>                              | Total collect / Total port dû              |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination | Charges at Destination / Frais à l'arrivée |

Other Charges / Autres frais

**5T Nav Can Surcharge = 12.87, ACS Screening Fee = 7.50, 5T Fuel Surcharge = 56.62, GST/HST = 16.72**

Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.  
L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure où une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable.

Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent

17 Aug 2019

YEV

Executed on  
Fait le

(Date)  
(Date)

at  
à

(Place)  
(Lieu)

Signature of Issuing Carrier or its Agent  
Signature du Transporteur émetteur ou de son Agent

Total Collect Charges / Total Dû

**518-YEV-10630793**

Copy 2 shipper / consignee

Track online at [CanadianNorth.com/Cargo/Track](http://CanadianNorth.com/Cargo/Track).

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E509851

TRACE ORGANICS REVIEWED BY: Laarni Hafso, Laboratory Manager

DATE REPORTED: Aug 30, 2019

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E509851

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-30

| Parameter                      | Unit  | SAMPLE DESCRIPTION:      |        |        |            |        |        |            |        |        |            |        |        |            |        |        |            |        |        |            |     |  |
|--------------------------------|-------|--------------------------|--------|--------|------------|--------|--------|------------|--------|--------|------------|--------|--------|------------|--------|--------|------------|--------|--------|------------|-----|--|
|                                |       | P19-2-SA1                |        |        | P19-2-SA2  |        |        | P19-3-SA1  |        |        | P19-4-SA1  |        |        | P19-4-SA2  |        |        | P19-5-SA1  |        |        | P19-6-SA1  |     |  |
|                                |       | SAMPLE TYPE: Soil        |        |        | Soil       |        |        | Soil       |        |        | Soil       |        |        | Soil       |        |        | Soil       |        |        | Soil       |     |  |
|                                |       | DATE SAMPLED: 2019-08-21 |        |        | 2019-08-21 |        |        | 2019-08-21 |        |        | 2019-08-21 |        |        | 2019-08-21 |        |        | 2019-08-21 |        |        | 2019-08-21 |     |  |
| G / S                          | RDL   | 472136                   | 472147 | 472148 | 472149     | 472150 | 472151 | 472152     |        |        |            |        |        |            |        |        |            |        |        |            |     |  |
| Benzene                        | mg/kg | 0.005                    | 0.058  | <0.005 | <0.005     | <0.005 | <0.005 | <0.005     | <0.005 | <0.005 | <0.005     | <0.005 | <0.005 | <0.005     | <0.005 | <0.005 | <0.005     | <0.005 | <0.005 | <0.005     |     |  |
| Toluene                        | mg/kg | 0.05                     | 0.60   | <0.05  | <0.05      | <0.05  | <0.05  | <0.05      | <0.05  | <0.05  | <0.05      | <0.05  | <0.05  | <0.05      | <0.05  | <0.05  | <0.05      | <0.05  | <0.05  | <0.05      |     |  |
| Ethylbenzene                   | mg/kg | 0.01                     | 2.52   | <0.01  | <0.01      | <0.01  | <0.01  | <0.01      | <0.01  | <0.01  | <0.01      | <0.01  | 0.04   | 0.01       |        |        |            |        |        |            |     |  |
| Xylenes                        | mg/kg | 0.05                     | 21.9   | 0.05   | <0.05      | <0.05  | <0.05  | <0.05      | <0.05  | <0.05  | <0.05      | <0.05  | <0.05  | <0.05      | <0.05  | <0.05  | <0.05      | <0.05  | <0.05  | 0.06       |     |  |
| C6 - C10 (F1)                  | mg/kg | 10                       | 660    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        |     |  |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                       | 630    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        |     |  |
| C10 - C16 (F2)                 | mg/kg | 10                       | 700    | 90     | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        |     |  |
| C16 - C34 (F3)                 | mg/kg | 10                       | 100    | 90     | 70         | 30     | 20     | 20         | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | 40         |     |  |
| C34 - C50 (F4)                 | mg/kg | 10                       | 10     | <10    | 20         | <10    | 20     | <10        | 20     | <10    | <10        | <10    | <10    | <10        | <10    | <10    | <10        | <10    | <10    | 10         |     |  |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                     | N/A    | N/A    | N/A        | N/A    | N/A    | N/A        | N/A    | N/A    | N/A        | N/A    | N/A    | N/A        | N/A    | N/A    | N/A        | N/A    | N/A    | N/A        |     |  |
| Moisture Content               | %     | 1                        | 9      | 14     | 43         | 7      | 24     | 19         | 9      |        |            |        |        |            |        |        |            |        |        |            |     |  |
| Surrogate                      | Unit  | Acceptable Limits        |        |        |            |        |        |            |        |        |            |        |        |            |        |        |            |        |        |            |     |  |
| Toluene-d8 (BTEX)              | %     | 50-150                   | 111    | 103    | 101        | 101    | 100    | 100        | 100    | 100    | 100        | 100    | 100    | 100        | 100    | 100    | 100        | 100    | 100    | 100        | 104 |  |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150                   | 140    | 93     | 139        | 112    | 112    | 102        | 130    |        |            |        |        |            |        |        |            |        |        |            |     |  |
| o-Terphenyl (F2-F4)            | %     | 50-150                   | 97     | 99     | 115        | 96     | 121    | 98         | 93     |        |            |        |        |            |        |        |            |        |        |            |     |  |

Certified By:

# Certificate of Analysis

AGAT WORK ORDER: 19E509851

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

**Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)**

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-30

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

472136-472152 Results are based on the dry weight of the sample.  
The C6-C10 (F1) fraction is calculated using toluene response factor.  
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
Quality control data is available upon request.  
Assistance in the interpretation of data is available upon request.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
The chromatogram returned to baseline by the retention time of nC50.  
Extraction and holding times were met for this sample.  
C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:



## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E509851  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

### Trace Organics Analysis

| RPT Date:   |       |           | DUPLICATE |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|---|-------|-----------|-----------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER   | Batch | Sample Id | Dup #1    | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|   |       |           |           |        |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |           |        |       |                |              |                    |       |          |                    |       |          |                   |       |  |
| Benzene   | 1986  | 468731    | 20.1      | 16.8   | 17.9% | < 0.005        | 105%         | 80%                | 120%  | 108%     | 80%                | 120%  | 106%     | 60%               | 140%  |  |
| Toluene   | 1986  | 468731    | 0.45      | 0.38   | 17.0% | < 0.05         | 105%         | 80%                | 120%  | 104%     | 80%                | 120%  | 95%      | 60%               | 140%  |  |
| Ethylbenzene  | 1986  | 468731    | 24.0      | 20.9   | 13.8% | < 0.01         | 102%         | 80%                | 120%  | 103%     | 80%                | 120%  | 98%      | 60%               | 140%  |  |
| Xylenes   | 1986  | 468731    | 116       | 99.7   | 15.0% | < 0.05         | 112%         | 80%                | 120%  | 88%      | 80%                | 120%  | 84%      | 60%               | 140%  |  |
| C6 - C10 (F1)   | 1986  | 468731    | 260       | 290    | 11.0% | < 10           | 96%          | 80%                | 120%  | 85%      | 80%                | 120%  | 77%      | 60%               | 140%  |  |
| C10 - C16 (F2)  | 1471  | 468731    | 60        | 70     | 15.4% | < 10           | 119%         | 80%                | 120%  | 102%     | 80%                | 120%  | 114%     | 60%               | 140%  |  |
| C16 - C34 (F3)  | 1471  | 468731    | 60        | 70     | 15.4% | < 10           | 119%         | 80%                | 120%  | 101%     | 80%                | 120%  | 110%     | 60%               | 140%  |  |
| C34 - C50 (F4)  | 1471  | 468731    | 30        | 20     | NA    | < 10           | 120%         | 80%                | 120%  | 96%      | 80%                | 120%  | 107%     | 60%               | 140%  |  |
| Moisture Content  | 1471  | 468731    | 24        | 25     | 4.1%  | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

Certified By: \_\_\_\_\_





## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E509851  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |





# AGAT Laboratories

## SAMPLE INTEGRITY RECEIPT FORM

### RECEIVING BASICS - Shipping

Company/Consultant: JEG  
 Courier: Can North Prepaid Collect  
 Waybill# 518-YEN-0635494  
 Branch  EDM GP FN FM RD VAN LYD FSJ EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once:  Yes No  
 Custody Seal Intact: Yes No  NA  
 TAT: <24hr 24-48hr 48-72hr  Reg Other \_\_\_\_\_  
 Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No  
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\*  
 Earliest Expiry: \_\_\_\_\_  
 Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No  
 International Samples: Yes  No  
 Tape Sealed: Yes  No  
 Coolant Used: Icepack  Bagged Ice Free Ice Free Water None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 4.7 + 9.1 + 9.0 = 9.3 °C    2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 (If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E509851  
 Samples Damaged: Yes  No If YES why?  
 No Bubble Wrap Frozen Courier  
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes No  
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* Subcontracted Analysis (See CPM)



CANADIAN NORTH  
CARGO

518-YEV-10635494

|  |   |   |  |
|--|---|---|--|
| Shipper's Name and Address<br>Nom et adresse de l'expéditeur   |   | Not negotiable / Non négociable<br><b>Air Waybill / Lettre de transport aérien</b><br>Issued by / Émise par   |  |
| IEG<br>Inuvik<br>Northwest Territories, Canada<br>X0E 0T0 403-829-3048<br>Attn: Kim MacKenzie  |   | Canadian North, 101 3731 52 Ave E,<br>Edmonton International Airport, AB,<br>Canada, T9E0V4   |  |
| Consignee's Name and Address<br>Nom et adresse du destinataire   |   | Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.<br>Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.  |  |
| AGAT Laboratories Ltd<br>6310 Roper Road NW<br>Edmonton<br>Alberta, Canada<br>T6E 6S4 780-395-2525<br>Attn: Abbey  |   | It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF, ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES. À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR. |  |
| Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur   |   | Accounting Information / Renseignements comptables<br><b>KLO100CW</b>   |  |
| Agent's IATA Code / Code IATA de l'agent   | Account Number / Numéro de compte                                 | IEG Consultants Ltd,<br>500 - 2618 Hopewell Place NE<br>Calgary<br>AB, Canada<br>T1Y 7J7<br>PO:   |  |
| Airport of Departure (Address of First Carrier) and Requested Routing<br>Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé<br><b>Inuvik</b>   |   |   |  |
| To / à<br><b>YEG</b>   | By first carrier / Par premier transport<br><b>CANADIAN NORTH</b> | To / à  | by / par   |
| Airport of Destination / Aéroport de destination<br><b>Edmonton</b>  |   | Flight Date - For Carrier Use Only<br>Vol. Date - Réservé au Transporteur   |  |
| Currency<br>Monnaie  | CHGS<br>Code Frais  | WT / Poids-Vol  | Other/Autres   |
| <b>CDN</b>   | <b>PX</b>   | PPD Payé<br><b>X</b>  | COLL Du<br><b>X</b>  |
| Amount of Insurance<br>Montant de l'assurance  |   | Declared Value for Carriage<br>Valeur déclarée pour la transport  | Declared value for Customs<br>Valeur déclarée pour la douane |
|  |   | <b>NDV</b>  | <b>NCV</b>   |
| Insurance - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance".<br>ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance" |   |   |  |
| Handling Information / Renseignements pour le traitement de l'expédition<br><b>HFPU</b>  |   |   |  |
| <b>SCI</b>   |   |   |  |

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut | kg<br>lb | Chargeable<br>Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total | Commodity Item<br>No.<br>No. d'article de<br>la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|----------------------------|----------|---|----------------------------------|-----------|-------|---|---|
| 3                                       | 55 K                       |          | 55  |                                  |           |       | GAD   | Soil Samples 60cm x 33cm x 106cm  |
| 3                                       | 55                         |          | 55  |                                  |           |       |   |   |

|   |  |                                  |
|---|--|----------------------------------|
| Weight Charge<br>Prepaid / Porte payé   | Taxation au poids<br>Collect / Port dû     | Other Charges / Autres frais     |
| Valuation Charge  | Taxation à la valeur                       |                                  |
| Tax   | Taxe                                       |                                  |
| Total other Charges Due Agent   | Total des autres frais dûs à l'agent       |                                  |
| Total other Charges Due Carrier   | Total des autres frais dûs au              |                                  |
| Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent                   |  |                                  |
| Total Prepaid / Total port payé   | Total collect / Total port dû              |                                  |
| 23 Aug 2019   |  | YEV                              |
| Executed on<br>Fait le  | (Date)<br>(Date)                           | at<br>à                          |
| Signature of issuing Carrier or its Agent<br>Signature du Transporteur émetteur ou de son Agent |  |                                  |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination                 | Charges at Destination / Frais à l'arrivée | Total Collect Charges / Total Du |

518-YEV-10635494

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E510215

TRACE ORGANICS REVIEWED BY: Melinda Guay, Technical Reviewer

DATE REPORTED: Aug 31, 2019

PAGES (INCLUDING COVER): 14

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E510215

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
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<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-31

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            | WR4-017    | WR4-018    | WR4-019    | WR4-020    | WR4-021    | WR4-022    | WR4-023    | WR4-024    |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | G / S               | RDL        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
| DATE SAMPLED:                  |       | 2019-08-18          | 2019-08-18 | 2019-08-18 | 2019-08-18 | 2019-08-18 | 2019-08-18 | 2019-08-18 | 2019-08-18 | 2019-08-18 | 2019-08-18 |
| Benzene                        | mg/kg | 0.005               | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | 20         | <10        | <10        | 20         | 10         | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | 20         | <10        | <10        | 20         | 10         | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 150        | 160        | 150        | 370        | 190        | 160        | 120        | 200        | 200        |
| C16 - C34 (F3)                 | mg/kg | 10                  | 300        | 320        | 360        | 510        | 350        | 320        | 280        | 370        | 370        |
| C34 - C50 (F4)                 | mg/kg | 10                  | 40         | 50         | 70         | 60         | 60         | 50         | 50         | 50         | 50         |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 12         | 10         | 11         | 12         | 11         | 11         | 10         | 11         | 11         |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 100        | 100        | 100        | 101        | 100        | 101        | 101        | 101        | 100        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 57         | 65         | 81         | 89         | 73         | 77         | 73         | 74         | 74         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 72         | 71         | 85         | 86         | 69         | 78         | 72         | 69         | 69         |

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## Certificate of Analysis

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PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-31

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR12-007   | WR12-008   | WR12-009   | WR2-012    | WR2-013    | WR2-014    | WR2-015    | WR2-016    |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-19 | 2019-08-19 | 2019-08-19 | 2019-08-19 | 2019-08-19 | 2019-08-19 | 2019-08-19 | 2019-08-19 |
|                                |       | G / S               | RDL    | 474455     | 474458     | 474459     | 474460     | 474461     | 474462     | 474463     | 474464     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | 10     | 10         | <10        | 20         | 10         | <10        | 30         | 20         |            |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | 10     | 10         | <10        | 20         | 10         | <10        | 30         | 20         |            |
| C10 - C16 (F2)                 | mg/kg | 10                  | 220    | 130        | 200        | 630        | 500        | 390        | 540        | 490        |            |
| C16 - C34 (F3)                 | mg/kg | 10                  | 320    | 310        | 410        | 290        | 310        | 230        | 250        | 240        |            |
| C34 - C50 (F4)                 | mg/kg | 10                  | 90     | 70         | 100        | 70         | 100        | 70         | 70         | 70         |            |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |            |
| Moisture Content               | %     | 1                   | 17     | 11         | 11         | 18         | 18         | 19         | 19         | 17         |            |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 100    | 100        | 100        | 100        | 100        | 100        | 100        | 101        | 101        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 70     | 68         | 71         | 83         | 71         | 70         | 74         | 88         |            |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 71     | 91         | 94         | 89         | 84         | 87         | 90         | 90         |            |

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PROJECT: A04012A11

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### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-31

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | WR2-017    | WR2-R017   | UN19-001A  | UN19-001B  | UN19-002A  | UN19-002B  | UN19-003A  | UN19-003B  |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-19 | 2019-08-19 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 |
|                                |       | G / S               | RDL    | 474465     | 474466     | 474489     | 474498     | 474499     | 474500     | 474501     | 474502     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | 10     | 10         | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | 10     | 10         | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 470    | 480        | 20         | 20         | 20         | 10         | 10         | 20         | 20         |
| C16 - C34 (F3)                 | mg/kg | 10                  | 280    | 330        | 50         | 50         | 60         | 40         | 40         | 70         | 70         |
| C34 - C50 (F4)                 | mg/kg | 10                  | 90     | 90         | 20         | 20         | <10        | 10         | <10        | 10         | 10         |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 17     | 16         | 23         | 25         | 30         | 23         | 26         | 24         | 24         |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 100    | 100        | 100        | 97         | 101        | 100        | 100        | 100        | 101        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 105    | 73         | 82         | 83         | 106        | 93         | 119        | 91         | 91         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 95     | 93         | 91         | 84         | 114        | 89         | 99         | 121        | 121        |

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PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-31

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        | UN19-004A  | UN19-004B  | UN19-005A  | UN19-005B  | UN19-006A  | UN19-006B  | UN19-007A  | UN19-007B  |
|--------------------------------|-------|---------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                |       | SAMPLE TYPE:        |        | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                |       | DATE SAMPLED:       |        | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 |
|                                |       | G / S               | RDL    | 474503     | 474504     | 474505     | 474506     | 474507     | 474508     | 474509     | 474510     |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10        | <10        | <10        | <10        | <10        | <10        | <10        |
| C10 - C16 (F2)                 | mg/kg | 10                  | 20     | 10         | 10         | 20         | 20         | 20         | 10         | 20         | 10         |
| C16 - C34 (F3)                 | mg/kg | 10                  | 50     | 70         | 70         | 70         | 70         | 50         | 50         | 60         | 40         |
| C34 - C50 (F4)                 | mg/kg | 10                  | 10     | 10         | <10        | 10         | <10        | <10        | <10        | <10        | <10        |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |
| Moisture Content               | %     | 1                   | 25     | 26         | 23         | 23         | 21         | 21         | 23         | 22         | 22         |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |            |            |            |            |            |            |            |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101    | 99         | 100        | 101        | 101        | 101        | 101        | 100        | 100        |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 93     | 86         | 86         | 93         | 81         | 87         | 105        | 89         | 89         |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 101    | 93         | 99         | 115        | 96         | 100        | 107        | 104        | 104        |

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## Certificate of Analysis

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CLIENT NAME: IEG CONSULTANTS LTD

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SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-31

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |        |            |        |            |        |            |  |
|--------------------------------|-------|---------------------|--------|------------|--------|------------|--------|------------|--|
|                                |       | UN19-008A           |        | UN19-008B  |        | UN19-R09A  |        | UN19-WCA   |  |
|                                |       | Soil                |        | Soil       |        | Soil       |        | Soil       |  |
|                                |       | 2019-08-21          |        | 2019-08-21 |        | 2019-08-21 |        | 2019-08-21 |  |
| G / S                          | RDL   | 474511              | 474512 | 474514     | 474516 |            |        |            |  |
| Benzene                        | mg/kg | 0.005               | <0.005 | <0.005     | <0.005 | <0.005     | <0.005 |            |  |
| Toluene                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  |            |  |
| Ethylbenzene                   | mg/kg | 0.01                | <0.01  | <0.01      | <0.01  | <0.01      | <0.01  |            |  |
| Xylenes                        | mg/kg | 0.05                | <0.05  | <0.05      | <0.05  | <0.05      | <0.05  |            |  |
| C6 - C10 (F1)                  | mg/kg | 10                  | <10    | <10        | <10    | <10        | <10    |            |  |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | <10    | <10        | <10    | <10        | <10    |            |  |
| C10 - C16 (F2)                 | mg/kg | 10                  | 50     | 40         | 10     | 10         |        |            |  |
| C16 - C34 (F3)                 | mg/kg | 10                  | 100    | 80         | 50     | 50         |        |            |  |
| C34 - C50 (F4)                 | mg/kg | 10                  | 20     | 10         | 10     | 10         |        |            |  |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A    | N/A        | N/A    | N/A        |        |            |  |
| Moisture Content               | %     | 1                   | 18     | 18         | 20     | 20         |        |            |  |
| Surrogate                      | Unit  | Acceptable Limits   |        |            |        |            |        |            |  |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101    | 103        | 100    | 100        |        |            |  |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 84     | 85         | 101    | 145        |        |            |  |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 95     | 94         | 96     | 88         |        |            |  |

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E510215

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-31

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

474326-474516

Results are based on the dry weight of the sample.  
 The C6-C10 (F1) fraction is calculated using toluene response factor.  
 The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
 Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
 Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
 Quality control data is available upon request.  
 Assistance in the interpretation of data is available upon request.  
 This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
 nC6 and nC10 response factors are within 30% of Toluene response factor.  
 nC10, nC16 and nC34 response factors are within 10% of their average.  
 C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
 Linearity is within 15%.  
 The chromatogram returned to baseline by the retention time of nC50.  
 Extraction and holding times were met for this sample.  
 C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
 Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E510215  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

### Trace Organics Analysis

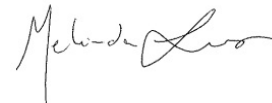
| RPT Date: Aug 31, 2019  |       |           | DUPLICATE |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|---|-------|-----------|-----------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER   | Batch | Sample Id | Dup #1    | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|   |       |           |           |        |       |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |           |        |       |                |              |                    |       |          |                    |       |          |                   |       |  |
| Benzene   | 2119  | 474326    | <0.005    | <0.005 | NA    | < 0.005        | 102%         | 80%                | 120%  | 86%      | 80%                | 120%  | 72%      | 60%               | 140%  |  |
| Toluene   | 2119  | 474326    | <0.05     | <0.05  | NA    | < 0.05         | 100%         | 80%                | 120%  | 82%      | 80%                | 120%  | 72%      | 60%               | 140%  |  |
| Ethylbenzene  | 2119  | 474326    | <0.01     | <0.01  | NA    | < 0.01         | 105%         | 80%                | 120%  | 89%      | 80%                | 120%  | 76%      | 60%               | 140%  |  |
| Xylenes   | 2119  | 474326    | <0.05     | <0.05  | NA    | < 0.05         | 108%         | 80%                | 120%  | 81%      | 80%                | 120%  | 76%      | 60%               | 140%  |  |
| C6 - C10 (F1)   | 2119  | 474326    | 20        | 20     | NA    | < 10           | 95%          | 80%                | 120%  | 104%     | 80%                | 120%  | 83%      | 60%               | 140%  |  |
| C10 - C16 (F2)  | 1111  | 474326    | 150       | 180    | 18.2% | < 10           | 88%          | 80%                | 120%  | 103%     | 80%                | 120%  | 96%      | 60%               | 140%  |  |
| C16 - C34 (F3)  | 1111  | 474326    | 300       | 340    | 12.5% | < 10           | 84%          | 80%                | 120%  | 105%     | 80%                | 120%  | 98%      | 60%               | 140%  |  |
| C34 - C50 (F4)  | 1111  | 474326    | 40        | 40     | NA    | < 10           | 93%          | 80%                | 120%  | 106%     | 80%                | 120%  | 98%      | 60%               | 140%  |  |
| Moisture Content  | 1111  | 474326    | 10        | 10     | 0.0%  | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

|   |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
|---|------|--------|--------|--------|-------|---------|------|-----|------|------|-----|------|------|-----|------|
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |      |        |        |        |       |         |      |     |      |      |     |      |      |     |      |
| Benzene   | 1987 | 474499 | <0.005 | <0.005 | NA    | < 0.005 | 111% | 80% | 120% | 93%  | 80% | 120% | 99%  | 60% | 140% |
| Toluene   | 1987 | 474499 | <0.05  | <0.05  | NA    | < 0.05  | 107% | 80% | 120% | 90%  | 80% | 120% | 97%  | 60% | 140% |
| Ethylbenzene  | 1987 | 474499 | <0.01  | <0.01  | NA    | < 0.01  | 102% | 80% | 120% | 90%  | 80% | 120% | 98%  | 60% | 140% |
| Xylenes   | 1987 | 474499 | <0.05  | <0.05  | NA    | < 0.05  | 111% | 80% | 120% | 82%  | 80% | 120% | 84%  | 60% | 140% |
| C6 - C10 (F1)   | 1987 | 474499 | <10    | <10    | NA    | < 10    | 87%  | 80% | 120% | 96%  | 80% | 120% | 83%  | 60% | 140% |
| C10 - C16 (F2)  | 1241 | 474505 | 10     | 10     | NA    | < 10    | 101% | 80% | 120% | 101% | 80% | 120% | 96%  | 60% | 140% |
| C16 - C34 (F3)  | 1241 | 474505 | 70     | 60     | 15.4% | < 10    | 105% | 80% | 120% | 95%  | 80% | 120% | 91%  | 60% | 140% |
| C34 - C50 (F4)  | 1241 | 474505 | < 10   | < 10   | NA    | < 10    | 103% | 80% | 120% | 111% | 80% | 120% | 112% | 60% | 140% |
| Moisture Content  | 1241 | 474505 | 23     | 23     | 0.0%  | < 1     |      |     |      |      |     |      |      |     |      |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated. The sample spikes and dups are not from the same sample ID.

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E510215  
ATTENTION TO: Kyle Schepanow  
SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |







# AGAT Laboratories

2910 12 Street NE  
 Calgary, Alberta T2E 7P7  
 P: 403-735-2005 • F: 403-735-2771  
 webearth.agatlabs.com

### Laboratory Use Only

Arrival Temperature: \_\_\_\_\_  
 AGAT Job Number: 19E510215  
 Date and Time: \_\_\_\_\_

## Chain of Custody Record

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

**Report Information**

Company: see page 1  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 LSD: \_\_\_\_\_  
 Client Project #: \_\_\_\_\_  
 Sampled By: \_\_\_\_\_

**Report Information**

1. Name: see page 1  
 Email: \_\_\_\_\_  
 2. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_  
 3. Name: \_\_\_\_\_  
 Email: \_\_\_\_\_

**Turnaround Time Required (TAT)**

Regular TAT  5 to 7 Business Days  
 <24 Hours (200%)  
 Two Day / Next Day (100%)  
 Three Day (50%)  
 Four Day (25%)

Rush TAT \_\_\_\_\_  
 Date Required: \_\_\_\_\_

SEE BACK FOR SURCHARGE BREAKDOWN. CONTACT YOUR CPM FOR ADDITIONAL INFORMATION

**Invoice To** Same Yes  / No

Company: see page 1  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 PO/AFE#: \_\_\_\_\_  
 Standing Offer #: \_\_\_\_\_

**Requirements** (Selection may impact detection limits)

CCME  AB Tier 1

Agricultural  Agricultural  
 Industrial  Industrial  
 Residential/Park  Residential/Park  
 Commercial  Commercial  
 FWAL  Natural Area

Drinking Water  Alberta Surface Water  
 Other: \_\_\_\_\_  Chronic  Acute

**Report Format**

Single  
 Sample Per Page  
 Multiple  
 Samples Per Page  
 Export

|   |  |  |                               |   |  |                         |   |  |   |                 |   |  |
|---|--|--|-------------------------------|---|--|-------------------------|---|--|---|-----------------|---|--|
| Detailed Salinity: <input type="checkbox"/> AB <input type="checkbox"/> SK <input type="checkbox"/> BC <input type="checkbox"/> D50 | <input checked="" type="checkbox"/> CCME/AB: BTEX/F1-F4 <input type="checkbox"/> CCME/AB: BTEX/F1-F2 | <input type="checkbox"/> BC: BTEX/VPH/EPH <input type="checkbox"/> BC: LEPH/HEPH | SK: BTEX/TVH/C11-C22, C23-C60 | Soil Metals: <input type="checkbox"/> HWS-B <input type="checkbox"/> SP-B <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Water Metals: <input type="checkbox"/> Dissolved Total <input type="checkbox"/> Hg <input type="checkbox"/> Cr <sup>6+</sup> | Routine Water Chemistry | Landfill: <input type="checkbox"/> AB Class 2 <input type="checkbox"/> BC <input type="checkbox"/> SK | Coliforms: <input type="checkbox"/> Total <input type="checkbox"/> Fecal <input type="checkbox"/> E.coli | Particle Size: <input type="checkbox"/> Sieve (75µm) <input type="checkbox"/> Texture | 19 AUG 24 11:42 | HOLD FOR 30 DAYS NO ANALYSIS (Additional Fee) | HOLD FOR 30 DAYS AFTER ANALYSIS (Additional Fee) |
|---|--|--|-------------------------------|---|--|-------------------------|---|--|---|-----------------|---|--|

| LABORATORY USE (LAB ID #) | SAMPLE IDENTIFICATION | DEPTH | DATE/TIME SAMPLED | SAMPLE MATRIX | COMMENTS (FILTERED, PRESERVED, HAZARDOUS*) *ADDITIONAL FEE | # OF CONTAINERS |      |         |
|---------------------------|-----------------------|-------|-------------------|---------------|--|-----------------|------|---------|
|                           |                       |       |                   |               |  | VIALS / JARS    | BAGS | BOTTLES |
| 1                         | 474514 UN19-R09A      |       | Aug 21/19         | soil          |  | 3               |      |         |
| 2                         | 515 UN19-009B         |       | ↓                 | ↓             |  | 3               |      |         |
| 3                         | 516 UN19-WCA          |       |                   |               |  | 3               |      |         |
| 4                         |                       |       |                   |               |  |                 |      |         |
| 5                         |                       |       |                   |               |  |                 |      |         |
| 6                         |                       |       |                   |               |  |                 |      |         |
| 7                         |                       |       |                   |               |  |                 |      |         |
| 8                         |                       |       |                   |               |  |                 |      |         |
| 9                         |                       |       |                   |               |  |                 |      |         |
| 10                        |                       |       |                   |               |  |                 |      |         |

|   |                                     |  |            |                    |                                   |
|---|-------------------------------------|--|------------|--------------------|-----------------------------------|
| Samples Relinquished By (Print Name and Sign):<br><u>Stephanie Hannem</u> | Date/Time:<br><u>Aug 22/19 9:00</u> | Samples Received By (Print Name and Sign):<br><u>[Signature]</u> | Date/Time: | Pink Copy - Client | Page <u>3</u> of <u>3</u>         |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                          | Samples Received By (Print Name and Sign):                       | Date/Time: | Yellow Copy - AGAT | N <sup>o</sup> : AB <b>104735</b> |
| Samples Relinquished By (Print Name and Sign):                            | Date/Time:                          | Samples Received By (Print Name and Sign):                       | Date/Time: | White Copy - AGAT  |                                   |





### RECEIVING BASICS - Shipping

Company/Consultant: IEG Consulting  
 Courier: Canadian north 518-7EV-10635505 Prepaid Collect  
 Waybill# \_\_\_\_\_  
 Branch  EDM GP FN FM RD VAN LYD FSJ EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No   
 Custody Seal Intact: Yes  No  NA  
 TAT: <24hr 24-48hr 48-72hr  Reg Other \_\_\_\_\_  
 Cooler Quantity: 2

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No   
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\*  
 Earliest Expiry: \_\_\_\_\_  
 Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No   
 International Samples: Yes  No   
 Tape Sealed: Yes  No   
 Coolant Used: Icepack  Bagged Ice  Free Ice Free Water None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 8.2859 = 8.6 °C 2 (Bottle/Jar) 9.589 = 9.3 °C 89  
 3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 (If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E510215  
 Samples Damaged: Yes  No  If YES why?  
 No Bubble Wrap Frozen Courier  
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes No  
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* Subcontracted Analysis (See CPM)



**CANADIAN NORTH**  
CARGO

**518-YEV-10635505**

|   |   |   |  |   |  |   |  |   |     |
|---|---|---|--|---|--|---|--|---|-----|
| Shipper's Name and Address<br>Nom et adresse de l'expéditeur<br><br>Hobbit Environmental<br><br>Inuvik<br>Northwest Territories, Canada<br>907-355-1769<br>Attn: Jeff Powers  |   | Not negotiable / Non négociable<br><b>Air Waybill / Lettre de transport aérien</b><br>issued by / Émise par<br><br>Canadian North; 101 3731 52 Ave E,<br>Edmonton International Airport, AB,<br>Canada, T9E0V4          |  |   |  |   |  |   |     |
| Consignee's Name and Address<br>Nom et adresse du destinataire<br><br>AGAT Laboratories Ltd<br>6310 Roper Road NW<br>Edmonton<br>Alberta, Canada<br>T6E 6S4 780-395-2525<br>Attn: Abbey   |   | Received in Good Order and Condition / Reçu en bon état<br><br>at / à _____ on / le _____<br>Place / Lieu Date/time / Date/heure<br><br>Signature of Consignee or his agent / Signature du Destinataire ou de son agent |  |   |  |   |  |   |     |
| Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur<br><br>Agent's IATA Code / Code IATA de l'agent<br><br>Airport of Departure (Address of First Carrier) and Requested Routing<br>Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé<br><p style="text-align: center;"><b>Inuvik</b></p> |   | Accounting Information / Renseignements comptables<br><p style="text-align: right;"><b>VIS100CW</b></p> Visa Card<br>3731 52 Avenue East, Unit 1<br>Edmonton<br>Alberta, Canada<br>T9E 0V4<br>PO:                       |  |   |  |   |  |   |     |
| To / à<br><b>YEG</b>  | By first carrier / Par premier transport<br><b>CANADIAN NORTH</b> | To / à<br>by / par<br>To / à<br>by / par  | Currency<br>Monnaie<br><b>CDN</b>      | CHGS<br>Code Frais<br><b>PX</b>   | WT / Poids-Vol<br>Other/Autres<br>PPD Payé<br><b>X</b> | COLL Du<br>PPD Payé<br><b>X</b>   | Declared Value for Carriage<br>Valeur déclarée pour la transport<br><b>NDV</b> | Declared value for Customs<br>Valeur déclarée pour la douane<br><b>NCV</b>  |     |
| Airport of Destination / Aéroport de destination<br><p style="text-align: center;"><b>Edmonton</b></p>  |   | Flight Date - For Carrier Use Only<br>Vol. Date - Réservé au Transporteur   |  | Amount of Insurance<br>Montant de l'assurance   |  | INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures below marked "Amount of Insurance"<br>ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance" |  |   |     |
| Handling Information / Renseignements pour le traitement de l'expédition<br><b>Please deliver</b><br><b>Keep Cool;</b>  |   |   |  |   |  |   |  |   | SCI |
| No. of Pieces<br>Nombre de colis<br>RC?   | Gross Weight<br>Poids brut  | kg<br>lb  | Chargeable Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant  | Interline  | Total   | Commodity Item No.<br>No. d'article de la marchandise                          | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |     |
| 3   | 67  | K   | 67                                     | 7.57  |  | 507.19  | GAD  | Soil, Water Samples 60cm x 33cm x 106cm   |     |
| 3   | 67  |   | 67                                     |   |  | <b>\$507.19</b>   |  |   |     |
| Weight Charge<br>Prepaid / Porte payé<br><b>\$507.19</b>  |   | Taxation au poids<br>Collect / Port dû  |  | Other Charges / Autres frais<br><b>5T Nav Can Surcharge = 25.36, ACS Screening Fee = 10.05, 5T Fuel Surcharge = 111.58, Delivery Charge = 21.96, GST/HST = 33.81</b>  |  |   |  |   |     |
| Valuation Charge  |   | Taxation à la valeur  |  | Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.<br>L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure où une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable. |  |   |  |   |     |
| Tax<br><b>\$33.81</b>   |   | Taxe  |  | Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent   |  |   |  |   |     |
| Total other Charges Due Agent   |   | Total des autres frais dus à l'agent  |  | Total other Charges Due Carrier<br><b>\$168.95</b>  |  |   |  |   |     |
| Total Prepaid / Total port payé<br><b>\$709.95</b>  |   | Total collect / Total port dû   |  | Executed on<br>Fait le <b>23 Aug 2019</b> at <b>YEV</b><br>(Date) (Date) (Place) (Lieu)<br>Signature of issuing Carrier or its Agent<br>Signature du Transporteur émetteur ou de son Agent  |  |   |  |   |     |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination   |   | Charges at Destination / Frais à l'arrivée  |  | Total Collect Charges / Total Du  |  |   |  |   |     |

**518-YEV-10635505**

Copy 1 - Origin/destination Station

Track online at [CanadianNorth.com/Cargo/Track](http://CanadianNorth.com/Cargo/Track).

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Accounts Payable

PROJECT: A04012A11

AGAT WORK ORDER: 19E510217

TRACE ORGANICS REVIEWED BY: Melinda Guay, Technical Reviewer

WATER ANALYSIS REVIEWED BY: Melinda Guay, Technical Reviewer

DATE REPORTED: Aug 30, 2019

PAGES (INCLUDING COVER): 12

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E510217

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Accounts Payable

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F2) in Water

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-30

| Parameter                | Unit | SAMPLE DESCRIPTION: P19-2 |        | P19-4      | P19-5      | P19-6      | P06-6      | P06-7      |         |
|--------------------------|------|---------------------------|--------|------------|------------|------------|------------|------------|---------|
|                          |      | G / S                     | RDL    | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 |         |
|                          |      |                           | 474420 | RDL        | 474584     | 474585     | 474586     | 474590     | 474623  |
| Benzene                  | mg/L | 0.0005                    | 0.0386 | 0.0005     | <0.0005    | 0.0142     | 0.152      | 0.0005     | <0.0005 |
| Toluene                  | mg/L | 0.0003                    | 0.113  | 0.0003     | <0.0003    | <0.0003    | 0.0111     | <0.0003    | <0.0003 |
| Ethylbenzene             | mg/L | 0.0005                    | 0.0375 | 0.0005     | <0.0005    | 0.0796     | 0.0220     | <0.0005    | <0.0005 |
| Xylenes                  | mg/L | 0.001                     | 1.05   | 0.0005     | <0.0005    | 0.108      | 0.132      | <0.0005    | <0.0005 |
| C6 - C10 (F1)            | mg/L | 0.1                       | 2.7    | 0.1        | <0.1       | 0.4        | 0.4        | <0.1       | <0.1    |
| C6 - C10 (F1 minus BTEX) | mg/L | 0.1                       | 1.5    | 0.1        | <0.1       | 0.2        | <0.1       | <0.1       | <0.1    |
| C>10 - C16 (F2)          | mg/L | 0.1                       | 5.3    | 0.1        | <0.1       | 7.3        | 0.6        | <0.1       | <0.1    |
| Surrogate                | Unit | Acceptable Limits         |        |            |            |            |            |            |         |
| Toluene-d8 (BTEX)        | %    | 50-150                    | 100    |            | 90         | 98         | 97         | 89         | 91      |
| o-Terphenyl (F2)         | %    | 50-150                    | 106    |            | 102        | 104        | 103        | 105        | 104     |

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

474420-474623 The F1 (C6 - C10) fraction is determined by integrating the FID chromatogram from the beginning of the nC6 peak to the apex of the last nC10 peak. The C6 - C10 fraction is calculated from the FID toluene response factor. The F2 (C10 - C16) fraction is determined by integrating the FID chromatogram from the apex of the nC10 peak to the apex of the nC16 peak. The F2 (C10 - C16) fraction is calculated using the average response factor for nC10, nC16, and nC34. Quality control for the calibration follows the guidelines set out in the CCME Contaminated Sites Method for Soils. C6 - C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. C>10 - C16 (F2 - Napthalene) is a calculated parameter. The calculated value is F2 - Napthalene (if requested). Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene. Extraction and holding times were met for this sample. Sample is blank corrected.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E510217

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
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CLIENT NAME: IEG CONSULTANTS LTD

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### Metals - Dissolved - Alberta Tier 1

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-30

| Parameter            | Unit | SAMPLE DESCRIPTION: P19-2 |          | P19-4      |          | P19-5      |          | P19-6      |          |
|----------------------|------|---------------------------|----------|------------|----------|------------|----------|------------|----------|
|                      |      | SAMPLE TYPE: Water        |          | Water      |          | Water      |          | Water      |          |
|                      |      | DATE SAMPLED: 2019-08-21  |          | 2019-08-21 |          | 2019-08-21 |          | 2019-08-21 |          |
|                      |      | G / S                     | RDL      | 474420     | RDL      | 474584     | RDL      | 474585     | 474586   |
| Dissolved Aluminum   | mg/L |                           | 0.004    | 0.012      | 0.004    | 0.019      | 0.004    | 0.258      | 0.090    |
| Dissolved Antimony   | mg/L |                           | 0.001    | <0.001     | 0.001    | <0.001     | 0.001    | 0.003      | <0.001   |
| Dissolved Arsenic    | mg/L |                           | 0.001    | 0.010      | 0.001    | <0.001     | 0.001    | 0.019      | 0.009    |
| Dissolved Barium     | mg/L |                           | 0.05     | 0.45       | 0.05     | 0.10       | 0.05     | 0.17       | 0.51     |
| Dissolved Beryllium  | mg/L |                           | 0.001    | <0.001     | 0.001    | <0.001     | 0.001    | <0.001     | <0.001   |
| Dissolved Boron      | mg/L |                           | 0.01     | 0.01       | 0.01     | 0.03       | 0.01     | 0.22       | <0.01    |
| Dissolved Cadmium    | mg/L |                           | 0.000016 | 0.000036   | 0.000016 | 0.000431   | 0.000016 | 0.000740   | 0.000017 |
| Dissolved Chromium   | mg/L |                           | 0.001    | 0.001      | 0.007    | 2.22       | 0.001    | 0.007      | 0.002    |
| Dissolved Cobalt     | mg/L |                           | 0.001    | 0.007      | 0.001    | 0.007      | 0.001    | 0.012      | 0.012    |
| Dissolved Copper     | mg/L |                           | 0.001    | 0.002      | 0.001    | 0.021      | 0.001    | 0.008      | 0.002    |
| Dissolved Iron       | mg/L |                           | 0.1      | 1.0        | 0.1      | 3.6        | 0.1      | 11.9       | 23.0     |
| Dissolved Lead       | mg/L |                           | 0.0002   | <0.0002    | 0.0002   | 0.0009     | 0.0002   | 0.0010     | 0.0046   |
| Dissolved Manganese  | mg/L |                           | 0.030    | 27.5       | 0.005    | 0.045      | 0.005    | 2.30       | 3.47     |
| Dissolved Molybdenum | mg/L |                           | 0.001    | 0.003      | 0.001    | 0.309      | 0.001    | 0.003      | <0.001   |
| Dissolved Nickel     | mg/L |                           | 0.004    | 0.012      | 0.004    | 0.498      | 0.004    | 0.039      | 0.019    |
| Dissolved Selenium   | mg/L |                           | 0.0005   | 0.0011     | 0.0005   | 0.0009     | 0.0005   | 0.0017     | 0.0023   |
| Dissolved Silver     | mg/L |                           | 0.00005  | <0.00005   | 0.00005  | 0.00013    | 0.00005  | 0.00006    | <0.00005 |
| Dissolved Sodium     | mg/L |                           | 0.6      | 225        | 0.6      | 12.0       | 0.6      | 112        | 28.0     |
| Dissolved Thallium   | mg/L |                           | 0.0005   | <0.0005    | 0.0005   | 0.0007     | 0.0005   | <0.0005    | <0.0005  |
| Dissolved Uranium    | mg/L |                           | 0.001    | 0.003      | 0.001    | 0.006      | 0.001    | 0.001      | <0.001   |
| Dissolved Zinc       | mg/L |                           | 0.01     | 0.01       | 0.01     | 0.03       | 0.01     | 0.01       | 0.01     |

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

474420-474586 < - Values refer to Report Detection Limit.

Analysis performed at AGAT Edmonton (unless marked by \*)

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## Certificate of Analysis

AGAT WORK ORDER: 19E510217

PROJECT: A04012A11

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CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Accounts Payable

SAMPLING SITE:

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### Routine Chemistry Water Analysis

DATE RECEIVED: 2019-08-24

DATE REPORTED: 2019-08-30

| Parameter                  | Unit       | SAMPLE DESCRIPTION: |       | P19-2      | P19-4      | P19-5      | P19-6      | P06-6      | P06-7      | DUP 1      |            |
|----------------------------|------------|---------------------|-------|------------|------------|------------|------------|------------|------------|------------|------------|
|                            |            | SAMPLE TYPE:        |       | Water      | Water      | Water      | Water      | Water      | Water      | Water      |            |
|                            |            | DATE SAMPLED:       |       | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 | 2019-08-21 |
|                            |            | G / S               | RDL   | 474420     | RDL        | 474584     | 474585     | 474586     | 474590     | 474623     | 474624     |
| pH                         | pH Units   | NA                  | 7.14  | NA         | 7.54       | 7.37       | 7.00       | 7.40       | 7.22       | 7.40       |            |
| p - Alkalinity (as CaCO3)  | mg/L       | 5                   | <5    | 5          | <5         | <5         | <5         | <5         | <5         | <5         |            |
| T - Alkalinity (as CaCO3)  | mg/L       | 5                   | 299   | 5          | 375        | 780        | 528        | 420        | 124        | 791        |            |
| Bicarbonate                | mg/L       | 5                   | 365   | 5          | 458        | 952        | 644        | 513        | 152        | 965        |            |
| Carbonate                  | mg/L       | 5                   | <5    | 5          | <5         | <5         | <5         | <5         | <5         | <5         |            |
| Hydroxide                  | mg/L       | 5                   | <5    | 5          | <5         | <5         | <5         | <5         | <5         | <5         |            |
| Electrical Conductivity    | uS/cm      | 1                   | 821   | 1          | 907        | 1700       | 1160       | 1100       | 306        | 1730       |            |
| Fluoride                   | mg/L       | 0.05                | 0.08  | 0.05       | 0.07       | 0.05       | 0.09       | 0.07       | <0.05      | <0.05      |            |
| Chloride                   | mg/L       | 1                   | 41    | 1          | 20         | 34         | 57         | 55         | 14         | 34         |            |
| Nitrite                    | mg/L       | 0.05                | <0.05 | 0.05       | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      |            |
| Nitrite-N                  | mg/L       | 0.02                | <0.02 | 0.02       | <0.02      | <0.02      | <0.02      | <0.02      | <0.02      | <0.02      |            |
| Nitrate                    | mg/L       | 0.5                 | <0.5  | 0.5        | 50.3       | <0.5       | <0.5       | 2.0        | 1.5        | <0.5       |            |
| Nitrate-N                  | mg/L       | 0.02                | <0.02 | 0.02       | 11.4       | <0.02      | <0.02      | 0.45       | 0.34       | <0.02      |            |
| Nitrate+Nitrite - Nitrogen | mg/L       | 0.02                | <0.02 | 0.02       | 11.4       | <0.02      | <0.02      | 0.45       | 0.34       | <0.02      |            |
| Sulfate                    | mg/L       | 1                   | 71    | 1          | 55         | 62         | 9          | 150        | 3          | 62         |            |
| Dissolved Calcium          | mg/L       | 0.3                 | 109   | 0.3        | 112        | 118        | 120        | 144        | 35.5       | 116        |            |
| Dissolved Magnesium        | mg/L       | 0.2                 | 29.9  | 0.2        | 48.2       | 35.6       | 60.6       | 42.3       | 13.6       | 34.8       |            |
| Dissolved Sodium           | mg/L       | 0.6                 | 23.3  | 0.6        | 12.0       | 112        | 28.0       | 56.4       | 10.4       | 116        |            |
| Dissolved Potassium        | mg/L       | 0.6                 | 6.7   | 0.6        | 2.7        | 192        | 5.3        | 1.9        | 0.7        | 216        |            |
| Dissolved Iron             | mg/L       | 0.1                 | 1.0   | 0.1        | 3.6        | 11.9       | 23.0       | 0.1        | 0.5        | 7.6        |            |
| Dissolved Manganese        | mg/L       | 0.030               | 2.53  | 0.005      | 0.045      | 2.30       | 3.47       | <0.005     | 0.372      | 2.47       |            |
| Calculated TDS             | mg/L       | 0.6                 | 460   | 0.6        | 525        | 1020       | 597        | 704        | 153        | 1050       |            |
| Sodium Adsorption Ratio    | N/A        |                     | 0.510 |            | 0.239      | 2.32       | 0.520      | 1.06       | 0.376      | 2.42       |            |
| Hardness                   | mg CaCO3/L | 1                   | 395   | 1          | 478        | 441        | 549        | 534        | 145        | 433        |            |
| Ion Balance                | %          | 1                   | 107   | 1          | 102        | 107        | 107        | 100        | 114        | 108        |            |

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

474420-474624 < - Values refer to Report Detection Limits.

If sodium results in mg/L are less than detection, SAR is non-calculable and is reported as 0.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

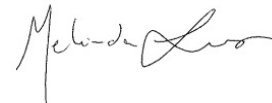
AGAT WORK ORDER: 19E510217  
ATTENTION TO: Accounts Payable  
SAMPLED BY:

### Trace Organics Analysis

| RPT Date:                                    |       | DUPLICATE |        |        |       |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       | MATRIX SPIKE |                   |       |
|--|-------|-----------|--------|--------|-------|----------------|--------------|--------------------|-------|----------|--------------------|-------|--------------|-------------------|-------|
| PARAMETER                                    | Batch | Sample Id | Dup #1 | Dup #2 | RPD   | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery     | Acceptable Limits |       |
|  |       |           |        |        |       |                |              | Lower              | Upper |          | Lower              | Upper |              | Lower             | Upper |
| Petroleum Hydrocarbons (BTEX/F1-F2) in Water |       |           |        |        |       |                |              |                    |       |          |                    |       |              |                   |       |
| Benzene                                      | 1020  | 451283    | 0.0063 | 0.0063 | 0.0%  | < 0.0005       | 102%         | 80%                | 120%  | 98%      | 80%                | 120%  | 97%          | 70%               | 130%  |
| Toluene                                      | 1020  | 451283    | 0.0858 | 0.0839 | 2.2%  | < 0.0003       | 103%         | 80%                | 120%  | 101%     | 80%                | 120%  | 100%         | 70%               | 130%  |
| Ethylbenzene                                 | 1020  | 451283    | 0.0114 | 0.0108 | 5.4%  | < 0.0005       | 98%          | 80%                | 120%  | 87%      | 80%                | 120%  | 88%          | 70%               | 130%  |
| Xylenes                                      | 1020  | 451283    | 0.0803 | 0.0763 | 5.1%  | < 0.0005       | 103%         | 80%                | 120%  | 96%      | 80%                | 120%  | 96%          | 70%               | 130%  |
| C6 - C10 (F1)                                | 1020  | 451283    | 0.3    | 0.3    | NA    | < 0.1          | 115%         | 80%                | 120%  | 103%     | 80%                | 120%  | 97%          | 70%               | 130%  |
| C>10 - C16 (F2)                              | 1239  | 467308    | 1.4    | 1.2    | 15.4% | < 0.1          | 100%         | 80%                | 120%  | 89%      | 80%                | 120%  | 100%         | 70%               | 130%  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
The sample spikes and dups are not from the same sample ID.

Certified By: \_\_\_\_\_



## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
PROJECT: A04012A11  
SAMPLING SITE:

AGAT WORK ORDER: 19E510217  
ATTENTION TO: Accounts Payable  
SAMPLED BY:

| Water Analysis |       |           |           |        |     |                |              |                    |       |          |                    |       |          |                   |  |  |
|----------------|-------|-----------|-----------|--------|-----|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|--|--|
| RPT Date:      |       |           | DUPLICATE |        |     |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |  |  |
| PARAMETER      | Batch | Sample Id | Dup #1    | Dup #2 | RPD | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |  |  |
|                |       |           |           |        |     |                | Lower        | Upper              | Lower |          | Upper              | Lower |          | Upper             |  |  |

### Routine Chemistry Water Analysis

|                           |      |        |       |       |      |         |      |     |      |      |     |      |      |     |      |
|---------------------------|------|--------|-------|-------|------|---------|------|-----|------|------|-----|------|------|-----|------|
| pH                        | 428  | 481685 | 7.89  | 7.90  | 0.1% |         | 97%  | 90% | 110% |      |     |      |      |     |      |
| p - Alkalinity (as CaCO3) | 428  | 481685 | <5    | <5    | NA   | < 5     |      |     |      |      |     |      |      |     |      |
| T - Alkalinity (as CaCO3) | 428  | 481685 | 402   | 402   | 0.1% | < 5     | 98%  | 80% | 120% |      |     |      |      |     |      |
| Bicarbonate               | 428  | 481685 | 491   | 491   | 0.1% | < 5     |      |     |      |      |     |      |      |     |      |
| Carbonate                 | 428  | 481685 | <5    | <5    | NA   | < 5     |      |     |      |      |     |      |      |     |      |
| Hydroxide                 | 428  | 481685 | <5    | <5    | NA   | < 5     |      |     |      |      |     |      |      |     |      |
| Electrical Conductivity   | 428  | 481685 | 874   | 871   | 0.3% | < 1     | 110% | 80% | 120% |      |     |      |      |     |      |
| Fluoride                  | 2008 | 481685 | 0.15  | 0.14  | 6.9% | < 0.05  | 90%  | 80% | 120% | 103% | 80% | 120% | 93%  | 80% | 120% |
| Chloride                  | 2008 | 481685 | 44    | 43    | 3.1% | < 1     | 101% | 80% | 120% | 110% | 80% | 120% | 102% | 80% | 120% |
| Nitrite                   | 2008 | 481685 | <0.05 | <0.05 | 0.0% | < 0.05  | 98%  | 80% | 120% | 107% | 80% | 120% | 102% | 80% | 120% |
| Nitrate                   | 2008 | 481685 | <0.5  | <0.5  | 0.0% | < 0.5   | 102% | 80% | 120% | 108% | 80% | 120% | 102% | 80% | 120% |
| Sulfate                   | 2008 | 481685 | 19    | 18    | 3.5% | < 1     | 99%  | 80% | 120% | 108% | 80% | 120% | 100% | 80% | 120% |
| Dissolved Calcium         | 242  | 481356 | 13.0  | 13.0  | 0.1% | < 0.3   | 98%  | 80% | 120% |      |     |      | 94%  | 80% | 120% |
| Dissolved Magnesium       | 242  | 481356 | 2.4   | 2.4   | 2.8% | < 0.2   | 96%  | 80% | 120% |      |     |      | 89%  | 80% | 120% |
| Dissolved Sodium          | 242  | 481356 | 31.2  | 31.2  | 0.0% | < 0.6   | 94%  | 80% | 120% |      |     |      | 90%  | 80% | 120% |
| Dissolved Potassium       | 242  | 481356 | 2.1   | 2.1   | NA   | < 0.6   | 94%  | 80% | 120% |      |     |      | 90%  | 80% | 120% |
| Dissolved Iron            | 242  | 481356 | 1.4   | 1.4   | 0.1% | < 0.1   | 110% | 80% | 120% |      |     |      | 101% | 80% | 120% |
| Dissolved Manganese       | 242  | 481356 | 0.087 | 0.086 | 2.0% | < 0.005 | 105% | 80% | 120% |      |     |      | 102% | 80% | 120% |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.

pH has been analyzed past the recommended holding time of 15 minutes from sampling (field measurement ideal if more accurate data required)

Nitrate and Nitrite: The regulatory hold time for the analysis of nitrate and/or nitrite in water is 48 hours in Alberta and 72 hours in British Columbia.

### Metals - Dissolved - Alberta Tier 1

|                      |     |        |          |          |      |            |      |     |      |  |  |  |      |     |      |
|----------------------|-----|--------|----------|----------|------|------------|------|-----|------|--|--|--|------|-----|------|
| Dissolved Aluminum   | 242 | 481727 | 0.081    | 0.084    | 3.6% | < 0.004    | 89%  | 80% | 120% |  |  |  | 96%  | 80% | 120% |
| Dissolved Antimony   | 242 | 481727 | <0.001   | <0.001   | NA   | < 0.001    | 119% | 80% | 120% |  |  |  | 95%  | 80% | 120% |
| Dissolved Arsenic    | 242 | 481727 | <0.001   | <0.001   | NA   | < 0.001    | 98%  | 80% | 120% |  |  |  | 106% | 80% | 120% |
| Dissolved Barium     | 242 | 481727 | 0.10     | 0.10     | NA   | < 0.05     | 100% | 80% | 120% |  |  |  | 101% | 80% | 120% |
| Dissolved Beryllium  | 242 | 481727 | <0.001   | <0.001   | NA   | < 0.001    | 101% | 80% | 120% |  |  |  | 105% | 80% | 120% |
| Dissolved Boron      | 242 | 481727 | 0.16     | 0.16     | 0.0% | < 0.01     | 107% | 80% | 120% |  |  |  | 108% | 80% | 120% |
| Dissolved Cadmium    | 242 | 481727 | 0.000060 | 0.000029 | NA   | < 0.000016 | 100% | 80% | 120% |  |  |  | 100% | 80% | 120% |
| Dissolved Chromium   | 242 | 481727 | <0.001   | <0.001   | NA   | < 0.001    | 103% | 80% | 120% |  |  |  | 102% | 80% | 120% |
| Dissolved Cobalt     | 242 | 481727 | <0.001   | <0.001   | NA   | < 0.001    | 98%  | 80% | 120% |  |  |  | 95%  | 80% | 120% |
| Dissolved Copper     | 242 | 481727 | 0.001    | 0.001    | NA   | < 0.001    | 93%  | 80% | 120% |  |  |  | 95%  | 80% | 120% |
| Dissolved Iron       | 242 | 481356 | 1.4      | 1.4      | 0.1% | < 0.1      | 110% | 80% | 120% |  |  |  | 101% | 80% | 120% |
| Dissolved Lead       | 242 | 481727 | <0.0002  | <0.0002  | NA   | < 0.0001   | 100% | 80% | 120% |  |  |  | 100% | 80% | 120% |
| Dissolved Manganese  | 242 | 481356 | 0.087    | 0.086    | 2.0% | < 0.005    | 105% | 80% | 120% |  |  |  | 102% | 80% | 120% |
| Dissolved Molybdenum | 242 | 481727 | 0.002    | 0.001    | NA   | < 0.001    | 102% | 80% | 120% |  |  |  | 103% | 80% | 120% |



## Quality Assurance

 CLIENT NAME: IEG CONSULTANTS LTD  
 PROJECT: A04012A11  
 SAMPLING SITE:

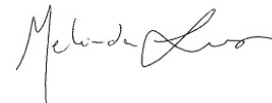
 AGAT WORK ORDER: 19E510217  
 ATTENTION TO: Accounts Payable  
 SAMPLED BY:

### Water Analysis (Continued)

| RPT Date:          |       | DUPLICATE |          |          |      |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|--------------------|-------|-----------|----------|----------|------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER          | Batch | Sample Id | Dup #1   | Dup #2   | RPD  | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|                    |       |           |          |          |      |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Dissolved Nickel   | 242   | 481727    | <0.004   | <0.004   | NA   | < 0.004        | 89%          | 80%                | 120%  |          |                    |       | 96%      | 80%               | 120%  |  |
| Dissolved Selenium | 242   | 481727    | 0.0028   | < 0.0005 | NA   | < 0.0005       | 97%          | 80%                | 120%  |          |                    |       | 99%      | 80%               | 120%  |  |
| Dissolved Silver   | 242   | 481727    | <0.00005 | <0.00005 | NA   | < 0.00005      | 102%         | 80%                | 120%  |          |                    |       | 101%     | 80%               | 120%  |  |
| Dissolved Sodium   | 242   | 481356    | 31.2     | 31.2     | 0.0% | < 0.6          | 94%          | 80%                | 120%  |          |                    |       | 90%      | 80%               | 120%  |  |
| Dissolved Thallium | 242   | 481727    | <0.0005  | <0.0005  | NA   | < 0.0005       | 101%         | 80%                | 120%  |          |                    |       | 100%     | 80%               | 120%  |  |
| Dissolved Uranium  | 242   | 481727    | 0.002    | 0.002    | NA   | < 0.001        | 99%          | 80%                | 120%  |          |                    |       | 101%     | 80%               | 120%  |  |
| Dissolved Zinc     | 242   | 481727    | <0.01    | <0.01    | NA   | < 0.01         | 94%          | 80%                | 120%  |          |                    |       | 94%      | 80%               | 120%  |  |

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.  
 If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By:



## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E510217

PROJECT: A04012A11

ATTENTION TO: Accounts Payable

SAMPLING SITE:

SAMPLED BY:

| PARAMETER                | AGAT S.O.P                      | LITERATURE REFERENCE    | ANALYTICAL TECHNIQUE |
|--------------------------|---------------------------------|-------------------------|----------------------|
| Trace Organics Analysis  |                                 |                         |                      |
| Benzene                  | ORG-170-<br>5110/5140/5430/5440 | EPA SW846 8260-W        | GC/MS                |
| Toluene                  | ORG-170-<br>5110/5140/5430/5440 | EPA SW846 8260-W        | GC/MS                |
| Ethylbenzene             | ORG-170-<br>5110/5140/5430/5440 | EPA SW846 8260-W        | GC/MS                |
| Xylenes                  | ORG-170-<br>5110/5140/5430/5440 | EPA SW846 8260-W        | GC/MS                |
| C6 - C10 (F1)            | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-W L  | GC/FID               |
| C6 - C10 (F1 minus BTEX) | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-W L  | GC/FID               |
| C>10 - C16 (F2)          | ORG-170-5120/5300               | CCME Tier 1 Method-W H  | GC/FID               |
| Toluene-d8 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA 624 & SW-846 5030-W | GC/MS                |
| o-Terphenyl (F2)         | ORG-170-5120/5300               | CCME Tier 1 Method-W H  | GCFID                |

## Method Summary

CLIENT NAME: IEG CONSULTANTS LTD

AGAT WORK ORDER: 19E510217

PROJECT: A04012A11

ATTENTION TO: Accounts Payable

SAMPLING SITE:

SAMPLED BY:

| PARAMETER                              | AGAT S.O.P                      | LITERATURE REFERENCE    | ANALYTICAL TECHNIQUE |
|--|---------------------------------|-------------------------|----------------------|
| Water Analysis                         |                                 |                         |                      |
| Dissolved Aluminum                     | INO-171-6202                    | SM 3125 B               | ICP-MS               |
| Dissolved Antimony                     | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Arsenic                      | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Barium                       | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Beryllium                    | INORG-171-6202                  | SM 3125 B               | ICP-MS               |
| Dissolved Boron                        | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Cadmium                      | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Chromium                     | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Cobalt                       | INOR-171-6202,<br>INOR-171-6100 | SM 3125 B               | ICP-MS               |
| Dissolved Copper                       | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Iron                         | INOR-171-6201                   | SM 3120 B               | ICP/OES              |
| Dissolved Lead                         | INOR-171-6202                   | SM 3125 B DW            | ICP-MS               |
| Dissolved Manganese                    | INOR-171-6201                   | SM 3120 B               | ICP/OES              |
| Dissolved Molybdenum                   | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Nickel                       | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Selenium                     | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Silver                       | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Sodium                       | INOR-171-6201                   | SM 3120 B               | ICP/OES              |
| Dissolved Thallium                     | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Uranium                      | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| Dissolved Zinc                         | INOR-171-6202                   | SM 3125 B               | ICP-MS               |
| pH                                     | INOR-171-6205                   | SM 4500 H+              | PH METER             |
| p - Alkalinity (as CaCO <sub>3</sub> ) | INOR-171-6205                   | SM 2320 B               | TITRATION            |
| T - Alkalinity (as CaCO <sub>3</sub> ) | INOR-171-6205                   | SM 2320 B               | TITRATION            |
| Bicarbonate                            | INOR-171-6205                   | SM 2320 B               | PC TITRATE           |
| Carbonate                              | INOR-171-6205                   | SM 2320 B               | PC TITRATE           |
| Hydroxide                              | INOR-171-6205                   | SM 2320 B               | TITRATION            |
| Electrical Conductivity                | INOR-171-6205                   | SM 2510 B               | CONDUCTIVITY METER   |
| Fluoride                               | INST 0150                       | SM 4110 B               | ION CHROMATOGRAPH    |
| Chloride                               | INOR-171-6200                   | SM 4110 B               | ION CHROMATOGRAPH    |
| Nitrite                                | INST 0150                       | SM 4110 B               | ION CHROMATOGRAPH    |
| Nitrite-N                              | INST 0150                       | SM 4110 B               | ION CHROMATOGRAPH    |
| Nitrate                                | INOR-171-6200                   | SM 4110 B               | ION CHROMATOGRAPH    |
| Nitrate-N                              | INST 0150                       | SM 4110 B               | ION CHROMATOGRAPH    |
| Nitrate+Nitrite - Nitrogen             | INOR-171-6200                   | SM 4110 B               | ION CHROMATOGRAPH    |
| Sulfate                                | INOR-171-6200                   | SM 4110 B               | ION CHROMATOGRAPH    |
| Dissolved Calcium                      | INOR-171-6201                   | SM 3120 B               | ICP/OES              |
| Dissolved Magnesium                    | INST 0140                       | SM 3120 B               | ICP/OES              |
| Dissolved Potassium                    | INST 0140                       | SM 3120 B               | ICP/OES              |
| Calculated TDS                         |                                 | SM 1030E                | CALCULATION          |
| Sodium Adsorption Ratio                |                                 | CARTER & GREGORICH 2007 | ICP/OES              |
| Hardness                               |                                 | SM 3120 B               | ICP/OES              |
| Ion Balance                            |                                 | SM 1030E                | CALCULATION          |





# AGAT Laboratories

## SAMPLE INTEGRITY RECEIPT FORM

### RECEIVING BASICS - Shipping

Company/Consultant: IEG  
 Courier: Can North Prepaid Collect  
 Waybill# 518-YEV-1063T499  
 Branch  EDM GP FN FM RD VAN LYD FSJ EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once:  Yes No  
 Custody Seal Intact: Yes No  NA  
 TAT: <24hr 24-48hr 48-72hr  Reg Other \_\_\_\_\_  
 Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes No  
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\* Routine  
 Earliest Expiry: \_\_\_\_\_  
 Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No  
 International Samples: Yes  No  
 Tape Sealed: Yes  No  
 Coolant Used: Icepack  Bagged Ice Free Ice Free Water None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 9.7 + 9.1 + 9 = 9.3 °C 2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E510217  
 Samples Damaged: Yes  No If YES why?  
 No Bubble Wrap Frozen Courier  
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes No  
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* Subcontracted Analysis (See CPM)



|  |   |  |  |
|--|---|--|--|
| Shipper's Name and Address<br>Nom et adresse de l'expéditeur   |   | Not negotiable / Non négociable<br><b>Air Waybill / Lettre de transport aérien</b><br>Issued by / Émise par  |  |
| IEG<br>Inuvik<br>Northwest Territories, Canada<br>X0E 0T0 403-829-3048<br>Attn: Kim MacKenzie  |   | Canadian North, 101 3731 52 Ave E,<br>Edmonton International Airport, AB,<br>Canada, T9E0V4  |  |
| Consignee's Name and Address<br>Nom et adresse du destinataire   |   | Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.<br>Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.   |  |
| AGAT Laboratories Ltd<br>6310 Roper Road NW<br>Edmonton<br>Alberta, Canada<br>T6E 6S4 780-395-2525<br>Attn: Abbey  |   | It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY.<br>Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR. |  |
| Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur   |   | Accounting Information / Renseignements comptables<br><b>KLO100CW</b>  |  |
| Agent's IATA Code / Code IATA de l'agent   | Account Number / Numéro de compte                                 | IEG Consultants Ltd.<br>500 - 2618 Hopewell Place NE<br>Calgary<br>AB, Canada<br>T1Y 7J7<br>PO:  |  |
| Airport of Departure (Address of First Carrier) and Requested Routing<br>Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé<br><b>Inuvik</b> |   |  |  |
| To / à<br><b>YEG</b>   | By first carrier / Par premier transport<br><b>CANADIAN NORTH</b> | To / à<br>by / par   | To / à<br>by / par   |
| Airport of Destination / Aéroport de destination<br><b>Edmonton</b>  |   | Fight Date - For Carrier Use Only<br>Vol. Date - Réserve au Transporteur   | Amount of Insurance<br>Montant de l'assurance                              |
|  |   | Currency<br>Monnaie<br><b>CDN</b>  | CHGS<br>Code Frais<br><b>PX</b>  |
|  |   | WT / Poids-Vol<br>PPD Payé<br><b>X</b>   | Other/Autres<br>COLL Du<br><b>X</b>  |
|  |   | Declared Value for Carriage<br>Valeur déclarée pour la transport<br><b>NDV</b>   | Declared value for Customs<br>Valeur déclarée pour la douane<br><b>NCV</b> |
| Handling Information / Renseignements pour le traitement de l'expédition<br><b>HFPU</b>  |   |  |  |
| <b>SCI</b>   |   |  |  |

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut<br>kg<br>lb | Chargeable Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total | Commodity Item No.<br>No. d'article de la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|--|--|----------------------------------|-----------|-------|---|---|
| 3                                       | 55 K                                   | 55                                     |                                  |           |       | GAD   | Soil Samples 60cm x 33cm x 106cm  |
| 3                                       | 55                                     | 55                                     |                                  |           |       |   |   |

|   |  |   |
|---|--|---|
| Weight Charge<br>Prepaid / Porté payé   | Taxation au poids<br>Collect / Port dû     | Other Charges / Autres frais  |
| Valuation Charge  | Taxation à la valeur                       |   |
| Tax   | Taxe                                       |   |
| Total other Charges Due Agent   | Total des autres frais dus à l'agent       |   |
| Total other Charges Due Carrier   | Total des autres frais dus au              |   |
| Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent   |  |   |
| Total Prepaid / Total port payé   | Total collect / Total port dû              |   |
| 23 Aug 2019   |  | YEV   |
| Executed on / Fait le (Date) (Date) at / à (Place) (Lieu)                       |  | Signature of issuing Carrier or its Agent<br>Signature du Transporteur émetteur ou de son Agent |
| For Carrier's User only at Destination<br>Réserve au transporteur à destination | Charges at Destination / Frais à l'arrivée | Total Collect Charges / Total Du  |

CLIENT NAME: IEG CONSULTANTS LTD  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 262-5505

ATTENTION TO: Kyle Schepanow

PROJECT: A04012A11

AGAT WORK ORDER: 19E510680

TRACE ORGANICS REVIEWED BY: Laarni Hafso, Laboratory Manager

DATE REPORTED: Sep 03, 2019

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E510680

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-27

DATE REPORTED: 2019-09-02

| Parameter                      | Unit  | SAMPLE DESCRIPTION: |            |            |            |            |            |            |            |          |
|--------------------------------|-------|---------------------|------------|------------|------------|------------|------------|------------|------------|----------|
|                                |       | G / S               |            | WR14-008   | WR14-009   | WR14-010   | WR14-011   | WR14-012   | WR14-013   | WR14-014 |
|                                |       | RDL                 | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       | Soil     |
| DATE SAMPLED:                  |       | 2019-08-22          | 2019-08-22 | 2019-08-22 | 2019-08-22 | 2019-08-22 | 2019-08-22 | 2019-08-22 | 2019-08-22 |          |
| Benzene                        | mg/kg | 0.005               | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005     | <0.005   |
| Toluene                        | mg/kg | 0.05                | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05      | <0.05    |
| Ethylbenzene                   | mg/kg | 0.01                | 0.01       | <0.01      | 0.02       | 0.11       | 0.02       | <0.01      | 0.01       |          |
| Xylenes                        | mg/kg | 0.05                | 0.07       | <0.05      | <0.05      | 0.48       | 0.08       | <0.05      | 0.05       |          |
| C6 - C10 (F1)                  | mg/kg | 10                  | 20         | 10         | 20         | 20         | 30         | 10         | 20         |          |
| C6 - C10 (F1 minus BTEX)       | mg/kg | 10                  | 20         | 10         | 20         | 20         | 30         | 10         | 20         |          |
| C10 - C16 (F2)                 | mg/kg | 10                  | 590        | 780        | 1100       | 590        | 650        | 780        | 990        |          |
| C16 - C34 (F3)                 | mg/kg | 10                  | 360        | 520        | 760        | 380        | 450        | 470        | 710        |          |
| C34 - C50 (F4)                 | mg/kg | 10                  | 20         | 30         | 50         | 20         | 30         | 30         | 60         |          |
| Gravimetric Heavy Hydrocarbons | mg/kg | 1000                | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        |          |
| Moisture Content               | %     | 1                   | 16         | 16         | 14         | 16         | 16         | 16         | 16         |          |
| Surrogate                      | Unit  | Acceptable Limits   |            |            |            |            |            |            |            |          |
| Toluene-d8 (BTEX)              | %     | 50-150              | 101        | 101        | 101        | 102        | 102        | 101        | 102        |          |
| Ethylbenzene-d10 (BTEX)        | %     | 50-150              | 93         | 96         | 88         | 90         | 95         | 87         | 86         |          |
| o-Terphenyl (F2-F4)            | %     | 50-150              | 83         | 93         | 90         | 91         | 82         | 91         | 95         |          |

Certified By:





## Certificate of Analysis

AGAT WORK ORDER: 19E510680

PROJECT: A04012A11

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: IEG CONSULTANTS LTD

ATTENTION TO: Kyle Schepanow

SAMPLING SITE:

SAMPLED BY:

### Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2019-08-27

DATE REPORTED: 2019-09-02

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

478086-478094

Results are based on the dry weight of the sample.  
 The C6-C10 (F1) fraction is calculated using toluene response factor.  
 The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
 Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
 Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).  
 Quality control data is available upon request.  
 Assistance in the interpretation of data is available upon request.  
 This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
 nC6 and nC10 response factors are within 30% of Toluene response factor.  
 nC10, nC16 and nC34 response factors are within 10% of their average.  
 C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
 Linearity is within 15%.  
 The chromatogram returned to baseline by the retention time of nC50.  
 Extraction and holding times were met for this sample.  
 C6 -C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
 Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: IEG CONSULTANTS LTD  
 PROJECT: A04012A11  
 SAMPLING SITE:

AGAT WORK ORDER: 19E510680  
 ATTENTION TO: Kyle Schepanow  
 SAMPLED BY:

### Trace Organics Analysis

| RPT Date:   |       | DUPLICATE |        |        |      |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       |          | MATRIX SPIKE      |       |  |
|---|-------|-----------|--------|--------|------|----------------|--------------|--------------------|-------|----------|--------------------|-------|----------|-------------------|-------|--|
| PARAMETER   | Batch | Sample Id | Dup #1 | Dup #2 | RPD  | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery | Acceptable Limits |       |  |
|   |       |           |        |        |      |                |              | Lower              | Upper |          | Lower              | Upper |          | Lower             | Upper |  |
| Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized) |       |           |        |        |      |                |              |                    |       |          |                    |       |          |                   |       |  |
| Benzene   | 2123  | 475264    | <0.005 | <0.005 | NA   | < 0.005        | 98%          | 80%                | 120%  | 86%      | 80%                | 120%  | 92%      | 60%               | 140%  |  |
| Toluene   | 2123  | 475264    | <0.05  | <0.05  | NA   | < 0.05         | 101%         | 80%                | 120%  | 86%      | 80%                | 120%  | 93%      | 60%               | 140%  |  |
| Ethylbenzene  | 2123  | 475264    | <0.01  | <0.01  | NA   | < 0.01         | 108%         | 80%                | 120%  | 89%      | 80%                | 120%  | 102%     | 60%               | 140%  |  |
| Xylenes   | 2123  | 475264    | <0.05  | <0.05  | NA   | < 0.05         | 111%         | 80%                | 120%  | 86%      | 80%                | 120%  | 98%      | 60%               | 140%  |  |
| C6 - C10 (F1)   | 2123  | 475264    | <10    | <10    | NA   | < 10           | 90%          | 80%                | 120%  | 92%      | 80%                | 120%  | 69%      | 60%               | 140%  |  |
| C10 - C16 (F2)  | 1524  | 475264    | <10    | <10    | NA   | < 10           | 102%         | 80%                | 120%  | 95%      | 80%                | 120%  | 124%     | 60%               | 140%  |  |
| C16 - C34 (F3)  | 1524  | 475264    | 40     | 20     | NA   | < 10           | 104%         | 80%                | 120%  | 107%     | 80%                | 120%  | 118%     | 60%               | 140%  |  |
| C34 - C50 (F4)  | 1524  | 475264    | 10     | <10    | NA   | < 10           | 101%         | 80%                | 120%  | 94%      | 80%                | 120%  | 139%     | 60%               | 140%  |  |
| Moisture Content  | 1524  | 475264    | 16     | 16     | 0.0% | < 1            |              |                    |       |          |                    |       |          |                   |       |  |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
 The sample spikes and dups are not from the same sample ID.

Certified By: \_\_\_\_\_



## Method Summary

 CLIENT NAME: IEG CONSULTANTS LTD  
 PROJECT: A04012A11  
 SAMPLING SITE:

 AGAT WORK ORDER: 19E510680  
 ATTENTION TO: Kyle Schepanow  
 SAMPLED BY:

| PARAMETER                      | AGAT S.O.P                      | LITERATURE REFERENCE   | ANALYTICAL TECHNIQUE |
|--------------------------------|---------------------------------|------------------------|----------------------|
| Trace Organics Analysis        |                                 |                        |                      |
| Benzene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Toluene                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene                   | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Xylenes                        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| C6 - C10 (F1)                  | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C6 - C10 (F1 minus BTEX)       | ORG-170-<br>5110/5140/5430/5440 | CCME Tier 1 Method-S L | GC/FID               |
| C10 - C16 (F2)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C16 - C34 (F3)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| C34 - C50 (F4)                 | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Gravimetric Heavy Hydrocarbons | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |
| Moisture Content               | LAB-175-4002                    | CCME Tier 1 Method-S % | GRAVIMETRIC          |
| Toluene-d8 (BTEX)              | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| Ethylbenzene-d10 (BTEX)        | ORG-170-<br>5110/5140/5430/5440 | EPA SW-846 8260-S      | GC/MS                |
| o-Terphenyl (F2-F4)            | ORG-170-5120/5300               | CCME Tier 1 Method-S H | GC/FID               |





# AGAT Laboratories

## SAMPLE INTEGRITY RECEIPT FORM

### RECEIVING BASICS - Shipping

Company/Consultant: IGG Consultants

Courier: Canadian North Prepaid Collect

Waybill# 518-YEV-1063690

Branch  EDM  GP  FN  FM  RD  VAN  LYD  FSJ  EST Other: \_\_\_\_\_

If multiple sites were submitted at once: Yes  No

Custody Seal Intact: Yes  No

TAT: <24hr  24-48hr  48-72hr  Other \_\_\_\_\_

Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No

Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\*

Earliest Expiry: \_\_\_\_\_

Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_

Legal Samples: Yes  NO

International Samples: Yes  NO

Tape Sealed: Yes  NO

Coolant Used: Icepack  Bagged Ice  Free Ice  Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 8-6 + 8-6 + 8-6 = 8-6 °C 2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E510680

Samples Damaged: Yes  No  if YES why?

No Bubble Wrap  Frozen  Courier

Other: \_\_\_\_\_

Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes  No

Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_

CPM Initial \_\_\_\_\_

General Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\* Subcontracted Analysis (See CPM)



CANADIAN NORTH

518-YEV-10636990

Shipper's Name and Address / Nom et adresse de l'expéditeur  
IEG  
Inuvik  
Northwest Territories, Canada  
X0E 0T0 403-829-3048  
Attn: Kim MacKenzie

Not negotiable / Non négociable  
**Air Waybill / Lettre de transport aérien**  
Issued by / Émis par  
Canadian North: 101 3731 52 Ave E,  
Edmonton International Airport, AB,  
Canada, T9E0V4

Copies 1, 2, 3 & 4 of this Air Waybill are originals and have the same validity.  
Les exemplaires 1, 2, 3 et 4 de cette lettre de transport aérien sont originaux et ont la même validité.

Consignee's Name and Address / Nom et adresse du destinataire  
AGAT Laboratories Ltd  
6310 Roper Road NW  
Edmonton  
Alberta, Canada  
T6E 6S4 780-395-2525  
Attn: Abbey

It is agreed that the goods described herein are accepted for carriage in apparent good order and condition (except as noted) and SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREOF BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Il est convenu que les marchandises décrites dans le présent document sont acceptées pour le transport en bon état apparent (sauf annotation contraire) et que le transport est SOUMIS AUX CONDITIONS DU CONTRAT QUI FIGURENT AU VERSO. LES MARCHANDISES PEUVENT ÊTRE TRANSPORTÉES PAR TOUT AUTRE MOYEN Y COMPRIS PAR ROUTE OU PAR TOUT AUTRE TRANSPORTEUR À MOINS QUE DES INSTRUCTIONS CONTRAIRES PRÉCISES, À CE SUJET NE SOIENT DONNÉES PAR L'EXPÉDITEUR. L'ATTENTION DE L'EXPÉDITEUR EST ATTIRÉE SUR L'AVIS CONCERNANT LA LIMITATION DE RESPONSABILITÉ DU TRANSPORTEUR.

Issuing Carrier's Agent Name and City / Nom et ville de l'agent du transporteur émetteur  
Accounting Information / Renseignements comptables  
**KLO100CW**

Agent's IATA Code / Code IATA de l'agent  
Account Number / Numéro de compte  
IEG Consultants Ltd.  
500 - 2618 Hopewell Place NE  
Calgary  
AB, Canada  
T1Y 7J7  
PO:

Airport of Departure (Address of First Carrier) and Requested Routing / Aéroport de départ (Adresse du premier transporteur) et itinéraire demandé  
**Inuvik**

|   |  |   |          |        |          |   |                                 |                         |              |  |  |
|---|--|---|----------|--------|----------|---|---------------------------------|-------------------------|--------------|--|--|
| To / à<br><b>YEG</b>  | By first carrier / Par premier transport.<br><b>CANADIAN NORTH</b> | To / à  | by / par | To / à | by / par | Currency<br>Monnaie<br><b>CDN</b>   | CHGS<br>Code Frais<br><b>PX</b> | WT / Poids-Val          | Other/Autres | Declared Value for Carriage<br>Valeur déclarée pour la transport | Declared value for Customs<br>Valeur déclarée pour la douane |
| Airport of Destination / Aéroport de destination<br><b>Edmonton</b> |  | Flight Date - For Carrier Use Only<br>Vol. Date - Réservé au Transporteur |          |        |          | PPD<br>Payé<br><b>X</b>   | COLL<br>Du                      | PPD<br>Payé<br><b>X</b> | COLL<br>Du   | <b>NDV</b>   | <b>NCV</b>   |
| Amount of Insurance<br>Montant de l'assurance                       |  |   |          |        |          | INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures box marked "Amount of Insurance".<br>ASSURANCE - si le transporteur propose une assurance et que l'expéditeur en fait la demande conformément aux présentes conditions, indiquer le montant à assurer en chiffres dans la case "Montant de l'assurance". |                                 |                         |              |  |  |

Handling Information / Renseignements pour le traitement de l'expédition  
**HFPU**  
**Keep Cool**

**SCI**

| No. of Pieces<br>Nombre de colis<br>RCP | Gross Weight<br>Poids brut<br>kg<br>lb | Chargeable Weight<br>Poids de taxation | Rate / Charge<br>Tarif / Montant | Interline | Total    | Commodity Item<br>No.<br>No. d'article de la marchandise | Description of Goods<br>(inc. Dimensions or Volume)<br>Description des marchandises<br>(y compris dimensions ou volume) |
|---|--|--|----------------------------------|-----------|----------|--|---|
| 1                                       | 15 K                                   | 15                                     | 7.57                             |           | \$113.55 | GAD  | Soil Samples 60cm x 33cm x 34cm   |

|   |  |
|---|--|
| Weight Charge<br>Prepaid / Porte payé<br><b>\$113.55</b>                        | Taxation au poids<br>Collect / Port dû     |
| Valuation Charge<br>Taxation à la valeur  | Tax<br><b>\$7.59</b>                       |
| Total other Charges Due Agent   | Total des autres frais dûs à l'agent       |
| Total other Charges Due Carrier<br><b>\$38.16</b>                               | Total des autres frais dûs au              |
| Total Prepaid / Total port payé<br><b>\$159.30</b>                              | Total collect / Total port dû              |
| For Carrier's User only at Destination<br>Réservé au transporteur à destination | Charges at Destination / Frais à l'arrivée |

Other Charges / Autres frais  
**5T Nav Can Surcharge = 5.68, ACS Screening Fee = 7.50, 5T Fuel Surcharge = 24.98, GST/HST = 7.59**

Shipper certifies that the particulars on the face hereof are correct and the insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.  
L'expéditeur certifie que les indications portées sur le présent document sont exactes et que dans la mesure ou une partie quelconque de l'expédition contient des marchandises dangereuses, cette partie de l'expédition est correctement dénommée et bien préparée pour le transport par air conformément à la réglementation applicable.

Signature of Shipper or his Agent / Signature de l'expéditeur ou de son Agent  
**26 Aug 2019** **YEV**

Executed on / Fait le (Date) at / à (Place)  
Signature of Issuing Carrier or its Agent / Signature du Transporteur émetteur ou de son Agent

Total Collect Charges / Total Du

518-YEV-10636990

CLIENT NAME: KLOHN CRIPPEN BERGER LTD.  
500-2618 HOPEWELL PLACE NE  
CALGARY, AB T1Y7J7  
(403) 274-3424

ATTENTION TO: Stephanie Hannem

PROJECT: A05111A05

AGAT WORK ORDER: 19E530590

SOIL ANALYSIS REVIEWED BY: Dev Vyas, Inorganics Laboratory Manager

DATE REPORTED: Oct 21, 2019

PAGES (INCLUDING COVER): 10

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 395-2525

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 19E530590

PROJECT: A05111A05

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: KLOHN CRIPPEN BERGER LTD.

ATTENTION TO: Stephanie Hannem

SAMPLING SITE:

SAMPLED BY:

### Particle Size by Hydrometer

DATE RECEIVED: 2019-10-11

DATE REPORTED: 2019-10-18

| SAMPLE DESCRIPTION:               |      | C-6-TS     | C-C1-TS    | S5-TS      | S5-S5           | S2-TS      | S2-SS      | S7-TS      | S8-TS      |           |           |
|-----------------------------------|------|------------|------------|------------|-----------------|------------|------------|------------|------------|-----------|-----------|
| SAMPLE TYPE:                      |      | Soil       | Soil       | Soil       | Soil            | Soil       | Soil       | Soil       | Soil       |           |           |
| DATE SAMPLED:                     |      | 2019-10-10 | 2019-10-10 | 2019-10-11 | 2019-10-11      | 2019-10-11 | 2019-10-11 | 2019-10-11 | 2019-10-11 |           |           |
| Parameter                         | Unit | G / S      | RDL        | 617171     | 617180          | 617181     | 617182     | 617183     | 617184     | 617185    | 617186    |
| Particle Size Distribution (Sand) | %    | 2          | 36         | 34         | 46              | 44         | 38         | 36         | 36         | 36        | 36        |
| Particle Size Distribution (Silt) | %    | NA         | 34         | 36         | 28              | 28         | 30         | 32         | 34         | 34        | 30        |
| Particle Size Distribution (Clay) | %    | NA         | 30         | 30         | 26              | 28         | 32         | 32         | 30         | 30        | 34        |
| Soil Texture                      |      |            | Clay Loam  | Clay Loam  | Sandy Clay Loam | Clay Loam  | Clay Loam  | Clay Loam  | Clay Loam  | Clay Loam | Clay Loam |

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

617171-617186 % Silt is a calculated parameter. The calculated value is determined by subtracting the percent sand and clay values from 100 percent.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:





# Certificate of Analysis

AGAT WORK ORDER: 19E530590

PROJECT: A05111A05

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: KLOHN CRIPPEN BERGER LTD.

ATTENTION TO: Stephanie Hannem

SAMPLING SITE:

SAMPLED BY:

## Soil Analysis - LOI

DATE RECEIVED: 2019-10-11

DATE REPORTED: 2019-10-21

|                                    |      | SAMPLE DESCRIPTION: |     | C-6-TS     | C-C1-TS    | S5-TS      | S2-TS      | S7-TS      | S8-TS      |
|------------------------------------|------|---------------------|-----|------------|------------|------------|------------|------------|------------|
|                                    |      | SAMPLE TYPE:        |     | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                    |      | DATE SAMPLED:       |     | 2019-10-10 | 2019-10-10 | 2019-10-11 | 2019-10-11 | 2019-10-11 | 2019-10-11 |
| Parameter                          | Unit | G / S               | RDL | 617171     | 617180     | 617181     | 617183     | 617185     | 617186     |
| Organic Matter by Loss on Ignition | %    |                     | 0.3 | 6.61       | 10.4       | 6.57       | 6.75       | 6.84       | 5.79       |

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Calgary (unless marked by \*)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E530590

PROJECT: A05111A05

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: KLOHN CRIPPEN BERGER LTD.

ATTENTION TO: Stephanie Hannem

SAMPLING SITE:

SAMPLED BY:

### Soil Analysis - Salinity (pH Calcium Chloride)

DATE RECEIVED: 2019-10-11

DATE REPORTED: 2019-10-17

| Parameter                            | Unit      | SAMPLE DESCRIPTION: |     | C-6-TS     | C-C1-TS    | S5-TS      | S5-S5      | S2-TS      | S2-SS      | S7-TS      | S8-TS      |
|--------------------------------------|-----------|---------------------|-----|------------|------------|------------|------------|------------|------------|------------|------------|
|                                      |           | G / S               | RDL | 2019-10-10 | 2019-10-10 | 2019-10-11 | 2019-10-11 | 2019-10-11 | 2019-10-11 | 2019-10-11 | 2019-10-11 |
| pH (CaCl2 Extraction)                | pH Units  | N/A                 |     | 7.15       | 6.96       | 7.03       | 7.35       | 7.24       | 7.29       | 7.20       | 7.36       |
| Electrical Conductivity (Sat. Paste) | dS/m      | 0.05                |     | 0.46       | 0.53       | 0.57       | 0.40       | 0.49       | 0.86       | 0.49       | 0.53       |
| Sodium Adsorption Ratio              | N/A       | 0.34                |     | <0.34      | <0.34      | <0.34      | <0.34      | <0.34      | <0.34      | <0.34      | 0.41       |
| Saturation Percentage                | %         | 1                   |     | 84         | 104        | 78         | 74         | 78         | 73         | 79         | 77         |
| Chloride, Soluble                    | mg/L      | 5                   |     | 14         | 30         | 24         | 9          | 11         | 9          | 18         | 12         |
| Calcium, Soluble                     | mg/L      | 1                   |     | 74         | 79         | 98         | 78         | 78         | 126        | 79         | 77         |
| Potassium, Soluble                   | mg/L      | 2                   |     | 9          | 6          | 26         | 4          | 14         | 14         | 15         | 14         |
| Magnesium, Soluble                   | mg/L      | 1                   |     | 15         | 23         | 11         | 7          | 13         | 23         | 13         | 14         |
| Sodium, Soluble                      | mg/L      | 2                   |     | 6          | 11         | 5          | 5          | 6          | 8          | 6          | 15         |
| Sulfate, Soluble                     | mg/L      | 2                   |     | 31         | 34         | 39         | 16         | 33         | 55         | 27         | 33         |
| Theoretical Gypsum Requirement       | tonnes/ha | 0.01                |     | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |
| Calcium, Soluble (meq/L)             | meq/L     | 0.05                |     | 3.69       | 3.94       | 4.89       | 3.89       | 3.89       | 6.29       | 3.94       | 3.84       |
| Calcium, Soluble (mg/kg)             | mg/kg     | 1                   |     | 62         | 82         | 76         | 58         | 61         | 92         | 62         | 59         |
| Chloride, Soluble (meq/L)            | meq/L     | 0.06                |     | 0.39       | 0.85       | 0.68       | 0.25       | 0.31       | 0.25       | 0.51       | 0.34       |
| Chloride, Soluble (mg/kg)            | mg/kg     | 2                   |     | 12         | 31         | 19         | 7          | 9          | 7          | 14         | 9          |
| Magnesium, Soluble (meq/L)           | meq/L     | 0.08                |     | 1.23       | 1.89       | 0.91       | 0.58       | 1.07       | 1.89       | 1.07       | 1.15       |
| Magnesium, Soluble (mg/kg)           | mg/kg     | 1                   |     | 13         | 24         | 9          | 5          | 10         | 17         | 10         | 11         |
| Potassium, Soluble (meq/L)           | meq/L     | 0.05                |     | 0.23       | 0.15       | 0.66       | 0.10       | 0.36       | 0.36       | 0.38       | 0.36       |
| Potassium, Soluble (mg/kg)           | mg/kg     | 2                   |     | 8          | 6          | 20         | 3          | 11         | 10         | 12         | 11         |
| Sodium, Soluble (meq/L)              | meq/L     | 0.09                |     | 0.26       | 0.48       | 0.22       | 0.22       | 0.26       | 0.35       | 0.26       | 0.65       |
| Sodium, Soluble (mg/kg)              | mg/kg     | 2                   |     | 5          | 11         | 4          | 4          | 5          | 6          | 5          | 12         |
| Sulfur (as Sulfate), Soluble (meq/L) | meq/L     | 0.04                |     | 0.65       | 0.71       | 0.81       | 0.33       | 0.69       | 1.15       | 0.56       | 0.69       |
| Sulfur (as Sulfate), Soluble (mg/kg) | mg/kg     | 2                   |     | 26         | 35         | 30         | 12         | 26         | 40         | 21         | 25         |

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

617171-617186 If sodium results in mg/L are less than detection, SAR is non-calculable and is reported as 0.

Sodium Adsorption Ratio is a calculated parameter. The calculated value is the ratio of the sodium concentration in mmol/L over the square rooted sum of the calcium and magnesium concentrations in mmol/L.

Theoretical Gypsum Requirement is a calculated parameter. The calculation is from "A Comparison of Methods for Gypsum Requirement of Brine-Contaminated Soils", Canadian Journal of Soil Science, 1998.

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 19E530590

PROJECT: A05111A05

6310 ROPER ROAD  
EDMONTON, ALBERTA  
CANADA T6B 3P9  
TEL (780)395-2525  
FAX (780)462-2490  
<http://www.agatlabs.com>

CLIENT NAME: KLOHN CRIPPEN BERGER LTD.

ATTENTION TO: Stephanie Hannem

SAMPLING SITE:

SAMPLED BY:

### Soil Analysis - Total Organic Carbon (W-B Wet Oxidation)

DATE RECEIVED: 2019-10-11

DATE REPORTED: 2019-10-20

| Parameter                             | Unit | SAMPLE DESCRIPTION: |      | C-6-TS     | C-C1-TS    | S5-TS      | S2-TS      | S7-TS      | S8-TS      |
|---------------------------------------|------|---------------------|------|------------|------------|------------|------------|------------|------------|
|                                       |      | SAMPLE TYPE:        |      | Soil       | Soil       | Soil       | Soil       | Soil       | Soil       |
|                                       |      | DATE SAMPLED:       |      | 2019-10-10 | 2019-10-10 | 2019-10-11 | 2019-10-11 | 2019-10-11 | 2019-10-11 |
|                                       |      | G / S               | RDL  | 617171     | 617180     | 617181     | 617183     | 617185     | 617186     |
| Total Organic Carbon by Walkley Black | %    |                     | 0.15 | 3.30       | 4.86       | 3.08       | 3.30       | 3.61       | 3.06       |

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Edmonton (unless marked by \*)

Certified By:

## Quality Assurance

CLIENT NAME: KLOHN CRIPPEN BERGER LTD.  
PROJECT: A05111A05  
SAMPLING SITE:

AGAT WORK ORDER: 19E530590  
ATTENTION TO: Stephanie Hannem  
SAMPLED BY:

| Soil Analysis |       |           |           |        |     |                |              |                    |       |          |                    |       |              |                   |       |
|---------------|-------|-----------|-----------|--------|-----|----------------|--------------|--------------------|-------|----------|--------------------|-------|--------------|-------------------|-------|
| RPT Date:     |       |           | DUPLICATE |        |     |                | Method Blank | REFERENCE MATERIAL |       |          | METHOD BLANK SPIKE |       | MATRIX SPIKE |                   |       |
| PARAMETER     | Batch | Sample Id | Dup #1    | Dup #2 | RPD | Measured Value |              | Acceptable Limits  |       | Recovery | Acceptable Limits  |       | Recovery     | Acceptable Limits |       |
|               |       |           |           |        |     |                |              | Lower              | Upper |          | Lower              | Upper |              | Lower             | Upper |

### Soil Analysis - Salinity (pH Calcium Chloride)

|                                      |      |        |      |      |      |        |      |     |      |    |  |  |  |      |     |      |
|--------------------------------------|------|--------|------|------|------|--------|------|-----|------|----|--|--|--|------|-----|------|
| pH (CaCl <sub>2</sub> Extraction)    | 290  | 561434 | 7.77 | 7.81 | 0.5% | N/A    | 99%  | 90% | 110% |    |  |  |  |      |     |      |
| Electrical Conductivity (Sat. Paste) | 290  | 561434 | 4.08 | 4.17 | 2.2% | < 0.05 | 108% | 90% | 110% | NA |  |  |  | NA   |     |      |
| Saturation Percentage                | 290  | 561434 | 63   | 64   | 1.6% | < 1    | NA   | 80% | 120% | NA |  |  |  | NA   |     |      |
| Chloride, Soluble                    | 2660 | 561434 | 116  | 119  | 2.6% | < 5    | 105% | 80% | 120% |    |  |  |  | 109% | 80% | 120% |
| Calcium, Soluble                     | 290  | 561434 | 99   | 97   | 2.3% | < 1    | 100% | 80% | 120% |    |  |  |  | 100% | 80% | 120% |
| Potassium, Soluble                   | 290  | 561434 | 11   | 10   | 6.5% | < 2    | 98%  | 80% | 120% |    |  |  |  | 94%  | 80% | 120% |
| Magnesium, Soluble                   | 290  | 561434 | 118  | 114  | 3.2% | < 1    | 103% | 80% | 120% |    |  |  |  | 97%  | 80% | 120% |
| Sodium, Soluble                      | 290  | 561434 | 773  | 746  | 3.5% | < 2    | 102% | 80% | 120% |    |  |  |  | 97%  | 80% | 120% |
| Sulfate, Soluble                     | 290  | 561434 | 1790 | 1730 | 3.0% | < 2    | 92%  | 80% | 120% |    |  |  |  | 103% | 80% | 120% |

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.  
If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.

### Particle Size by Hydrometer

|                                   |     |        |    |    |      |     |      |     |      |    |  |  |  |    |  |
|-----------------------------------|-----|--------|----|----|------|-----|------|-----|------|----|--|--|--|----|--|
| Particle Size Distribution (Sand) | 291 | 616279 | 52 | 52 | 0.0% | < 2 | 88%  | 80% | 120% | NA |  |  |  | NA |  |
| Particle Size Distribution (Silt) | 291 | 616279 | 20 | 20 | 0.0% |     | 100% | 80% | 120% | NA |  |  |  | NA |  |
| Particle Size Distribution (Clay) | 291 | 616279 | 28 | 28 | 0.0% |     | 112% | 80% | 120% | NA |  |  |  | NA |  |

### Soil Analysis - Total Organic Carbon (W-B Wet Oxidation)

|                                       |     |       |      |      |      |        |     |     |      |  |  |  |  |      |     |      |
|---------------------------------------|-----|-------|------|------|------|--------|-----|-----|------|--|--|--|--|------|-----|------|
| Total Organic Carbon by Walkley Black | 293 | 61717 | 3.30 | 3.18 | 3.7% | < 0.15 | 93% | 80% | 120% |  |  |  |  | 104% | 80% | 120% |
|---------------------------------------|-----|-------|------|------|------|--------|-----|-----|------|--|--|--|--|------|-----|------|

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

### Soil Analysis - LOI

|                                    |     |  |      |      |      |       |     |     |      |  |  |  |  |     |      |
|------------------------------------|-----|--|------|------|------|-------|-----|-----|------|--|--|--|--|-----|------|
| Organic Matter by Loss on Ignition | 635 |  | 3.57 | 3.59 | 0.6% | < 0.3 | 97% | 80% | 120% |  |  |  |  | 80% | 120% |
|------------------------------------|-----|--|------|------|------|-------|-----|-----|------|--|--|--|--|-----|------|

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: KLOHN CRIPPEN BERGER LTD.

AGAT WORK ORDER: 19E530590

PROJECT: A05111A05

ATTENTION TO: Stephanie Hannem

SAMPLING SITE:

SAMPLED BY:

| PARAMETER                             | AGAT S.O.P                      | LITERATURE REFERENCE                             | ANALYTICAL TECHNIQUE |
|---------------------------------------|---------------------------------|--|----------------------|
| Soil Analysis                         |                                 |  |                      |
| Particle Size Distribution (Sand)     | INOR-171-6010                   | JONES 2001; SHEPPARD 2007                        | HYDROMETER           |
| Particle Size Distribution (Silt)     | INOR-171-6010                   | JONES 2001; SHEPPARD 2007                        | HYDROMETER           |
| Particle Size Distribution (Clay)     | SOIL 0520; SOIL 0110; SOIL 0120 | JONES 2001; SHEPPARD 2007                        | HYDROMETER           |
| Organic Matter by Loss on Ignition    | SOIL 470                        | Loss on Ignition, 1996, SSSA                     | COMBUSTION           |
| pH (CaCl <sub>2</sub> Extraction)     | INOR-171-6207                   | SHEPPARD 2007; HENDERSHOT 2008                   | PH METER             |
| Electrical Conductivity (Sat. Paste)  | INOR-171-6208                   | SHEPPARD 2007; MILLER 2007                       | CONDUCTIVITY METER   |
| Sodium Adsorption Ratio               | INOR-171-6201 & INOR-171-6002   | McKeague 3.26                                    | CALCULATION          |
| Saturation Percentage                 | INOR-171-6002                   | MILLER 2007; SHEPPARD 2007                       | GRAVIMETRIC          |
| Chloride, Soluble                     | INOR-171-6212                   | CARTER & GREGORICH 2007, SM 3120B                | COLORIMETER          |
| Calcium, Soluble                      | INOR-171-6201                   | CARTER & GREGORICH 2007, SM 3120B                | ICP/OES              |
| Potassium, Soluble                    | INOR-171-6201                   | CARTER & GREGORICH 2007, SM 3120B                | ICP/OES              |
| Magnesium, Soluble                    | INOR-171-6201                   | CARTER & GREGORICH 2007, SM 3120B                | ICP/OES              |
| Sodium, Soluble                       | INOR-171-6201                   | CARTER & GREGORICH 2007, SM 3120B                | ICP/OES              |
| Sulfate, Soluble                      | INOR-171-6201 & INOR-171-6002   | SHEPPARD 2007; EATON 2005; MILLER 2007, SM 3120B | ICP/OES              |
| Theoretical Gypsum Requirement        | INOR-171-6201 & INOR-171-6002   | USDA HDBK 60, 22D                                | CALCULATION          |
| Total Organic Carbon by Walkley Black | INORG-171-6216                  | NELSON 1996; SHEPPARD 2007                       | SPECTROPHOTOMETER    |

## Katelyn Wright

---

**From:** Chantal Seeney  
**Sent:** Tuesday, October 15, 2019 10:20 AM  
**To:** Suneetha Nallapaneni  
**Cc:** AGAT Edmonton Env Logistics  
**Subject:** RE: Klohn

Please assign both:

|       |   |
|-------|---|
| 58109 | Total Organic Carbon/Organic Matter (Walkley-Black) |
| 58108 | Organic Matter - Loss on Ignition                   |

Chantal Seeney  
*Senior Client Project Manager*  
AGAT Laboratories  
Direct: 780.395.2520  
Cell: 780.850.6704  
Email: [cseeney@agatlabs.com](mailto:cseeney@agatlabs.com)  
Follow us on LinkedIn

**AGAT offices will be closed Thanksgiving Monday, October 14th. Please contact your project manager for RUSH deliveries over this time.**

**Canadian Science and Technology in Action, Coast to Coast** 

---

**From:** Suneetha Nallapaneni  
**Sent:** Monday, October 14, 2019 12:53 PM  
**To:** Chantal Seeney  
**Cc:** AGAT Edmonton Env Logistics  
**Subject:** Klohn

Hi Chantal,

Client has requested TOC/OM , Can you confirm what is OM please?

Thank you,

Suneetha Nallapaneni  
*Logistics Control*  
AGAT Laboratories  
Direct: 780.395.2540  
Email: [nallapaneni@agatlabs.com](mailto:nallapaneni@agatlabs.com)

**Your Canadian National Laboratory** 





# AGAT Laboratories

## SAMPLE INTEGRITY RECEIPT FORM

### RECEIVING BASICS - Shipping

Company/Consultant: Klohn Crippen Berger  
 Courier: D/O Prepaid Collect  
 Waybill# \_\_\_\_\_  
 Branch  EDM GP FN FM RD VAN LYD FSJ EST Other: \_\_\_\_\_  
 If multiple sites were submitted at once: Yes  No  
 Custody Seal Intact: Yes No  NA  
 TAT: <24hr 24-48hr 48-72hr  Reg Other \_\_\_\_\_  
 Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No  
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity ,  
 Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* ,  
 Chloroamines\*  
 Earliest Expiry: \_\_\_\_\_  
 Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO Precaution Taken: \_\_\_\_\_  
 Legal Samples: Yes  No  
 International Samples: Yes  No  
 Tape Sealed: Yes  No  
 Coolant Used: Icepack Bagged Ice Free Ice Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 19E53090  
 Samples Damaged: Yes  No If YES why?  
 No Bubble Wrap Frozen Courier  
 Other: \_\_\_\_\_  
 Account Project Manager: \_\_\_\_\_ have they been notified of the  
 above issues: Yes No  
 Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 CPM Initial \_\_\_\_\_  
 General Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* Subcontracted Analysis (See CPM)



## APPENDIX VI

### Quality Assurance/Quality Control Procedure

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## Appendix VI Quality Assurance/Quality Control Procedure

### I-1 GENERAL PRINCIPLES

Precision in analytical results may be evaluated by calculating the Relative Percent Difference (RPD) or Absolute Difference (AD) between original samples and replicate (solid) or duplicate (aqueous) samples using the following formulae:

$$RPD = \frac{(S - D)}{(S + D) / 2} \times 100 \qquad AD = (S - D)$$

where: RPD and AD are absolute values,  
S is the original sample result (mg/kg or mg/L), and,  
D is the replicate or duplicate sample result (mg/kg or mg/L).

### I-2 ZEINER'S CRITERIA

Zeiner's *Environmental Standard's Field Duplicate Criteria* was applied to evaluate the precision of laboratory results (Zeiner 1994). Zeiner's criteria for evaluating solid (soil) and aqueous (groundwater) results are detailed in the sections below.

#### I-2.1 Soil Quality Assurance Protocol

Depending on the analyte concentrations of the original and replicate samples, soil results are evaluated according to the following criteria:

- If both the original and replicate soil sample concentrations are greater than five times the Reported Detection Limit (RDL) for a given parameter, the RPD must be less than or equal to 40% to be considered precise. If the results lie outside of this range, they are considered estimates only.
- If at least one of the sample concentrations is less than or equal to five times the RDL for a given parameter, the AD must be less than or equal to two times the RDL. If the AD is greater than two times the RDL, the results are considered estimates only.
- If one of the sample concentrations is positive and its replicate sample concentration is less than the RDL, the AD between the reported concentration and one-half the RDL must be less than or equal to two times the RDL. If the AD is greater than two times the RDL, the results are considered estimates only.

#### I-2.2 Groundwater Quality Assurance Protocol

Depending on the analyte concentrations of the original and duplicate samples, groundwater results are evaluated according to the following criteria:

- If both the original and duplicate groundwater sample concentrations are greater than five times the RDL for a given parameter, the RPD must be less than or equal to 20% to be considered precise. If the results were outside of the range, they are considered estimates only.
- If at least one of the sample concentrations is less than or equal to five times the RDL for a given parameter, the AD must be less than or equal to the RDL. If the AD is greater than the RDL, the results are considered estimates only.
- If one of the sample concentrations is positive and its duplicate sample concentration is less than the RDL, the AD between the reported concentration and one-half the RDL should be less than or equal to the RDL. If the AD is greater than the RDL, the results are considered estimates only.

## APPENDIX VII

### Borehole Logs

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# BORE HOLE LOG - ENVIRONMENTAL P19-1

|                                      |  |                            |  |
|--------------------------------------|--|----------------------------|--|
| CLIENT: Shell Canada Energy          | PROJECT: 2019 Remediation Program Report |                            |  |
| LOCATION: Northwest Area of Lease    | PROJECT NO.: A04012A11                   | DATE: August 20, 2019      |  |
| CO-ORDINATES: E 495860.0 N 7677797.0 | GROUND ELEVATION: Not Measured           | CASING ELEVATION: N/A      |  |
| HOLE DIA.: 3" (0.08m)                | CASING DIA.: 2" (0.05m)                  | TOTAL DEPTH OF HOLE: 0.4 m |  |
| DRILLING METHOD: Hand Auger          | DRILLING CONTRACTOR: MDIOS               |                            |  |
| LOGGED BY: KS                        | CHECKED BY: AW                           | Page 1 of 1                |  |

| DEPTH (m) | SYMBOL | MATERIAL DESCRIPTION   | WELL CONSTRUCTION | COMMENTS                       | SAMPLE TYPE | ◆ OVA (ppm) |     |     |     |     |
|-----------|--------|--|-------------------|--------------------------------|-------------|-------------|-----|-----|-----|-----|
|           |        |  |                   |                                |             | 100         | 300 | 500 | 700 | 900 |
| 1         |        | ORGANIC HORIZON (OL)<br>Black, low plasticity, moist, soft, rootlets, trace sandy silt   |                   | Backfilled with Bentonite seal |             |             |     |     |     |     |
| 2         |        | End of Hole at: 0.40 m<br><br>Auger Refusal at 0.4 mbgs<br>Frozen soil at 0.4 mbgs<br>No MW Installed and No samples collected |                   |                                |             |             |     |     |     |     |



# BORE HOLE LOG - ENVIRONMENTAL P19-2

|                                      |  |                          |  |
|--------------------------------------|--|--------------------------|--|
| CLIENT: Shell Canada Energy          | PROJECT: 2019 Remediation Program Report |                          |  |
| LOCATION: Northeast Area of Lease    | PROJECT NO.: A04012A11                   | DATE: August 20, 2019    |  |
| CO-ORDINATES: E 496089.0 N 7677854.0 | GROUND ELEVATION: Not Measured           | CASING ELEVATION: N/A    |  |
| HOLE DIA.: 3" (0.08m)                | CASING DIA.: 2" (0.05m)                  | TOTAL DEPTH OF HOLE: 1 m |  |
| DRILLING METHOD: Hand Auger          | DRILLING CONTRACTOR: MDIOS               |                          |  |
| LOGGED BY: KS                        | CHECKED BY: AW                           | Page 1 of 1              |  |

| DEPTH (m) | SYMBOL | MATERIAL DESCRIPTION   | WELL CONSTRUCTION | COMMENTS   | SAMPLE TYPE | ◆ OVA (ppm) |     |      |     |     |
|-----------|--------|--|-------------------|--|-------------|-------------|-----|------|-----|-----|
|           |        |  |                   |  |             | 100         | 300 | 500  | 700 | 900 |
|           |        | SANDY SILT (ML/SP)<br>Dark Grey, low plasticity, moist, rootlets (Topsoil)   |                   | 2" PVC Sch 40 well pipe<br>0.68 m stickup, lockable J-plug<br>No steel protective casing |             |             |     |      |     |     |
|           |        | SAND and GRAVEL FILL (GW)<br>Brown, coarse grained sandy, well graded, no plasticity, loose, subangular (max 25mm), moist, trace organics, poor recovery |                   | Bentonite seal   |             |             |     |      |     |     |
|           |        | At 0.3 to 0.4 mbgs wet, slight PPHC odour  |                   | 0.10" slot well screen<br>(0.4 to 0.8 mbgs)<br>10/20 filter sand                         |             |             |     |      |     |     |
|           |        | At 0.8 mbgs styrofoam in borehole, very slight PHC odour   |                   | Slough around well screen 0.5 to 0.9 mbgs  | Jar         |             |     | ◆550 |     |     |
|           |        | BURIED ORGANIC HORIZON (OL)<br>Black, low plasticity, moist, soft, rootlets, trace sandy silt  |                   | Pointed end cap  | Jar         | ◆25         |     |      |     |     |
| 1         |        | End of Hole at: 1.00 m<br><br>Borehole collapsing to 0.9 mbgs<br><br>Aug 20, 2019 Water Level at 0.3 mbgs  |                   |  |             |             |     |      |     |     |
| 2         |        |  |                   |  |             |             |     |      |     |     |

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## BORE HOLE LOG - ENVIRONMENTAL P19-3

|                                      |  |                            |  |
|--------------------------------------|--|----------------------------|--|
| CLIENT: Shell Canada Energy          | PROJECT: 2019 Remediation Program Report |                            |  |
| LOCATION: South of Emergency Shelter | PROJECT NO.: A04012A11                   | DATE: August 20, 2019      |  |
| CO-ORDINATES: E 496095.0 N 7677624.0 | GROUND ELEVATION: Not Measured           | CASING ELEVATION: N/A      |  |
| HOLE DIA.: 3" (0.08m)                | CASING DIA.: 2" (0.05m)                  | TOTAL DEPTH OF HOLE: 1.2 m |  |
| DRILLING METHOD: Hand Auger          | DRILLING CONTRACTOR: MDIOS               |                            |  |
| LOGGED BY: KS                        | CHECKED BY: AW                           | Page 1 of 1                |  |

| DEPTH (m) | SYMBOL | MATERIAL DESCRIPTION   | WELL CONSTRUCTION | COMMENTS                       | SAMPLE TYPE | ◆ OVA (ppm) |     |     |     |     |  |  |
|-----------|--------|--|-------------------|--------------------------------|-------------|-------------|-----|-----|-----|-----|--|--|
|           |        |  |                   |                                |             | 100         | 300 | 500 | 700 | 900 |  |  |
|           |        | SAND and GRAVEL FILL (GW)<br>Brown, coarse grained sandy, well graded, no plasticity, loose, subangular (max 25mm), moist, trace organics, poor recovery   |                   | Backfilled with Bentonite seal |             |             |     |     |     |     |  |  |
|           |        | BURIED ORGANIC HORIZON (OL)<br>Black, low plasticity, moist, soft, rootlets, trace sandy silt  |                   |                                | Jar         | ◆45         |     |     |     |     |  |  |
| 1         |        | SAND (SW)<br>Brown, fine grained sand, trace Silt, no plasticity, loose, moist, sub-round gravel   |                   |                                |             |             |     |     |     |     |  |  |
|           |        | End of Hole at: 1.20 m<br><br>Auger Refusal at 1.2 mbgs<br>Moved BH 1m east, auger refusal at 0.95 mbgs<br>BH dry, no water encountered<br>No MW Installed |                   |                                |             |             |     |     |     |     |  |  |
| 2         |        |  |                   |                                |             |             |     |     |     |     |  |  |



# BORE HOLE LOG - ENVIRONMENTAL P19-4

|  |  |                            |  |
|--|--|----------------------------|--|
| CLIENT: Shell Canada Energy              | PROJECT: 2019 Remediation Program Report |                            |  |
| LOCATION: South of Former Sotarge Shed#2 | PROJECT NO.: A04012A11                   | DATE: August 20, 2019      |  |
| CO-ORDINATES: E 495956.0 N 7697568.0     | GROUND ELEVATION: Not Measured           | CASING ELEVATION: N/A      |  |
| HOLE DIA.: 3" (0.08m)                    | CASING DIA.: 2" (0.05m)                  | TOTAL DEPTH OF HOLE: 2.1 m |  |
| DRILLING METHOD: Hand Auger              | DRILLING CONTRACTOR: MDIOS               |                            |  |
| LOGGED BY: KS                            | CHECKED BY: AW                           | Page 1 of 1                |  |

| DEPTH (m) | SYMBOL | MATERIAL DESCRIPTION  | WELL CONSTRUCTION | COMMENTS  | SAMPLE TYPE | ◆ OVA (ppm) |      |     |     |     |  |  |  |  |
|-----------|--------|---|-------------------|---|-------------|-------------|------|-----|-----|-----|--|--|--|--|
|           |        |   |                   |   |             | 100         | 300  | 500 | 700 | 900 |  |  |  |  |
|           |        | SAND and GRAVEL FILL (GW)<br>Brown, coarse grained sandy, well graded, low plasticity, loose, subangular (max 25mm), moist, trace organics, poor recovery   |                   | 2" PVC Sch 40 well pipe<br>0.75 m stickup<br>lockable J-plug<br>No steel protective casing<br>backfill with drill cuttings at surface |             |             |      |     |     |     |  |  |  |  |
|           |        | BURIED ORGANIC HORIZON (OL)<br>Black, low plasticity, moist, soft, rootlets, trace sandy silt   |                   | Bentonite seal  |             |             |      |     |     |     |  |  |  |  |
| 1         |        | SAND (SW)<br>Brown to Light Brown, fine grained sand, trace Silt, no plasticity, compact, moist, iron oxidation<br><br>Grades to medium grained Sand at 0.8 mbgs, less iron oxidation<br><br>Wet at 1.7 mbgs, rapid dilatency, BH begins to slump, no iron oxidation<br><br>Difficulty keeping borehole open from 1.8 to 2.1 mbgs |                   | 0.10" slot well screen<br>(0.7 to 1.9 mbgs)<br>10/20 filter sand  | Jar         |             | ◆ 50 |     |     |     |  |  |  |  |
| 2         |        |   |                   | Pointed end cap   | Jar         |             | ◆ 55 |     |     |     |  |  |  |  |
|           |        | End of Hole at: 2.10 m<br>Borehole colapsing at 1.5 mbgs<br>Aug 20, 2019 Water Level at 1.84 mbgs   |                   |   |             |             |      |     |     |     |  |  |  |  |

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# BORE HOLE LOG - ENVIRONMENTAL P19-5

|                                      |  |                            |
|--------------------------------------|--|----------------------------|
| CLIENT: Shell Canada Energy          | PROJECT: 2019 Remediation Program Report |                            |
| LOCATION: Southeast Area of Lease    | PROJECT NO.: A04012A11                   | DATE: August 20, 2019      |
| CO-ORDINATES: E 496214.0 N 7677680.0 | GROUND ELEVATION: Not Measured           | CASING ELEVATION: N/A      |
| HOLE DIA.: 3" (0.08m)                | CASING DIA.: 2" (0.05m)                  | TOTAL DEPTH OF HOLE: 1.5 m |
| DRILLING METHOD: Hand Auger          | DRILLING CONTRACTOR: MDIOS               |                            |
| LOGGED BY: KS                        | CHECKED BY: AW                           | Page 1 of 1                |

| DEPTH (m) | SYMBOL | MATERIAL DESCRIPTION  | WELL CONSTRUCTION   | COMMENTS  | SAMPLE TYPE | ◆ OVA (ppm) |     |     |     |     |
|-----------|--------|---|---|---|-------------|-------------|-----|-----|-----|-----|
|           |        |   |   |   |             | 100         | 300 | 500 | 700 | 900 |
|           |        | ORGANIC HORIZON (OL)<br>Black, low plasticity, moist, soft, rootlets, trace sandy silt  | [Diagram: 2" PVC pipe, 0.7m stickup, lockable J-plug, bentonite seal] | 2" PVC Sch 40 well pipe<br>0.7 m stickup<br>lockable J-plug<br>No steel protective casing<br><br>Bentonite seal |             |             |     |     |     |     |
|           |        | SAND (SW)<br>Brown to Light Brown, fine to medium grained sand, trace subangular gravel, low plasticity, loose, moist<br><br>Grades to medium grained Sand at 0.8 mbgs<br><br>Wet at 0.7 mbgs, rapid dilatency, BH begins to slump<br><br>Difficulty keeping borehole open from 0.8 to 1.2 mbgs | [Diagram: 0.10" slot well screen, 10/20 filter sand]                  | 0.10" slot well screen<br>(0.3 to 1.2 mbgs)<br>10/20 filter sand  |             |             |     |     |     |     |
| 1         |        |   | [Diagram: Slough around well screen]                                  | Slough around well screen 0.8 to 1.3 mbgs   | Jar         | ◆ 50        |     |     |     |     |
|           |        |   | [Diagram: Pointed end cap]  | Pointed end cap   |             |             |     |     |     |     |
|           |        | End of Hole at: 1.50 m<br><br>Borehole collapsing at 1.5 mbgs<br><br>Aug 20, 2019 Water Level at 0.64 mbgs  |   |   |             |             |     |     |     |     |
| 2         |        |   |   |   |             |             |     |     |     |     |

ENVIRONMENTAL-IEG (1)\_200308\_GINT\_BOREHOLE LOGS\_KS.GPJ\_KCBL\_CALGARY.GDT\_20-3-13



# BORE HOLE LOG - ENVIRONMENTAL P19-6

|                                      |  |                            |
|--------------------------------------|--|----------------------------|
| CLIENT: Shell Canada Energy          | PROJECT: 2019 Remediation Program Report |                            |
| LOCATION: East Side of Lease         | PROJECT NO.: A04012A11                   | DATE: August 20, 2019      |
| CO-ORDINATES: E 496205.0 N 7677811.0 | GROUND ELEVATION: Not Measured           | CASING ELEVATION: N/A      |
| HOLE DIA.: 3" (0.08m)                | CASING DIA.: 2" (0.05m)                  | TOTAL DEPTH OF HOLE: 0.9 m |
| DRILLING METHOD: Hand Auger          | DRILLING CONTRACTOR: MDIOS               |                            |
| LOGGED BY: KS                        | CHECKED BY: AW                           | Page 1 of 1                |

| DEPTH (m) | SYMBOL | MATERIAL DESCRIPTION   | WELL CONSTRUCTION | COMMENTS   | SAMPLE TYPE | ◆ OVA (ppm) |     |     |     |     |  |  |  |  |
|-----------|--------|--|-------------------|--|-------------|-------------|-----|-----|-----|-----|--|--|--|--|
|           |        |  |                   |  |             | 100         | 300 | 500 | 700 | 900 |  |  |  |  |
|           | ●      | SILT (ML)<br>Dark Brown-Grey, trace fine grained sand, low plasticity, moist, rootlets (Topsoil)   | ■                 | 2" PVC Sch 40 well pipe<br>0.73 m stickup<br>lockable J-plug<br>No steel protective casing<br>Bentonite seal |             |             |     |     |     |     |  |  |  |  |
|           | ●      | SAND and GRAVEL FILL (GW)<br>Grey, coarse grained sandy, well graded, no plasticity, loose, subround, moist, trace organics, poor recovery | □                 |  | Jar         | ◆ 55        |     |     |     |     |  |  |  |  |
|           | ■      | Wet at 0.3 mbgs<br>BURIED ORGANIC HORIZON (OL)<br>Black, low plasticity, moist, soft, rootlets, trace sandy silt                           | ▨                 | 0.10" slot well screen<br>(0.3 to 0.8 mbgs)<br>10/20 filter sand   |             |             |     |     |     |     |  |  |  |  |
|           | ■      |  | ■                 | Slough around well screen 0.7 to 0.9 mbgs  |             |             |     |     |     |     |  |  |  |  |
|           | ■      |  | ■                 | Pointed end cap  |             |             |     |     |     |     |  |  |  |  |
| 1         |        | End of Hole at: 0.90 m<br><br>Borehole collapsing at 0.9 mbgs<br><br>Aug 20, 2019 Water Level at 0.73 mbgs                                 |                   |  |             |             |     |     |     |     |  |  |  |  |
| 2         |        |  |                   |  |             |             |     |     |     |     |  |  |  |  |