REMEDIATION REPORT

Lots 15-18, Block 2, Plan 3892CL
Rycroft, Alberta
Alberta Municipal Affairs Site 9433

PREPARED FOR

1834328 Alberta Ltd.
P.O. Box 403
Grovedale, Alberta
T0H 1X0

March 9, 2017

SHARP Environmental (2000) LTD.
Box 319, Fairview, Alberta T0H 1L0 Ph: (780) 835-4646 Fx: (780) 835-2084

Executive Summary

1834328 Alberta Ltd. commissioned SHARP Environmental (2000) Ltd. (SHARP) to conduct remediation activities on a property in Rycroft, Alberta. The property is identified as “Site 9433” by the Tank Site Remediation Program Municipal Assessments and Grants through Alberta Municipal Affairs. This property is further defined as Lots 15-18, Block 2, Plan 3892CL within the Village of Rycroft, Alberta. The remedial activities were undertaken to ensure that the impacted soil identified during the Phase II Environmental Site Assessment (ESA) conducted by Bekevich Engineering Ltd. (report dated April 2009) meets site specific guidelines for regulatory closure, pursuant to applicable government environmental regulations.

Archival information indicates that this property was previously used as a gas station, automobile dealership, a welding/fabricating shop and an automotive repair and paint shop. Underground storage tanks (USTs) were utilized for gasoline storage when the property was used as a gas station and automobile re-fueling occurred at the onsite pump station located in the northeast corner of the property. There was no indication that diesel fuel was stored onsite.

In April 2009, Bekevich Engineering Ltd. completed a Phase 2 ESA report to determine if there were concentrations of petroleum hydrocarbons and lead above applicable criteria guidelines as part of the Alberta Municipal Affairs “Tank Site Remediation Program” as there were underground storage tanks utilized for fuel storage on this property.

As a result of the Phase 2 investigation, it was identified that there were concentrations of BTEX, F1 and F2 petroleum hydrocarbons present within the samples collected based on applicable Tier 2 (Alberta Government, 2016) criteria guidelines. Concentrations of lead reported in the sample analytical results were compared to the metal guidelines for fine-grained soil using the Residential/Parkland and Commercial Land Use values and were found to meet applicable criteria guidelines. No other parameters or areas of concerns were identified during the investigation.

Excavation of the impacted material identified to be present within the areas was initiated on July 15, 2016 and completed on October 17, 2016. Final confirmatory samples of the excavated area were collected on October 18, 2016. The onsite remedial activities were completed in stages due to the tight workspace. As the excavation progressed, the impacted material was placed on oil resistant polyethylene lined bermed cells constructed on the Subject Site for treatment using an ALLU bucket. Based on the measurements of the excavation, approximately 783m^3 of impacted material was excavated for treatment. Based on the Landfill Summary a total of 542.29 tonnes of impacted soil was hauled to Tervita Spirit River Class II Landfill for disposal.

Analytical results from closure samples obtained from the excavated area indicate that the petroleum hydrocarbon impacts identified by the Phase 2 ESA (Bekevich Engineering Ltd., 2009) have been mitigated within the excavated area as supported by the data presented in the Analytical Summary Tables. The impacted material was treated in five stages with all Treatment Pile samples (Piles 1-5) found to be within applicable Tier 2 (Alberta Government, 2016) criteria guidelines at the time of analysis. Treatment Pile 6 was unable to be properly treated and was therefore disposed of at the Tervita Spirit River Class 2 Landfill in November of 2016.

The impacted area complies with criteria established under Alberta Tier 2 Soil and Groundwater Remediation Guidelines (Alberta Government, 2016). As no other impacts of potential concern were identified, no further investigation is recommended at this time.

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1.0 INTRODUCTION

1834328 Alberta Ltd. commissioned SHARP Environmental (2000) Ltd. (SHARP) to conduct remediation activities on a property in Rycroft, Alberta. The property is identified as "Site 9433" by the Tank Site Remediation Program Municipal Assessments and Grants through Alberta Municipal Affairs. This property is further defined as Lots 15-18, Block 2, Plan 3892CL within the Village of Rycroft, Alberta. The remedial activities were undertaken to ensure that the impacted soil identified during the Phase II Environmental Site Assessment (ESA) conducted by Bekevich Engineering Ltd. (report dated April 2009) meets site specific guidelines for regulatory closure, pursuant to applicable government environmental regulations. A complete chronological outline for the assessment and remediation work conducted on the subject location is presented in Appendix 1.

This report outlines the methodologies, observations and results from the remediation work initiated and completed in 2016.

1.1 Background

Archival information indicates that Site 9433 is located within the village of Rycroft, Alberta; Lots 15-18, Block 2, Plan 3892CL. This property was previously used as a gas station, automobile dealership, a welding/fabricating shop and an automotive repair and paint shop. Underground storage tanks (USTs) were utilized for gasoline storage when the property was used as a gas station and automobile re-fueling occurred at the onsite pump station located in the northeast corner of the property. There was no indication that diesel fuel was stored onsite.

In April 2009, Bekevich Engineering Ltd. completed a Phase 2 ESA report (initial investigation was in June 2007 with further delineation completed in August 2008) to determine if there were concentrations of petroleum hydrocarbons and lead above applicable criteria guidelines as part of the Alberta Municipal Affairs "Tank Site Remediation Program" as there were underground storage tanks utilized for fuel storage on this property. The underground storage tanks were suspected to be located on the north side and to the middle of the building as noted in the report. There were a total of fifteen boreholes advanced on the property during the initial and delineation investigations with seven of these boreholes completed as water wells. Five of the seven wells were reported to be dry at the time of assessment and two had in-situ permeability tests conducted. It was determined that: "the hydraulic conductivity of the soils are less than $1x10^{-7}$ m/s, demonstrating that the Subject Property is not underlain by a domestic use aquifer and the shallow aquifer is of insufficient yield to be used for domestic purposes. As the contamination was found at a depth of 4m or less, there is an

aquiter at least 5m thick of sufficiently low hydraulic conductivity acting as a barrier to any deeper domestic use aquifer. Therefore, the domestic use aquifer, livestock watering and irrigation watering exposure pathways are eliminated" (Bekevich, 2009 Phase 2 ESA).

As a result of the Phase 2 investigation, it was identified that there were concentrations of benzene and/or ethylbenzene (TH2-07 and TH5-07) that did not meet applicable criteria guidelines. There are also elevated levels of F1 (C6-C10) and F2 (C10-C16) petroleum hydrocarbons present within the samples collected (TH2-07) based on applicable Tier 2 (Alberta Government, 2016) criteria guidelines. Concentrations of lead reported in the sample analytical results were compared to the metal guidelines for fine-grained soil using the Residential/Parkland and Commercial Land Use values and were found to meet applicable criteria guidelines. No other parameters or areas of concerns were identified during the investigation.

Prior to initiating remediation on the subject site the 2016 Tier 2 (Alberta Government) guideline values for Residential/Parkland Land Use criteria were reviewed against the Bekevich Engineering 2009 Phase 2 ESA results and it was determined that previously identified exceedances for benzene, ethylbenzene, F1 (C6-C10) and F2 (C10-C16) petroleum hydrocarbons in fine grained soils were present within the area and that no other parameters of concern were flagged under the more stringent criteria values applicable to the remediation program. Although Commercial Land Use guidelines were considered, the impacted material plume along the east side of the property extended far enough south that it crossed the 30m buffer zone required for application of the less stringent land use. A residential property located south of the Subject Property is within the 30m buffer zone, therefore Residential/Parkland Criteria guidelines were applied to the 2016 Tier 2 (Alberta Government) criteria re-assessment and the remediation program.

Excavation of the impacted material identified to be present within the areas was initiated on July 15, 2016 and completed on October 17, 2016. Final confirmatory samples of the excavated area were collected on October 18, 2016 by SHARP personnel and submitted to AGAT Laboratories for analysis (Analytical Summary Tables, Appendix 2).

The onsite remedial activities were completed in stages due to the tight workspace. As the excavation progressed, the impacted material was placed on oil resistant polyethylene lined bermed cells constructed on the Subject Site for treatment using an ALLU bucket. Based on the measurements of the excavation, approximately 783m^3 of impacted material was excavated for treatment. Based

on the Landfill Summary Table (Appendix 5) a total of 542.29 tonnes of impacted soil was hauled to Tervita Spirit River Class II Landfill for disposal.

2.0 SCOPE OF THE REMEDIAL ACTIVITIES

The scope of work outlined for the remedial activities included the following objectives and procedures:

2.1 Objectives

The objectives of the remediation work for the subject site were as follows:

- Excavate the contaminated areas and characterize the type, concentration, and extent of contaminants;
- Remediate the site conditions to acceptable government and industry environmental standards;
- Collect samples and submit to an accredited laboratory for analyses;
- Review analytical results to ensure that the remediated area complies with current Alberta Government regulations in order to obtain regulatory certification and closure of the site;
- Complete a report synthesizing all information related to all work conducted on site.

2.2 Procedures

The procedures undertaken in the course of the remediation work entail the following:

- Review archival information pertaining to the site and develop site specific procedures;
- Notify the landowner of activities scheduled to take place on his land;
- Undertake the necessary precautions needed for ground disturbance and ensure that all individuals on site follow the safety procedures in accordance to 1834328 Alberta Ltd. and SHARP Environmental (2000) Ltd. standards;

- Undertake site investigations that include professional observation, field and laboratory testing, borehole investigations and sampling.

2.3 Sampling Protocol

- Field screening methods for petroleum hydrocarbon impacts are employed to determine levels of potential impact during the excavation process. Volatile petroleum hydrocarbon impacts are field screened for the presence of volatile organic compounds (VOCs) by the headspace method.

- Confirmatory sampling is completed once field screening has indicated that potential impacts are below applicable criteria guidelines. Confirmatory samples are collected, stored, and transported to an accredited laboratory based on approved government sampling protocols. All analyses are conducted as per industry accepted practices and follow standard laboratory quality assurance/quality control (QA/QC) practices.

- SHARP Environmental (2000) Ltd. follows standard sampling procedures for sample location and spacing based on professional judgement and field screening. Discrete samples from the walls of the excavation are collected on a horizontal grid within the known zone of impact at a maximum spacing of 5m between sample points that are submitted for analysis. Discrete samples from the floor of the excavation are collected based on the surface area of the floor in a grid pattern that covers a maximum of 100m^2 per sample point submitted for analysis.

- If a treatment area is used, random sampling based on a maximum volume of 100m^3 / sample is completed. In the case of the treatment area a composite sample from each sample point is collected to determine if the material has been thoroughly treated as per the specifications of the treatment plan.

2.4 Regulatory Criteria

Regulatory guidelines were applied conservatively to the results obtained from samples collected at the subject site. The following regulatory guidelines were used for this assessment:

- Alberta Tier 2 Soil and Groundwater Remediation Guidelines (Tier 2) (Alberta Government, 2016). *Petroleum hydrocarbon constituent values*

were compared to the Tier 2 criteria guidelines as pathway elimination has been utilized for criteria development on this property. Specifically this site is considered to be commercial however as there is residential/parkland land use within the 30m buffer zone, the entire property has been compared to the residential/parkland land use guidelines. The results of the particle size analysis (PSA) indicated that the soils were classified as fine grained. Pathway elimination for the domestic use aquifer, livestock watering and irrigation watering exposure pathways were eliminated based on the Bekevich Engineering Phase 2 Assessment results (Report Dated April 2009).

- Oilfield Waste Management Requirements for the Upstream Petroleum Industry (D058) (Alberta Energy Regulator, 2015 Addendum).

3.0 BASELINE INFORMATION

3.1 Property Owner: 1834328 Alberta Ltd.

3.2 Location: Lots 15-18, Block 2, Plan 3892 Rycroft, Alberta

3.3 Applied Land Use Category: Residential/Parkland Land Use
Residential Land Use was applied due to having less than 30m buffer zone from the nearest residential property to the edge of the plume.

3.4 Actual Property Land Use: Commercial Land Use

4.0 SITE REMEDIATION, SAMPLING, and RECLAMATION

4.1 Buried Lines and Other Buried Metal Facilities

First Alert Locating Ltd. scanned the location for buried facilities on July 5, 2016. The sweep indicated that there were 3 unknown metal readings to the north and 1 unknown metal reading to the northeast corner of the building. These facilities were flagged for reference. There were buried Telus cables and unknown buried pipes located under the alleyway which were not within the vicinity of the work area. The Village of Rycroft marked the possible location of the water line and sewer line entering the property from the east side. It was noted by the owner of the property that the water line had previously ruptured and that the water to the building was shut off at the road.

4.2 On-Site Remedial Activities

Prior to the initiation of the Remedial Program contact was made with the Village of Rycroft Council to obtain permission to conduct in-situ treatment within the corporate boundaries of the community. SHARP presented the Remedial Action Plan to Village Council on May 10, 2016 and the decision to approve the action plan was made. Communication with the Public Works Foreman was required to initiate work and any use of roadways in the work area.

A chain-link fence was installed around the perimeter of the work area to reduce the potential for access from unauthorized visitors. Construction of the containment areas for storage of the impacted soil commenced on July 15, 2016. These cells were overlain with oil resistant polyethylene to ensure no leaching of water (surface runoff due to rain) onto the surrounding ground surface. During the period of remediation, heavy rainfall caused delays, extending the timeline of the remediation project. A treatment cell constructed on the southeast side of the property was utilized for treatment of piles 1-3 and a new containment cell was constructed on the north side of the property for treatment of piles 4-6.

Exploratory excavation for the underground storage tank commenced on July 15, 2016. During excavation it was identified that the tanks were not in the location noted in the previous ESAs conducted on the site, nor in the location flagged by the line locators. On July 16, 2016 the underground storage tanks were located below the foundation on the northeast corner of the building (Site Sketch, Appendix 1) and were found to contain fluid with a visible sheen. Water samples were collected and submitted for laboratory analysis (Appendix 4). The analytical results from the water samples in the tank determined that the guidelines for visible sheen, pH, flash point, petroleum hydrocarbons, halides, metals, chloride, were met for fluid disposal. Both tanks had the residual fluid removed via vac truck and were purged prior to removal on July 29, 2016. The fluid was hauled to Secure La Glace for disposal on July 29, 2016 through Secure Energy Services. The tanks were hauled to The Eco Depot scrap metal facility in Rycroft by Secure Energy Services.

The final measurements of the work area were found to be approximately 12.5m x 36.6m on the north end and 14.17m x 11m on the east side. The onsite remedial activities were completed in a staged manner due to a lack of workspace. The excavation measured from 0.8m to 3.2m in depth with an approximate total volume of 783m^3 (Site Sketch, Appendix 1). The area was excavated from July 15 to October 17, 2016 and the material was stockpiled for treatment. Berms were constructed around the north and west perimeters of the

property inside the fence to prevent surface water from the road from running into the excavation.

Confirmatory samples of the excavated area were collected from July 23, 2016 through to October 18, 2016 and submitted to AGAT Laboratories. The samples indicated that numerous areas failed to meet applicable criteria guidelines when compared to Tier 2 (Alberta Government, 2016). Further excavation and sampling was conducted until all sample points reported values within applicable criteria guidelines (Analytical Summary Table, Appendix 2). The impacted material was treated in various stages using an ALLU bucket from July 19, 2016 to September 21, 2016 as noted in the Analytical Summary Table (Appendix 3). A sample from Treatment Pile 1 failed to meet all applicable criteria guidelines; therefore the impacted material was separated from Treatment Pile 1 and combined with Treatment Pile 2 for re-treatment and sampling on August 6, 2016. All other Treatment Pile samples (Piles 1-5) were found to be within applicable criteria guidelines at the time of analysis. The treated material was used to backfill the excavation on from July 30 to September 25, 2016. Treatment Pile 6 (542.29 tonnes) was hauled to the Tervita Class 2 Landfill in Spirit River, Alberta from November 24-26, 2016 as onsite treatment of this material was not possible with the weather conditions encountered at the time of treatment (October through to November, 2016). Heavy rains and cool ($<10^{o}C$) temperatures hindered the ability of the ALLU bucket to work the soil for drying and aeriation.

4.3 Reclamation

Backfilling of the excavation area was completed from July 30 to September 21, 2016. The treated material was utilized as fill for the excavated area as sampling of the material indicated that petroleum hydrocarbons were below applicable Tier 2 (Alberta Government, 2016) criteria guidelines. The treated fill material was put back in shallow lifts and track packed to minimize settlement. Approximately 538 years of clay fill and gravel (for surface spreading) material was hauled in from a local stockpile (Analytical Results, Appendix 4) to make up for the volume of material that was hauled to the landfill. Final reclamation of the work area was initiated on November 24, 2016. Reclamation of the disturbed area on the work area was completed on November 26, 2016 with the clay fill and a lift of gravel being spread over the excavated area.

5.0 DISCUSSION of RESULTS and CONCLUSIONS

5.1 Excavation Results

The final excavation covered an area of approximately 0.0783 ha with a depth ranging from 0.8m to 3.2m. The calculated volume of material was approximately 783m^3. Initial samples obtained from the excavation were collected on July 23, 2016 by SHARP Personnel and submitted to AGAT Laboratories for analysis of petroleum hydrocarbons (Analytical Summary Tables, Appendix 2). The particle size (75 um sieve) results obtained from the site indicate that the soil was fine-grained therefore site specific Tier 2 (Alberta Government, 2016) guidelines for fine surface soil have been developed and applied to this site.

Confirmatory sampling was completed from July 23, 2016 to September 15, 2016 The analytical results obtained through the excavation process indicated that numerous sample points reported elevated concentrations of BTEX, F1, F2, and/or F3 petroleum hydrocarbons when compared to the site specific Tier 2 (Alberta Government, 2016) guidelines.

The impacted sample points were further excavated and additional samples were collected from August 17, 2016 to October 18, 2016. Based on the analytical results from the closure samples collected on October 18, 2016 it was determined that all samples are now within applicable Tier 2 (Alberta Government, 2016) criteria for petroleum hydrocarbons and no further excavation is required (Analytical Summary Table, Appendix 2)

5.2 Treatment Piles (1-5) Results

The impacted material was treated in five stages using an ALLU bucket from July 19, 2016 to September 21, 2016 as noted in the Analytical Summary Table (Appendix 3). The Treatment Pile 1 “Pile 4” sample failed to meet applicable criteria guidelines for F1 and F2 petroleum hydrocarbons in the July 30, 2016 sampling event, therefore the impacted material was separated from Treatment Pile 1 and combined with Treatment Pile 2 and re-treated from July 31 – August 5, 2016. Sampling conducted on August 6, 2016 indicated that the material was within applicable criteria guidelines. All other Treatment Pile samples (Piles 1-5) were found to be within applicable Tier 2 (Alberta Government, 2016) criteria guidelines at the time of analysis.

Treatment Pile 6 was unable to be properly treated with the ALLU bucket due to wet weather conditions at the time of remediation. Discussions were had with the property owner with regard to options for final remediation and it was determined

that disposal at an approved facility was the preferred remedial method. Class 2 Landfill sampling was conducted and approval for waste disposal obtained on November 22, 2016 under WWA #: 24011-16-0090-19. The Receipt Summary Report (Appendix 5) noted that 542.29 tonnes of impacted material was hauled to Tervita Class 2 Landfill in Spirit River, Alberta from November 24 – 26, 2016.

5.3 Conclusions

Analytical results from closure samples obtained from the excavated area indicate that the petroleum hydrocarbon impacts identified by the Phase 2 ESA (Bekevich Engineering Ltd., 2009) have been mitigated within the excavated area as supported by the data presented in the Analytical Summary Tables (Appendix 2). The impacted material was treated in five stages with all Treatment Pile samples (Piles 1-5) found to be within applicable Tier 2 (Alberta Government, 2016) criteria guidelines at the time of analysis. Treatment Pile 6 was unable to be properly treated and was therefore disposed of at the Tervita Spirit River Class 2 Landfill in November of 2016.

The impacted area complies with criteria established under Alberta Tier 2 Soil and Groundwater Remediation Guidelines (Alberta Government, 2016). As no other impacts of potential concern were identified, no further investigation is recommended at this time.

6.0 CLOSURE STATEMENT

Performance of a standardized environmental site assessment protocol is intended to reduce uncertainty regarding the potential for recognized impacts upon the environment and human health in connection with the subject site. The scope of the remedial activities and the status of scientific knowledge cannot eliminate uncertainty regarding the results and potential impacts on the environment and human health. The remediation and reclamation were performed with due diligence in accordance with the terms of reference. The time required and costs incurred in the assessment are in accordance with accepted assessment practices and regulatory criteria. No other warranty expressed or implied is made.

This report has been prepared for the exclusive use of 1834328 Alberta Ltd. for specific application to this project site. Any use, which a third party makes of this report, or any reliance or decisions based on it, are the sole responsibility of such third parties. SHARP Environmental (2000) Ltd. accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions taken, based on this report.

Respectfully submitted,

Kelsey Biegel, P.Ag.,
SHARP Environmental (2000) Ltd.

This document has been reviewed for quality assurance purposes by:

Denise Bjornson, P.Ag.
SHARP Environmental (2000) Ltd.

Jeff Biegel, P. Ag.
SHARP Environmental (2000) Ltd.

7.0 REFERENCES

http://www.abacusdatagraphics.com/

Bekevich Engineering Ltd, 2009. Phase II Environmental Site Assessment Delineation Report. Lots 15 to 18, Block 2, Plan 3892CL Rycroft, Alberta, April 2009.

Tier 2, 2016. Alberta Tier 2 Soil and Groundwater Remediation Guidelines, Government of Alberta, 2016.

Alberta Energy Regulator

Professional Declaration for Reclamation Certificate Applications

Submit one Declaration for each report

1 This Declaration is made in conjunction with an application for a reclamation certificate (the"Application") made by

1834328 Alberta Ltd. (Applicant)

for the following land(s): Rycroft Site 9433, Lots 15 to 18, Block 2, Plan 3892 (insert legal description).

2 I am a practicing professional member [Registration/member number] 1405

of the Alberta Institute of Agrologists

which is a regulated professional organization (the "Professional Organization"). I have a minimum of five years verifiable experience in remediation or reclamation relevant to the Competencies Table contained in the Competencies for Remediation and Reclamation Advisory Committee's Recommendations Report (ESRD 2006).

3 As a member of the Professional Organization, I have the ability to sign off on work required for reclamation certificate applications as defined by the Alberta Energy Regulator and am authorized by the Applicant to prepare and submit the attached report or document, (the "Professional Report") listed below.

4 To the best of my knowledge and the best of my professional ability, recognizing the standard of care expected of a reasonable professional doing this work, it is my professional opinion that all the information contained in the Professional Report is accurate and complete, and contains all the relevant information for the purposes of this Application.

5 The results reported in the Professional Report are consistent with all current and applicable Provincial policy, criteria, standards and guidelines for the remediation or reclamation.

6 The Professional Report, including all attachments, data and supplemental information, were prepared by me, or under my direct supervision, or was prepared by a third party(ies) and has been reviewed and accepted by me; and was prepared in accordance with an appropriate quality assurance/quality control system that ensured qualified personnel properly gathered and evaluated all the information contained in and underlying the Professional Reports. All the information submitted is, to the best of my knowledge, true, accurate and complete.

7 I carry, or my employer: SHARP Environmental (2000) Ltd.

(insert legal name of employer)

carries professional liability insurance (errors and omissions). This insurance will be maintained for the specified liability period, subject to insurance availability.

8 I am aware that it is an offence under section 227 of the Environmental Protection and Enhancement Act to provide false, misleading or inaccurate information and that there are significant fines for committing these offences, including the possibility of imprisonment. See below for the relevant sections.

Report Title: Remediation Report for Rycroft Site 9433, Lots 15 to 18, Block 2, Plan 3892

Date: March 10, 2017

Name: Jeff Biegel

Signature: 

Note: If you wish to sign the form with an electronic signature you are bound with the same force as though you had a fixed signature on paper.

Registration/Member number: 1405

Section 227 of the Environmental Protection and Enhancement Act

Offences s. 227 A person who

(a) knowingly provides false or misleading information pursuant to a requirement under this Act to provide information,
(b) provides false or misleading information pursuant to a requirement under this Act to provide information

is guilty of an offence.

Penalties s. 228(1) A person who commits an offence referred to in section 60, 87, 108(1), 109(1) or 227(a), (d), (f) or (h) is liable to

(a) in the case of an individual, to a fine or not more than $100 000 or to imprisonment for a period of not more than 2 years or to both fine and imprisonment, or
(b) in the case of a corporation, to a fine of not more than $1 000 000.

(2) A person who commits an offence referred to in section 61, 67, 75, 76, 79, 88, 108(2), 109(2) 110(1) or (2), 111, 112, 137, 148, 149, 155, 157, 163, 169, 170, 173, 176, 188, 191, 192, 209, 227(b), (c), (e), (g), or (i) or 251 is liable.

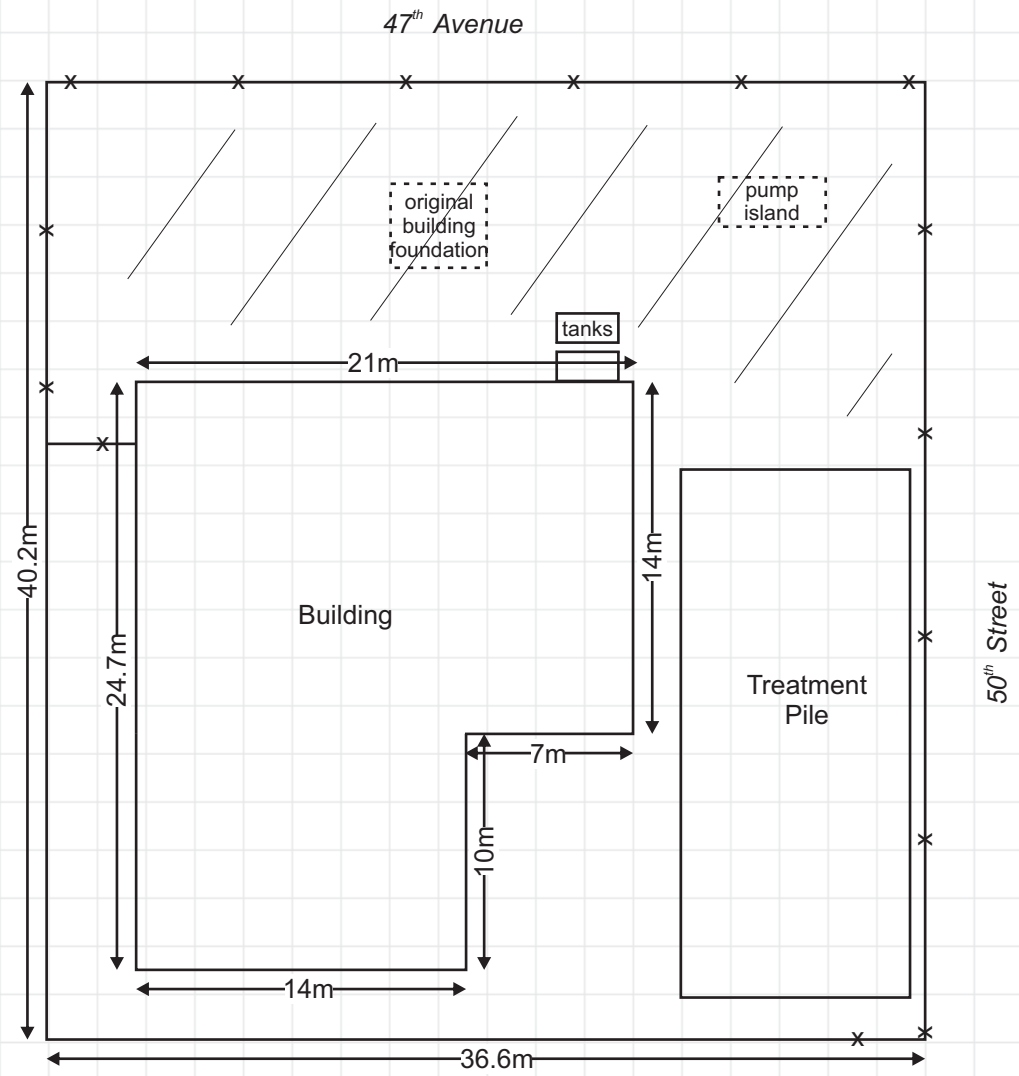
(a) in the case of an individual, to a fine or not more than $50 000, or
(b) in the case of a corporation, to a fine of not more than $500 000.

APPENDIX 1

= Suspected Impacted Area

x = Chain Link Fence

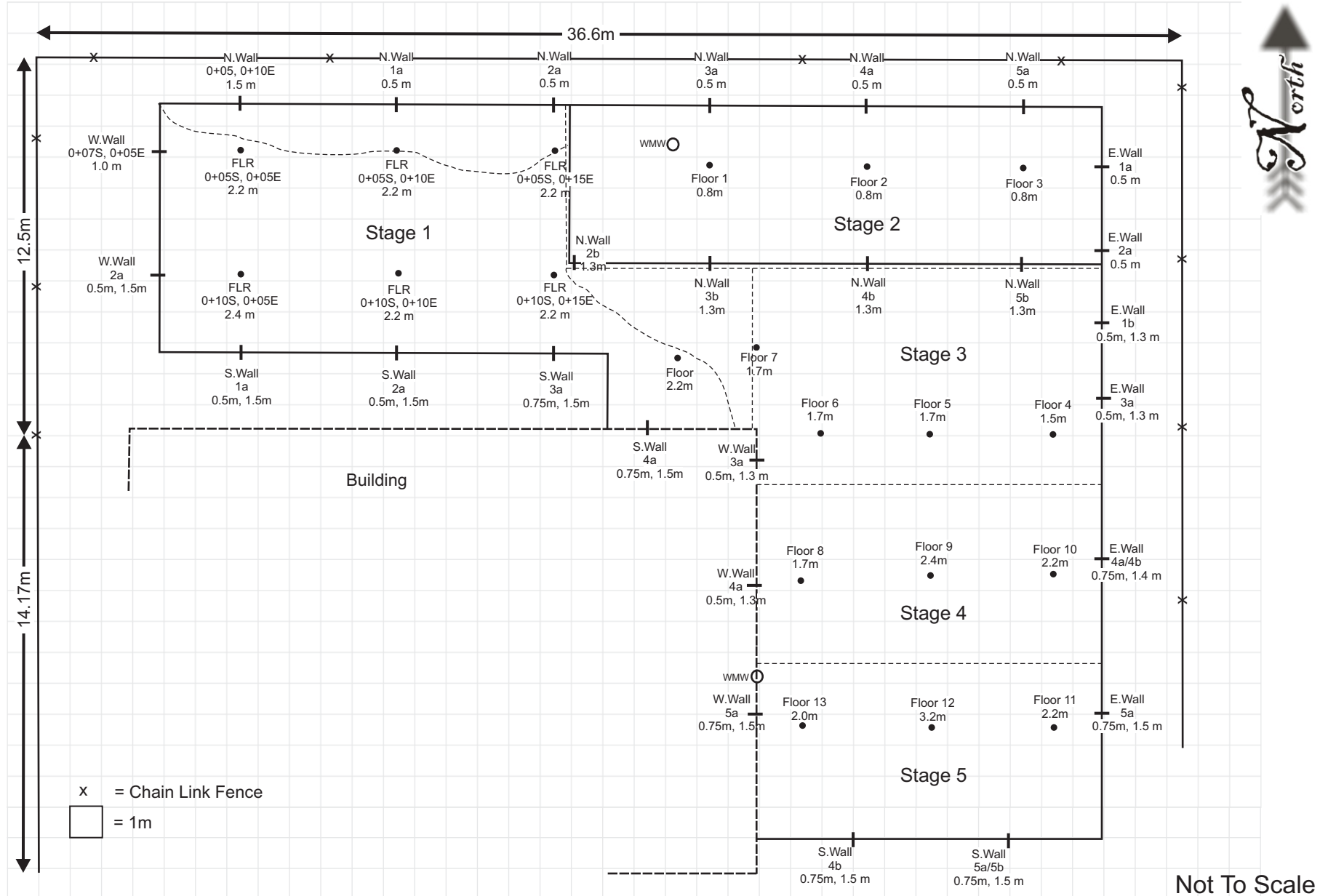
= 2m



Not To Scale

SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Rycroft Site 9433, Plan 3892CL, Lot 15-18, Block 2
Rycroft AB
Detailed Site Sketch



SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Rycroft Site 9433, Plan 3892CL, Lot 15-18, Block 2
Rycroft AB
Excavation Site Sketch
October 2016

Tank removal from the northeast corner of building

Tank removal from the northeast corner of building

SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Lot 15 to 18, Block 2, Plan 3892 CL
Rycroft, Alberta
July 2016
Site Photos

Tanks removed

Removed fuel tank

SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Lot 15 to 18, Block 2, Plan 3892 CL
Rycroft, Alberta
July 2016
Site Photos

Initial excavation of the north side of property, looking southeast

Initial excavation of the north side of property, looking west

SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Lot 15 to 18, Block 2, Plan 3892 CL
Rycroft, Alberta
August 2016
Site Photos

Initial excavation of the north side of property, looking northwest

Initial excavation of the north side of property, looking southeast

SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Lot 15 to 18, Block 2, Plan 3892 CL
Rycroft, Alberta
August 2016
Site Photos

Excavation on west side of property, looking southeast

Treatment cell constructed on the north side of the property

SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Lot 15 to 18, Block 2, Plan 3892 CL
Rycroft, Alberta
September 2016
Site Photos

Southeast edge of excavation along south boundary

SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Lot 15 to 18, Block 2, Plan 3892 CL
Rycroft, Alberta
September 2016
Site Photos

Backfilled north side of property, looking west

SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Lot 15 to 18, Block 2, Plan 3892 CL
Rycroft, Alberta
October 2016
Site Photos

Gravel spread on east side of property facing north

Gravel spread on north side of property facing east

SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Lot 15 to 18, Block 2, Plan 3892 CL
Rycroft, Alberta
November 2016
Site Photos

Clean-up along 47th avenue facing east

SHARP Environmental (2000) LTD.

1834328 Alberta Ltd.
Lot 15 to 18, Block 2, Plan 3892 CL
Rycroft, Alberta
November 2016
Site Photos

Assessment Chronology

The following is a chronological outline with respect to site investigation and remediation activities to date:

July 15, 2016
Fence installed around the perimeter of the site. Asphalt cut and hauled offsite. Exploratory excavation for tank completed. Tank not found.

July 16, 2016
Tanks located and found to be full of fluid. Collected samples of the fluid and submitted for laboratory analysis. Visible sheen was noted to be present.

July 17, 2016
Constructed containment cell for Treatment Pile 1 located at the SE end of the property and lined with oil resistant polyethylene. Began transferring impacted soil into containment cell.

July 18, 2016
Removed impacted soil west of pump island and placed into containment cell for Treatment Pile 1. Field tests indicated excavated material is impacted with hydrocarbons.

July 19, 2016
Excavated material from the area west of pump island and placed into containment cell. Berms constructed to prevent surface water from running into excavation. Allued impacted soil in containment cell.

July 22, 2016
Allued excavated material.

July 23, 2016
Sampled floor and walls of west excavation. Took onsite samples for field testing. Submitted samples for analysis. Allued excavated material.

July 24-28, 2016
Allued excavated material.

July 29, 2016
Supervised tank removal. Tanks cleaned out and fluid/sludge disposed of at Tervita Spirit River. Steamed tanks clean and removed from excavation.

July 30, 2016
Excavated wall around tank area. Piled material in containment cell. Collected closure samples of the west wall, south wall and floor under the tank.

July 31-August 5, 2016
Allued excavated material.

August 6, 2016
Sampling completed at 5 locations on Treatment Pile 2. Soil samples submitted for analysis.

August 7-8, 2016
Allued excavated material.

August 9, 2016
Excavated northeast corner of the site to 0.8m.

August 10, 2016
Sampled north and east wall in the northeast corner of the excavation. Sampled floor and secondary north wall for closure. Submitted samples for analysis.

August 11-16, 2016
Allued excavated material.

August 17, 2016
Sampled Treatment Pile 3 and re-excavated north wall. Submitted samples for analysis.

August 18, 2016
Excavated southeast side of impacted area. Backfilled and packed Treatment Pile 2 material. Samples collected from newly excavated floor. Submitted samples for analysis.

September 9, 2016
Excavated southeast side. Treatment Pile 4 placed on northwest side of site and sampled for closure. Samples obtained from floor, west wall, south wall and east wall of excavation. Samples submitted for analysis.

September 15, 2016
Treatment Pile 4 backfilled. Further excavation completed along the south and east sides to a depth of 2.5m and placed in a cell on the north side of property.

October 17, 2016
Re-sampled failed areas based on analytical results. Backfilled excavation with treated material from Treatment Pile 5.

October 18, 2016
Re-sampled failed floor points and submitted for analysis.

November 24-26, 2016
Hauled 542.29 tonnes of impacted soil to Tervita Spirit River. Hauled in an estimated 538 yards of clean fill and gravel for backfilling and surface cover.

APPENDIX 2

1834328 Alberta Ltd.

Rycroft Site 9433, Lots 15-18, Block 2, Plan 3892CL

Excavation Sampling Log

July - October 2016

North Wall Sample Log (Length: 30m)		
Sample Point Name	Distance From West Wall (m)	Distance From Surface (m)
0+05, 0+10E	2.5	1.5
1a	7.5	0.5
2a	12.5	0.5
3a	17.5	0.5
4a	22.5	0.5
5a	27.5	0.5
2b	13.0	1.3
3b	17.5	1.3
4b	22.5	1.3
5b	27.5	1.3
South Wall Sample Log (Length: 30m)		
Sample Point Name	Distance From East Wall (m)	Distance From Surface (m)
1a	27.5	0.5
1a	27.5	1.5
2a	22.5	0.5
2a	22.5	1.5
3a	17.5	0.75
3a	17.5	1.5
4a	14.5	0.75
4a	14.5	1.5
4b	8.0	0.75
4b	8.0	1.5
5a/5b	3.0	0.75
5a/5b	3.0	1.5
West Wall Sample Log (Length: 24m)		
Sample Point Name	Distance From South Wall (m)	Distance From Surface (m)
0+07S, 0+05E	6.5	1.0
2a	2.5	0.5
2a	2.5	1.5
3a	12.0	0.5
3a	12.0	1.3
4a	8.0	0.5
4a	8.0	1.3
5a	4.0	0.75
5a	4.0	1.5

1834328 Alberta Ltd.

Rycroft Site 9433, Lots 15-18, Block 2, Plan 3892CL

Excavation Sampling Log

July - October 2016

East Wall Sample Log (Length: 24m)

Sample Point Name	Distance From North Wall (m)	Distance From Surface (m)
1a	2.0	0.5
2a	4.5	0.5
1b	7.0	0.5
1b	7.0	1.3
3a	9.5	0.5
3a	9.5	1.3
4a/4b	14.5	0.75
4a/4b	14.5	1.4
5a	19.5	0.75
5a	19.5	1.5

1834328 Alberta Ltd.
Rycroft Site 9433, Lots 15-18, Block 2, Plan 3892CL
Excavation Sampling Log
July - October 2016

Floor Sample Log

Sample Point Name	Distance From West Wall (m)	Distance From North Wall (m)	Distance From Surface (m)
FLR 0+05S,0+05E	2.5	1.5	2.2
FLR 0+05S,0+10E	7.5	1.5	2.2
FLR 0+05S,0+15E	12.5	1.5	2.2
FLR 0+10S,0+05E	2.5	5.5	2.4
FLR 0+10S,0+010E	7.5	5.5	2.2
FLR 0+10S,0+015E	12.5	5.5	2.2
Floor	16.5	8.0	2.2
Floor 1	17.5	2.0	0.8
Floor 2	22.5	2.0	0.8
Floor 3	27.5	2.0	0.8
Floor 4	9.5	10.5	1.5
Floor 5	5.5	10.5	1.7
Floor 6	2.0	10.5	1.7
Floor 7	19.0	8.0	1.7
Floor 8	1.5	15.0	1.7
Floor 9	5.5	15.0	2.4
Floor 10	9.5	15.0	2.2
Floor 11	1.5	20.0	2.2
Floor 12	5.5	20.0	3.2
Floor 13	9.5	20.0	2.0

PETROLEUM HYDROCARBON GUIDELINES FOR RESIDENTIAL / PARKLAND AND COMMERCIAL LAND USE - EXCAVATION

Company: 1834328 Alberta Ltd.

Location: Rycroft Site 9433, Lots 15-18, Block 2, Plan 3892CL, Rycroft, Alberta

Sample Location	Depth (m)	Distance from Well Casing	Particle Size (75 µm sieve)	Sample Date	Benzene	Toluene	Ethylbenzene	Xylenes	F1 (C6-C10)	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
AGAT WORK ORDER: 16G149912												
Floor 9	2.4	>5m	fine	18-Oct-16	0.496	<0.05	0.17	<0.05	32	10	82	47
Floor12	3.2	>5m	fine	18-Oct-16	<0.005	<0.05	<0.01	<0.05	<10	<10	64	36
AGAT WORK ORDER: 16G149250												
Floor 9	2.2	>5m	fine	17-Oct-16	1.930	0.05	0.220	0.190	25	<10	39	15
Floor 10	2.2	>5m	fine	17-Oct-16	0.392	<0.05	0.020	<0.05	<10	<10	14	<10
Floor 12	3.0	>5m	fine	17-Oct-16	2.780	0.11	0.970	0.480	25	<10	15	<10
E Wall 4b	1.4	>5m	fine	17-Oct-16	0.008	<0.05	<0.01	<0.05	<10	<10	31	12
AGAT WORK ORDER: 16G143534												
Floor 9	2.0	>5m	fine	29-Sep-16	8.770	0.27	6.490	7.780	202	38	76	38
Floor 10	2.0	>5m	fine	29-Sep-16	2.450	0.29	2.410	0.510	303	32	42	22
Floor 12	2.6	>5m	fine	29-Sep-16	2.570	0.13	1.760	0.060	150	35	69	40
E Wall 4b	0.75	>5m	fine	29-Sep-16	1.360	0.39	2.090	2.170	98	16	23	17
E Wall 4b	1.4	>5m	fine	29-Sep-16	4.480	<0.05	0.410	0.160	73	<10	59	41
S Wall 5b	0.75	>5m	fine	29-Sep-16	1.010	0.07	0.030	0.510	<10	<10	15	<10
S Wall 5b	1.5	>5m	fine	29-Sep-16	0.386	<0.05	<0.01	<0.05	<10	<10	20	15
AGAT WORK ORDER: 16G138235												
S Wall 5a	0.75	>5m	fine	15-Sep-16	3.350	19.6	12.5	47.8	1090	155	65	50
S Wall 5a	1.5	>5m	fine	15-Sep-16	1.300	0.77	5.42	1.45	570	53	96	66
E Wall 4a	0.75	>5m	fine	15-Sep-16	1.560	7.13	4.03	18.6	365	88	<10	<10
E Wall 4a	1.4	>5m	fine	15-Sep-16	5.920	0.34	2.38	0.21	193	<10	53	42
E Wall 5a	0.75	>5m	fine	15-Sep-16	0.010	<0.05	0.01	<0.05	<10	<10	98	66
E Wall 5a	1.5	>5m	fine	15-Sep-16	0.846	0.06	0.22	0.43	37	<10	36	24
W Wall 5a	0.75	>5m	fine	15-Sep-16	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	<10
W Wall 5a	1.5	>5m	fine	15-Sep-16	<0.005	<0.05	<0.01	<0.05	<10	<10	14	11
Floor 11	2.2	>5m	fine	15-Sep-16	0.332	<0.05	<0.01	<0.05	<10	<10	62	40
Floor 12	2.4	>5m	fine	15-Sep-16	2.790	0.07	0.86	0.86	79	<10	22	14
Floor 13	2.0	>5m	fine	15-Sep-16	0.489	<0.05	<0.01	<0.05	<10	<10	39	19
S Wall 4b	0.75	>5m	fine	15-Sep-16	<0.005	<0.05	0.030	<0.05	106	61	41	24
S Wall 4b	1.5	>5m	fine	15-Sep-16	<0.005	<0.05	<0.01	<0.05	<10	<10	25	20
AGAT WORK ORDER: 16G136182												
Floor 5	1.7	>5m	fine	9-Sep-16	0.025	<0.05	0.05	<0.05	72	<10	22	18
Floor 6	1.7	>5m	fine	9-Sep-16	0.438	<0.05	1.05	<0.05	94	22	30	22

Floor 7	1.7	>5m	fine	9-Sep-16	0.019	<0.05	<0.01	<0.05	<10	<10	48	32
Floor 8	1.7	>5m	fine	9-Sep-16	<0.005	<0.05	<0.01	<0.05	<10	<10	16	12
Floor 9	1.7	>5m	fine	9-Sep-16	2.530	0.10	0.38	<0.05	71	<10	28	19
Floor 10	1.7	>5m	fine	9-Sep-16	5.290	0.32	0.21	0.13	94	<10	24	14
E Wall 1b	0.5	>5m	fine	9-Sep-16	0.039	<0.05	<0.01	<0.05	<10	<10	51	58
E Wall 3a	0.5	>5m	fine	9-Sep-16	0.301	<0.05	0.05	<0.05	30	13	27	25
E Wall 3a	1.3	>5m	fine	9-Sep-16	0.858	<0.05	0.24	<0.05	67	15	34	28
W Wall 3a	0.5	>5m	fine	9-Sep-16	0.014	<0.05	0.01	<0.05	<10	15	116	110
W Wall 3a	1.3	>5m	fine	9-Sep-16	0.610	0.18	0.47	0.32	69	20	50	44
W Wall 5a	0.5	>5m	fine	9-Sep-16	0.008	<0.05	0.18	0.30	68	23	13	<10
W Wall 5a	1.3	>5m	fine	9-Sep-16	0.013	<0.05	<0.01	<0.05	<10	<10	51	40
W Wall 4a	0.5	>5m	fine	9-Sep-16	0.068	<0.05	0.04	<0.05	13	<10	13	<10
W Wall 4a	1.3	>5m	fine	9-Sep-16	<0.005	<0.05	<0.01	<0.05	12	<10	88	71
AGAT WORK ORDER:16G128139												
Floor 4	1.5	>5m	fine	18-Aug-16	0.129	<0.05	0.27	<0.05	92	19	46	32
Floor 5	1.5	>5m	fine	18-Aug-16	0.954	<0.05	1.67	<0.05	267	62	58	42
Floor 6	1.5	>5m	fine	18-Aug-16	5.97	0.32	1.14	0.48	141	<10	68	55
Floor 7	1.5	>5m	fine	18-Aug-16	2.02	0.11	2.16	0.11	327	51	23	17
AGAT WORK ORDER: 16G127368												
N Wall 3a	0.5	>5m	fine	17-Aug-16	<0.005	<0.05	0.010	<0.05	<10	60	790	580
N Wall 3b	1.3	>5m	fine	17-Aug-16	0.076	<0.05	<0.01	<0.05	<10	<10	28	33
AGAT WORK ORDER: 16G125001												
N Wall 2b	1.3	>5m	fine	10-Aug-16	0.035	<0.05	<0.01	<0.05	<10	<10	21	11
N Wall 3b	1.3	>5m	fine	10-Aug-16	3.1	<0.05	0.130	<0.05	36	<10	32	17
N Wall 4b	1.3	>5m	fine	10-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	<10	48	21
N Wall 5b	1.3	>5m	fine	10-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	<10	39	21
E Wall 1b	1.3	>5m	fine	10-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	<10	13	<10
N Wall 1a	0.5	>5m	fine	10-Aug-16	0.028	<0.05	0.040	0.390	111	20	942	409
N Wall 2a	0.5	>5m	fine	10-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	<10	16	<10
N Wall 3a	0.5	>5m	fine	10-Aug-16	<0.005	<0.05	<0.01	<0.05	17	88	3380	1590
N Wall 4a	0.5	>5m	fine	10-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	<10
N Wall 5a	0.5	>5m	fine	10-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	<10	24	13
E Wall 1a	0.5	>5m	fine	10-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	<10	29	16
E Wall 2a	0.5	>5m	fine	10-Aug-16	0.008	<0.05	<0.01	<0.05	<10	<10	<10	<10
Floor 1	0.8	>5m	fine	10-Aug-16	0.006	<0.05	<0.01	<0.05	<10	<10	11	<10
Floor 2	0.8	>5m	fine	10-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	<10	13	<10
Floor3	0.8	>5m	fine	10-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	<10	25	13
AGAT WORK ORDER: 16G121799												
W Wall 2a	0.5	>5m	fine	July 30, 2016	<0.005	<0.05	<0.01	0.12	<10	<10	214	136
W Wall 2a	1.5	>5m	fine	July 30, 2016	<0.005	<0.05	<0.01	<0.05	<10	12	53	24
S Wall 1a	0.5	>5m	fine	July 30, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	41	28

S Wall 1a	1.5	>5m	fine	July 30, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	17	11
S Wall 2a	0.5	>5m	fine	July 30, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	22	13
S Wall 2a	1.5	>5m	fine	July 30, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	27	16
S Wall 3a	0.75	>5m	fine	July 30, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	13	<10
S Wall 3a	1.5	>5m	fine	July 30, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	<10
S Wall 4a	0.75	>5m	fine	July 30, 2016	0.093	<0.05	0.51	<0.05	18	12	<10	<10
S Wall 4a	1.5	>5m	fine	July 30, 2016	0.517	<0.05	0.02	<0.05	<10	<10	14	<10
Floor	2.2	>5m	fine	July 30, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	66	33
AGAT WORK ORDER: 16G119125												
0+05S, 0+05E FLR	2.2	>5m	fine	July 23, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	39	23
0+10S, 0+05E FLR	2.4	>5m	fine	July 23, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	27	13
0+10S, 0+10E FLR	2.2	>5m	fine	July 23, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	45	21
0+05S, 0+10E, FLR	2.2	>5m	fine	July 23, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	<10
0+05S, 0+15E FLR	2.2	>5m	fine	July 23, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	19	11
0+10S, 0+15E FLR	2.2	>5m	fine	July 23, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	25	12
0+05S, 0+10E N Wall	1.5	>5m	fine	July 23, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	27	17
0+07S, 0+05E W Wall	1.0	>5m	fine	July 23, 2016	<0.005	<0.05	<0.01	<0.05	<10	<10	11	<10

Alberta Tier 2 Soil and Groundwater Remediation Guidelines, Government of Alberta, 2016

Residential/Parkland Land Use

Fine Surface soil <3.0 m Depth			1.6*	110**	120**	65**	210**	150**	1300**	5600**
Fine Subsoil >3.0 m Depth			1.6*	220**	240**	130**	420**	300**	2600**	10000^

Commercial Land Use

Fine Surface soil <3.0 m Depth			11*	330**	430**	230**	320**	260**	2500**	6600**
Fine Subsoil >3.0 m Depth			11*	660**	860**	460**	640**	520**	4300***	10000^

Surface Soil Criteria applies to a depth of 3.0m

Notes:

NS - Not Specified

- Indicates Red Flag Issue Identified (Value Exceeds Applicable Criteria)

- Indicates Sample Point was Excavated and Re-Sampled

* Human Exposure Pathway - Vapour Inhalation - Slab

** Ecological Pathway - Direct Soil Contact

*** Ecological Pathway - Off-site Migration

^ Management Limit

AGAT Laboratories

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CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G119125

TRACE ORGANICS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

DATE REPORTED: Jul 29, 2016

PAGES (INCLUDING COVER): 6

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*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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Certificate of Analysis

AGAT WORK ORDER: 16G119125

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-07-23

DATE REPORTED: 2016-07-29

				0+05S,0+05E	0+010S,0+05E	0+10S,0+10E	0+05S,0+10E	0+05S,0+15E	0+10S,0+15E	0+05S,0+10E	0+07S,0+05E
SAMPLE DESCRIPTION:				FLR 2.2m	FLR 2.4m	FLR 2.2m	FLR 2.2m	FLR 2.2m	FLR 2.2m	N.WALL 1.5m	W.WALL 1.0m
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				7/23/2016	7/23/2016	7/23/2016	7/23/2016	7/23/2016	7/23/2016	7/23/2016	7/23/2016
Parameter	Unit	G / S	RDL	7728462	7728463	7728464	7728465	7728466	7728467	7728468	7728469
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	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	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	150	10	<10	<10	<10	<10	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	1300	10	39	27	45	<10	19	25	27	11
C34 - C50 (F4)	mg/kg	5600	10	23	13	21	<10	11	12	17	<10
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		N/A	19	23	21	22	22	23	23	21
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	50-150		103	104	103	103	103	103	104	104
Ethylbenzene-d10 (BTEX)	%	50-150		105	102	100	102	103	98	103	104
o-Terphenyl (F2-F4)	%	50-150		117	119	112	105	114	118	118	119

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7728462-7728469 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.

Certified By: Maureen Beattie

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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G119125

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jul 29, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	485	8462	< 0.005	< 0.005	NA	< 0.005	105%	80%	120%	90%	60%	140%	94%	60%	140%
Toluene	485	8462	< 0.05	< 0.05	NA	< 0.05	110%	80%	120%	93%	60%	140%	98%	60%	140%
Ethylbenzene	485	8462	< 0.01	< 0.01	NA	< 0.01	111%	80%	120%	89%	60%	140%	94%	60%	140%
Xylenes	485	8462	< 0.05	< 0.05	NA	< 0.05	112%	80%	120%	92%	60%	140%	97%	60%	140%
C6 - C10 (F1)	485	8462	< 10	< 10	NA	< 10	105%	70%	130%	87%	60%	140%	93%	60%	140%
C10 - C16 (F2)	2695	8468	< 10	< 10	NA	< 10	98%	80%	120%	94%	60%	140%	102%	60%	140%
C16 - C34 (F3)	2695	8468	21	27	NA	< 10	102%	80%	120%	97%	60%	140%	103%	60%	140%
C34 - C50 (F4)	2695	8468	15	17	NA	< 10	101%	80%	120%	98%	60%	140%	104%	60%	140%

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.

Certified By: Maureen Beattie

AGAT Laboratories

10203B 123 STREET
GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G119125

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
P: 403.735.2005 • F: 403.735.2771
webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature:
AGAT Job Number: 166119125
Date and Time: '16 JUL 23 15:24

Report Information
Company: SHARP ENVIRONM
Contact: DENISE BJORNSON
Address: BOX 319
FAIRVIEW, ALTA
Phone: 780-835-4646 Fax:
LSD: 2
Client Project #: PEACE RIVER 9433

Report Information
1. Name: DENISE BJORNSON
Email: dbjornson@sharpenv.com
2. Name: ERWIN STROME
Email: estrome@telusnet
3. Name:
Email:

Report Format
☐ Single Sample per Page
☐ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☐ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required:
RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To Same Yes / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*
☐ 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 ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

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 ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
462	0+05S, 0+05E FAR 2.2m	SOIL	07/22/16	JAR	1		✓											
463	0+10S, 0+05E, Far 2.4m				1		✓											
464	0+10S, 0+10E, Far 2.2m				1		✓											
465	0+05S, 0+10E Far 2.2m				1		✓											
466	0+05S, 0+15E, Far 2.2m				1		✓											
467	0+10S, 0+15E, Far 2.2m				1		✓											
468	0+05S 0+10E N.WALL 1.5m				1		✓											
469	0+07S, 0+05E, W. WALL 1m	SOIL	07/22/16	JAR	1		✓											

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
ERWIN STROME	07/22/16 15:25		23 July 16
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 _____ of _____
N°: AB 033576

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Sharp FV

Courier: _____ 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: _____

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 30-July-16

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) 18 + 18 + 19 = 18 °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: 1664119125

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)

Date issued: October 05, 2015
Document ID: SR-9505.003

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G121799

TRACE ORGANICS REVIEWED BY: Erlina Erlina, Technical Reviewer

DATE REPORTED: Aug 05, 2016

PAGES (INCLUDING COVER): 8

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*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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Certificate of Analysis

AGAT WORK ORDER: 16G121799

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-07-30

DATE REPORTED: 2016-08-05

SAMPLE DESCRIPTION:				WWall 2a 0.5m	WWall 2a 1.5m	SWall 1a 0.5m	SWall 1a 1.5m	SWall 2a 0.5m	SWall 2a 1.5m	SWall 3a 0.75m	SWall 3a 1.5m
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016
Parameter	Unit	G / S	RDL	7744394	7744396	7744397	7744398	7744399	7744400	7744401	7744402
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	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	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	150	10	<10	12	<10	<10	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	1300	10	214	53	41	17	22	27	13	<10
C34 - C50 (F4)	mg/kg	5600	10	136	24	28	11	13	16	<10	<10
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		N/A	23	19	25	27	26	20	24	20
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	50-150		107	106	107	106	105	106	106	106
Ethylbenzene-d10 (BTEX)	%	50-150		107	100	110	114	106	118	117	114
o-Terphenyl (F2-F4)	%	50-150		112	109	107	105	109	110	109	107

Certified By: Evelina

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FAX (780)402-2078
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 16G121799

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-07-30

DATE REPORTED: 2016-08-05

SAMPLE DESCRIPTION:				SWall 4a 0.75m	SWall 4a 1.5m	Floor 2.2 m	Pile 1	Pile 2	Pile 3	Pile 4
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016
Parameter	Unit	G / S	RDL	7744403	7744404	7744405	7744406	7744407	7744408	7744409
Benzene	mg/kg		0.005	0.093	0.517	<0.005	<0.005	<0.005	0.005	0.016
Toluene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12
Ethylbenzene	mg/kg		0.01	0.51	0.02	<0.01	<0.01	<0.01	<0.01	1.08
Xylenes	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	13.7
C6 - C10 (F1)	mg/kg	210	10	18	<10	<10	<10	<10	48	508
C6 - C10 (F1 minus BTEX)	mg/kg		10	18	<10	<10	<10	<10	48	493
C10 - C16 (F2)	mg/kg	150	10	12	<10	<10	75	52	56	154
C16 - C34 (F3)	mg/kg	1300	10	<10	14	66	662	540	725	766
C34 - C50 (F4)	mg/kg	5600	10	<10	<10	33	416	330	431	479
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	1910	NA	1910	1480
Moisture Content	%		N/A	23	21	24	16	16	16	19
Surrogate	Unit	Acceptable Limits								
Toluene-d8 (BTEX)	%	50-150		107	105	107	107	106	106	108
Ethylbenzene-d10 (BTEX)	%	50-150		105	101	109	105	102	100	117
o-Terphenyl (F2-F4)	%	50-150		107	104	108	105	103	104	107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7744394-7744409 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.

Certified By: Evelina

AGAT Laboratories

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CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G121799

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Aug 05, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	491	7744394	< 0.005	< 0.005	NA	< 0.005	104%	80%	120%	81%	60%	140%	94%	60%	140%
Toluene	491	7744394	< 0.05	< 0.05	NA	< 0.05	114%	80%	120%	86%	60%	140%	100%	60%	140%
Ethylbenzene	491	7744394	< 0.01	< 0.01	NA	< 0.01	118%	80%	120%	82%	60%	140%	96%	60%	140%
Xylenes	491	7744394	0.12	0.09	NA	< 0.05	118%	80%	120%	87%	60%	140%	98%	60%	140%
C6 - C10 (F1)	491	7744394	< 10	< 10	NA	< 10	103%	70%	130%	77%	60%	140%	84%	60%	140%
C10 - C16 (F2)	2971	7744394	< 10	< 10	NA	< 10	95%	80%	120%	122%	60%	140%	123%	60%	140%
C16 - C34 (F3)	2971	7744394	214	209	2.4%	< 10	97%	80%	120%	124%	60%	140%	127%	60%	140%
C34 - C50 (F4)	2971	7744394	125	136	8.4%	< 10	98%	80%	120%	120%	60%	140%	121%	60%	140%

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.

Certified By: Erlina

AGAT Laboratories

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GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
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Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G121799

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
P: 403.735.2005 • F: 403.735.2771
webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature:
AGAT Job Number: 16g121799
Date and Time:

Report Information
Company: SHARP Env (2000) Ltd.
Contact: Denise Bjornson
Address: Box 319 Fairview
Phone: 7808340111 Fax:
LSD: Rycroft Site 9433
Client Project #:

Report Information
1. Name: Denise Bjornson
Email: Dbjornson@sharp2000.com
2. Name:
Email:
3. Name:
Email:

Report Format
☐ Single Sample per Page
☒ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☒ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required:
RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To Same? Yes / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*
☐ CCME: ☐ Agricultural ☐ Industrial ☐ Residential/Park ☐ Commercial ☐ Drinking Water ☐ FWAL
☐ AB Tier 1: ☐ Agricultural ☐ Industrial ☐ Residential/Park ☒ Commercial ☐ Natural Area
☐ AB Surface Water
☐ BC CSR: ☐ AW ☐ IW ☐ LW ☐ DW
☐ Other: ☐ D50 (Drilling) ☐ SPIGEC

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 ☐ HWS-B ☐ Cr^6 ☐ Hg	Water Metals ☐ Dissolved ☐ Total ☐ Hg ☐ Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	'16 JUL 30 13:37	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
394	W Wall 2a 0.5m	Soil	July 30/16	Jar	1		✓												N
396	" 1.5m						✓												
397	S wall 1a 0.5m						✓												
398	" 1.5m						✓												
399	S wall 2a 0.75m						✓												
400	" 1.5m						✓												
401	S wall 3a 0.75m						✓												
402	" 1.5m						✓												
403	S wall 4a 0.75m						✓												
404	" 1.5m						✓												
405	Floor 2.2m						✓												Y

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Denise Bjornson	July 30/16 1:30	Amanda Cruickshank	1:37pm

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 2

N°: AB 033634

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories
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webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature: _____
AGAT Job Number: _____
Date and Time: _____

Report Information
Company: SHARP
Contact: _____
Address: _____
Phone: _____ Fax: _____
LSD: Rycroft Site 9433
Client Project #: _____

Report Information
1. Name: Denise Bjornson.
Email: _____
2. Name: _____
Email: _____
3. Name: _____
Email: _____

Report Format
☐ Single Sample per Page
☒ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☒ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required: _____

RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. *SEE BACK FOR SURCHARGE.*

Invoice To Same Yes / No
Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/AFE#: _____

Requirements *(Selection may impact detection limits)*
☐ 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 ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

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 ☐ HWS-B ☐ Cr^6 ☐ Hg	Water Metals ☐ Dissolved ☐ Total ☐ Hg ☐ Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	1,3 - dimethylbenzene	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
406	Pile 1	Soil	July 30/16	Jar	1		✓												N
407	Pile 2	↓	↓	↓	↓		✓												↓
408	Pile 3						✓												
409	Pile 4						✓												↓

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Denise Bjornson	July 30/16; 1:30	Amanda Cruickshank	1:37 pm
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 2 of 2

N°: AB 033635

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: SHARP ENV

Courier: _____ Prepaid Collect

Waybill#_____

Branch: EDM (CP) 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: _____

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 6-AUG-16

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)22+21+22=22 °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: 16G121799

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)

Date issued: October 05, 2015
Document ID: SR-9505.003

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433 Remediation Project

AGAT WORK ORDER: 16G125001

TRACE ORGANICS REVIEWED BY: Natasha Arsenault, Project Manager, Environmental

DATE REPORTED: Aug 12, 2016

PAGES (INCLUDING COVER): 8

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*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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Certificate of Analysis

AGAT WORK ORDER: 16G125001

PROJECT: Rycroft Site 9433 Remediation Project

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-08-10

DATE REPORTED: 2016-08-12

				N. Wall 2B @	N. Wall 3B @	N. Wall 4B @	N. Wall 5B @	E. Wall 1B @	N. Wall 1A @	N. Wall 2A @	N. Wall 3A @
SAMPLE DESCRIPTION:				1.3m	1.3m	1.3m	1.3m	1.3m	50cm	50cm	50cm
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				8/10/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016
Parameter	Unit	G / S	RDL	7762726	7762728	7762729	7762730	7762731	7762732	7762733	7762734
Benzene	mg/kg		0.005	0.035	3.10	0.005	<0.005	<0.005	0.028	<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	0.13	<0.01	<0.01	<0.01	0.04	<0.01	<0.01
Xylenes	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.39	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	10	<10	36	<10	<10	<10	111	<10	17
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	33	<10	<10	<10	111	<10	17
C10 - C16 (F2)	mg/kg	150	10	<10	<10	<10	<10	<10	20	<10	88
C16 - C34 (F3)	mg/kg	1300	10	21	32	48	39	13	942	16	3380
C34 - C50 (F4)	mg/kg	5600	10	11	17	21	21	<10	409	<10	1590
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		N/A	23	23	23	21	25	19	20	20
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	50-150		102	101	102	102	102	101	103	102
Ethylbenzene-d10 (BTEX)	%	50-150		125	124	124	119	122	123	129	129
o-Terphenyl (F2-F4)	%	50-150		109	115	113	113	112	109	116	108

Certified By: Natasha Ausenault

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 16G125001

PROJECT: Rycroft Site 9433 Remediation Project

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-08-10

DATE REPORTED: 2016-08-12

SAMPLE DESCRIPTION:				N. Wall 4A @ 50cm	N. Wall 5A @ 50cm	E. Wall 1A @ 50cm	E. Wall 2A @ 50cm	Floor 1 @ 0.8cm	Floor 2 @ 0.8cm	Floor 3 @ 0.8cm
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				8/10/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016
Parameter	Unit	G / S	RDL	7762736	7762737	7762744	7762747	7762748	7762750	7762751
Benzene	mg/kg		0.005	<0.005	<0.005	<0.005	0.008	0.006	<0.005	<0.005
Toluene	mg/kg		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
Xylenes	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	10	<10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	150	10	<10	<10	<10	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	1300	10	<10	24	29	<10	11	13	25
C34 - C50 (F4)	mg/kg	5600	10	<10	13	16	<10	<10	<10	13
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		N/A	21	21	22	19	21	20	24
Surrogate	Unit	Acceptable Limits								
Toluene-d8 (BTEX)	%	50-150		103	101	103	102	102	102	100
Ethylbenzene-d10 (BTEX)	%	50-150		127	125	136	124	128	128	114
o-Terphenyl (F2-F4)	%	50-150		114	114	112	116	115	117	117

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7762726-7762751 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.

Certified By: Natasha Ausenault

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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G125001

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Aug 12, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	499	2726	< 0.005	< 0.005	NA	< 0.005	105%	80%	120%	99%	60%	140%	91%	60%	140%
Toluene	499	2726	< 0.05	< 0.05	NA	< 0.05	104%	80%	120%	103%	60%	140%	106%	60%	140%
Ethylbenzene	499	2726	< 0.01	< 0.01	NA	< 0.01	106%	80%	120%	96%	60%	140%	98%	60%	140%
Xylenes	499	2726	< 0.05	< 0.05	NA	< 0.05	104%	80%	120%	108%	60%	140%	111%	60%	140%
C6 - C10 (F1)	499	2726	< 10	< 10	NA	< 10	88%	70%	130%	70%	60%	140%	80%	60%	140%
C10 - C16 (F2)	2978	7762726	< 10	< 10	NA	< 10	99%	80%	120%	110%	60%	140%	114%	60%	140%
C16 - C34 (F3)	2978	7762726	< 10	21	NA	< 10	100%	80%	120%	116%	60%	140%	121%	60%	140%
C34 - C50 (F4)	2978	7762726	< 10	11	NA	< 10	97%	80%	120%	112%	60%	140%	113%	60%	140%

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.

Certified By: Natasha Ausenault

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Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G125001

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
P: 403.735.2005 • F: 403.735.2771
webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature: 21°C
AGAT Job Number: 16-125001
Date and Time: '16 AUG 10 13:03

Report Information
Company: SHARP Env (2000) Ltd
Contact: Denise Bjornson
Address: Box 319
Fairview AB T0H 1L0
Phone: 780 8340111 Fax:
LSD: Rycroft Site 9433
Client Project #: Quoted.

Report Information
1. Name: Denise Bjornson
Email: dbjornson@sharp2000.com
2. Name:
Email:
3. Name:
Email:

Report Format
☐ Single Sample per Page
☒ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☐ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☒ 48 to 72 hours
Date Required:
RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To Same (Yes) / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*
☐ 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 ☐ AB Surface Water
☐ Other ☐ D50 (Drilling) ☐ SPIGEC

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 ☐ HWS-B ☐ Cr^6 ☐ Hg	Water Metals ☐ Dissolved ☐ Total ☐ Hg ☐ Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
2726	N Wall 2B 1.3m	Soil	Aug 9/16	Jar	1		✓											
2728	3B 1.3m						✓											
2729	4B 1.3m						✓											
2730	5B 1.3m						✓											
2731	E Wall 1B 1.3m						✓											
2732	N Wall 1A 50cm						✓											
2733	2A 50cm						✓											
2734	3A 50cm						✓											
2736	4A 50cm						✓											
2737	5A 50cm						✓											
2741	E Wall 1A 50cm				↓		✓											

Samples Relinquished By (Print Name and Sign)	Date/Time	Samples Received By (Print Name and Sign)	Date/Time
Denise Bjornson	Aug 10/16 11:30		Aug 10/16
		Corey Cole Corey Cole	Aug. 10/16

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 2
N°: AB 077315

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

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webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature: _____
AGAT Job Number: _____
Date and Time:

Report Information
Company: SHARP Env (2000) Ltd
Contact: Denise Bjornson
Address:
Phone: _____ Fax: _____
LSD: Rycroft Site 9433
Client Project #: Quoted

Report Information
1. Name: Denise Bjornson
Email: dbjornson@sharp2000.com
2. Name:
Email:
3. Name:
Email:

Report Format
☐ Single Sample per Page
☒ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☐ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☒ 48 to 72 hours
Date Required: _____
RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To Same Yes / No
Company:
Contact:
Address:
Phone: _____ Fax: _____
PO/AFE#:

Requirements *(Selection may impact detection limits)*
☐ 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 ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

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 ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
2747	E Wall 2A 50cm	Soil	Aug 10/16	Jar	1		✓											N
2748	Floor 1 0.8cm	↓	↓	↓	↓		✓											↓
2750	Floor 2 0.8cm						✓											
2751	Floor 3 0.8cm						✓											
	~~Floor 4~~																	

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Denise Bjornson	Aug 10/16 11:30		Aug 10/16 11:3[illegible]
		Corey Cuel	Aug.10/16

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

Page 1 of 1
N°: AB 077316

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Shore FV

Courier: N/A Prepaid Collect

Waybill# N/A

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 Aug 17/16 (BTEX/F1)

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) 21 + 21 + 21 = 21 °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: 1667001

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)

AGAT Laboratories

10203B 123 STREET
GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G127368

TRACE ORGANICS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

DATE REPORTED: Aug 20, 2016

PAGES (INCLUDING COVER): 6

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*NOTES

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

AGAT Laboratories

10203B 123 STREET
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CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
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Certificate of Analysis

AGAT WORK ORDER: 16G127368

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-08-17

DATE REPORTED: 2016-08-20

		SAMPLE DESCRIPTION:		NWall 3a 0.5m	NWall 3b 1.3m
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		8/17/2016	8/17/2016
Parameter	Unit	G / S	RDL	7777979	7777981
Benzene	mg/kg		0.005	<0.005	0.076
Toluene	mg/kg		0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	0.01	<0.01
Xylenes	mg/kg		0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10
C10 - C16 (F2)	mg/kg	150	10	60	<10
C16 - C34 (F3)	mg/kg	1300	10	790	28
C34 - C50 (F4)	mg/kg	5600	10	580	33
Gravimetric Heavy Hydrocarbons	mg/kg		1000	1720	NA
Moisture Content	%		N/A	7	22
Surrogate	Unit	Acceptable Limits			
Toluene-d8 (BTEX)	%	50-150		100	98
Ethylbenzene-d10 (BTEX)	%	50-150		104	110
o-Terphenyl (F2-F4)	%	50-150		106	107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7777979-7777981 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.

Certified By: Maureen Beattie

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FAX (780)402-2078
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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G127368

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	504	6991	< 0.005	< 0.005	NA	< 0.005	90%	80%	120%	88%	60%	140%	93%	60%	140%
Toluene	504	6991	< 0.05	< 0.05	NA	< 0.05	89%	80%	120%	82%	60%	140%	87%	60%	140%
Ethylbenzene	504	6991	< 0.01	< 0.01	NA	< 0.01	89%	80%	120%	77%	60%	140%	80%	60%	140%
Xylenes	504	6991	< 0.05	< 0.05	NA	< 0.05	88%	80%	120%	77%	60%	140%	81%	60%	140%
C6 - C10 (F1)	504	6991	< 10	< 10	NA	< 10	110%	70%	130%	84%	60%	140%	94%	60%	140%
C10 - C16 (F2)	2986	0980	16	< 10	NA	< 10	109%	80%	120%	105%	60%	140%	102%	60%	140%
C16 - C34 (F3)	2986	0980	< 10	< 10	NA	< 10	111%	80%	120%	104%	60%	140%	102%	60%	140%
C34 - C50 (F4)	2986	0980	< 10	< 10	NA	< 10	111%	80%	120%	102%	60%	140%	101%	60%	140%
Gravimetric Heavy Hydrocarbons	661	7979	1720	1510	NA	< 1000	NA	80%	120%	110%	60%	140%	NA	60%	140%

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.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
C10 - C16 (F2)	2984	6991	< 10	< 10	NA	< 10	112%	80%	120%	128%	60%	140%	133%	60%	140%
C16 - C34 (F3)	2984	6991	29	36	NA	< 10	112%	80%	120%	97%	60%	140%	100%	60%	140%
C34 - C50 (F4)	2984	6991	21	29	NA	< 10	113%	80%	120%	125%	60%	140%	133%	60%	140%

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.

Certified By: Maureen Beattie

AGAT Laboratories

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FAX (780)402-2078
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Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G127368

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
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webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature:
AGAT Job Number: 16G127368
Date and Time: AUG 17 11:43

Report Information

Company: SHARP Env (2000) Ltd
Contact: Denise Bjornson
Address: Box 319
Fairview, AB
Phone: 7808340111 Fax:
LSD: Rycroft Site 9433
Client Project #:

Report Information

1. Name: Denise Bjornson
Email: dbjornson@sharp2000.com
2. Name:
Email:
3. Name:
Email:

Report Format

☐ Single Sample per Page
☒ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☐ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☒ 48 to 72 hours
Date Required:

RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. *SEE BACK FOR SURCHARGE.*

Invoice To

Same Yes / No
Company: SHARP
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*

☐ **CCME**
- ☐ Agricultural
- ☐ Industrial
- ☐ Residential/Park
- ☐ Commercial
- ☐ Drinking Water
- ☐ FWAL

☐ **AB Tier 1**
- ☐ Agricultural
- ☐ Industrial
- ☒ Residential/Park
- ☐ Commercial
- ☐ Natural Area

☐ **AB Surface Water**

☐ **BC CSR**
- ☐ AW
- ☐ IW
- ☐ LW
- ☐ DW

☐ **Other**
- ☐ D50 (Drilling)
- ☐ SPIGEC

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 ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
979	NWall 3a 0.5m	Soil	Aug 17/16 10:30	Jar	1		✓											N
981	NWall 3b 1.3m	"	"	"	1		✓											N

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Denise Bjornson	Aug 17/16 11:36	17-Aug-16	
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 1 of 1

N°: AB 033721

Document ID: DIO-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Sharp Env.

Courier: _____ 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: _____

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) 21 + 20 = 20 °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: 16y127368

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)

Date issued: October 05, 2015
Document ID: SR-9505 003

AGAT Laboratories

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FAX (780)402-2078
http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G128139

TRACE ORGANICS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

DATE REPORTED: Aug 20, 2016

PAGES (INCLUDING COVER): 6

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*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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Certificate of Analysis

AGAT WORK ORDER: 16G128139

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-08-18

DATE REPORTED: 2016-08-20

		SAMPLE DESCRIPTION:		Floor 4 1.5m	Floor 5 1.5m	Floor 6 1.5m	Floor 7 1.5m
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		8/18/2016	8/18/2016	8/18/2016	8/18/2016
Parameter	Unit	G / S	RDL	7784407	7784416	7784417	7784418
Benzene	mg/kg		0.005	0.129	0.954	5.97	2.02
Toluene	mg/kg		0.05	<0.05	<0.05	0.32	0.11
Ethylbenzene	mg/kg		0.01	0.27	1.67	1.14	2.16
Xylenes	mg/kg		0.05	<0.05	<0.05	0.48	0.11
C6 - C10 (F1)	mg/kg	210	10	92	267	141	327
C6 - C10 (F1 minus BTEX)	mg/kg		10	91	264	133	323
C10 - C16 (F2)	mg/kg	150	10	19	62	<10	51
C16 - C34 (F3)	mg/kg	1300	10	46	58	68	23
C34 - C50 (F4)	mg/kg	5600	10	32	42	55	17
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA
Moisture Content	%		N/A	19	22	24	24
Surrogate	Unit	Acceptable Limits					
Toluene-d8 (BTEX)	%	50-150		102	103	104	103
Ethylbenzene-d10 (BTEX)	%	50-150		119	128	124	129
o-Terphenyl (F2-F4)	%	50-150		110	108	112	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7784407-7784418 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.

Certified By: Maureen Beattie

AGAT Laboratories

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FAX (780)402-2078
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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G128139

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Aug 20, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	506	4407	0.119	0.129	8.1%	< 0.005	89%	80%	120%	84%	60%	140%	84%	60%	140%
Toluene	506	4407	< 0.05	< 0.05	NA	< 0.05	86%	80%	120%	81%	60%	140%	85%	60%	140%
Ethylbenzene	506	4407	0.27	0.23	16.0%	< 0.01	84%	80%	120%	77%	60%	140%	78%	60%	140%
Xylenes	506	4407	< 0.05	< 0.05	NA	< 0.05	82%	80%	120%	76%	60%	140%	82%	60%	140%
C6 - C10 (F1)	506	4407	92	64	35.9%	< 10	99%	70%	130%	80%	60%	140%	79%	60%	140%
C10 - C16 (F2)	2985	4407	19	18	NA	< 10	104%	80%	120%	101%	60%	140%	103%	60%	140%
C16 - C34 (F3)	2985	4407	46	40	NA	< 10	106%	80%	120%	101%	60%	140%	102%	60%	140%
C34 - C50 (F4)	2985	4407	32	30	NA	< 10	107%	80%	120%	99%	60%	140%	104%	60%	140%

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.

Certified By: Maureen Beattie

AGAT Laboratories

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FAX (780)402-2078
http://www.agatlabs.com

Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G128139

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
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Grande Prairie, Alberta
T8V 8B7
webearth.agatlabs.com
P: 780.402.2050 • F: 780.402.2078 • TF: 866.764.7554

Chain of Custody Record

Laboratory Use Only
Arrival Temperature:
AGAT Job Number: 16G128139
Notes:
'16 AUG 18 14:14

Report Information
Company: SHARP Environmental (2000) Ltd.
Contact: Denise Bjornson
Address: Bcx 319 Fairview, AB
Phone: 780-834-0111 Fax:
LSD: Rycroft Site 9433
Client Project #:

Report Information
1. Name: Denise Bjornson
Email: dbjornson@sharp2000.com
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 24 to 48 hours ☐
48 to 72 hours ☑
Date Required:

Invoice To Same Yes ☑ / No ☐
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#: Quoted

Requirements *(Check one)*
☐ Alberta Tier 1
☐ Agricultural ☐ D50 (Drilling)
☐ Commercial ☐ CCME
☐ Natural Area ☐ BC CSR
☑ Res/Park ☐ Other
☐ Industrial Soil
☐ FWAL
Notes:

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	# OF CONTAINERS	Microtox	Detailed Salinity: D-50 - As Received	Detailed Salinity: ☐ AB ☐ BC	AB Hydrocarbons: BTEX/F1 - F4	BC Hydrocarbons: BTEXS/VPH/LEPH/HEPH (PAH)	BC Hydrocarbons: BTEXS/VPH/EPH	Metals/HWS-B/Cr_{6+} in Soil: ☐ AB ☐ BC	Metals in Water: ☐ Dissolved ☐ Total	AB Class II Landfill	BC Landfill (specify):									HOLD FOR 60 DAYS (NO ANALYSIS)	CONTAMINATED/HAZARDOUS (Y/N)
407	Floor 4 1.3m	Soil	08/18/2016	Jar					✓															n
416	Floor 5 1.3m	Soil	08/18/2016	Jar					✓															n
417	Floor 6 1.3m	Soil	08/18/2016	Jar					✓															n
418	Floor 7 1.3m	Soil	08/18/2016	Jar					✓															n
			08/18/2016																					
			08/18/2016																					
			08/18/2016																					
			08/18/2016																					
			08/18/2016																					
			08/18/2016																					
			08/18/2016																					

Samples Relinquished By (Print Name and Sign)	Date/Time	Samples Received By (Print Name and Sign)	Date/Time
Denise Bjornson	08/18/2016	Kristen Chase / K-Chase	08/18/2016

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Sharp FV.

Courier: _____ 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: _____

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 25-Aug-16

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) 21 + 21 + 21 = 21 °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: 166, 128139

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)

Date issued: October 05, 2015
Document ID: SR-9505 003

AGAT Laboratories

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GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G136182

TRACE ORGANICS REVIEWED BY: Natasha Arsenault, Project Manager, Environmental

DATE REPORTED: Sep 19, 2016

PAGES (INCLUDING COVER): 9

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*NOTES

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

AGAT Laboratories

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FAX (780)402-2078
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 16G136182

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-09-09

DATE REPORTED: 2016-09-19

		SAMPLE DESCRIPTION:		Floor 5 1.7m	Floor 6 1.7m	Floor 7 1.7m	Floor 8 1.7m	Floor 9 1.7m	Floor 10 1.7m	E Wall 1b 0.5m	E Wall 3a 0.5m
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		9/9/2016	9/9/2016	9/9/2016	9/9/2016	9/9/2016	9/9/2016	9/9/2016	9/9/2016
Parameter	Unit	G / S	RDL	7836272	7836276	7836277	7836278	7836280	7836281	7836282	7836283
Benzene	mg/kg		0.005	0.025	0.438	0.019	<0.005	2.53	5.29	0.039	0.301
Toluene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	0.10	0.32	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	0.05	1.05	<0.01	<0.01	0.38	0.21	<0.01	0.05
Xylenes	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	10	72	94	<10	<10	71	94	<10	30
C6 - C10 (F1 minus BTEX)	mg/kg		10	72	93	<10	<10	68	88	<10	30
C10 - C16 (F2)	mg/kg	150	10	<10	22	<10	<10	<10	<10	<10	13
C16 - C34 (F3)	mg/kg	1300	10	22	30	48	16	28	24	51	27
C34 - C50 (F4)	mg/kg	5600	10	18	22	32	12	19	14	58	25
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		N/A	23	24	23	24	22	25	24	22
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	50-150		100	99	99	101	102	103	99	99
Ethylbenzene-d10 (BTEX)	%	50-150		119	116	107	120	121	122	116	114
o-Terphenyl (F2-F4)	%	50-150		107	103	113	101	106	111	109	107

Certified By: Natasha Ausenault

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 16G136182

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-09-09

DATE REPORTED: 2016-09-19

		SAMPLE DESCRIPTION:		E Wall 3a 1.3m	W Wall 3a 0.5m	W Wall 3a 1.3m	W Wall 5a 0.5m	W Wall 5a 1.3m	W Wall 4a 0.5m	W Wall 4a 1.3m
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		9/9/2016	9/9/2016	9/9/2016	9/9/2016	9/9/2016	9/9/2016	9/9/2016
Parameter	Unit	G / S	RDL	7836284	7836285	7836286	7836287	7836288	7836355	7836361
Benzene	mg/kg		0.005	0.858	0.014	0.610	0.008	0.013	0.068	<0.005
Toluene	mg/kg		0.05	<0.05	<0.05	0.18	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	0.24	0.01	0.47	0.18	<0.01	0.04	<0.01
Xylenes	mg/kg		0.05	<0.05	<0.05	0.32	0.30	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	10	67	<10	69	68	<10	13	12
C6 - C10 (F1 minus BTEX)	mg/kg		10	66	<10	67	68	<10	13	12
C10 - C16 (F2)	mg/kg	150	10	15	15	20	23	<10	<10	<10
C16 - C34 (F3)	mg/kg	1300	10	34	116	50	13	51	13	88
C34 - C50 (F4)	mg/kg	5600	10	28	110	44	<10	40	<10	71
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		N/A	21	24	21	23	23	21	12
Surrogate	Unit	Acceptable Limits								
Toluene-d8 (BTEX)	%	50-150		98	97	98	98	98	93	97
Ethylbenzene-d10 (BTEX)	%	50-150		116	107	110	117	110	103	96
o-Terphenyl (F2-F4)	%	50-150		113	113	104	103	104	109	109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7836272-7836361 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.

Certified By: Natasha Ausenault

AGAT Laboratories

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FAX (780)402-2078
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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G136182

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Sep 19, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	525	7515	0.005	< 0.005	NA	< 0.005	100%	80%	120%	97%	60%	140%	102%	60%	140%
Toluene	525	7515	< 0.05	< 0.05	NA	< 0.05	97%	80%	120%	95%	60%	140%	97%	60%	140%
Ethylbenzene	525	7515	0.01	0.01	NA	< 0.01	95%	80%	120%	94%	60%	140%	99%	60%	140%
Xylenes	525	7515	0.04	0.06	NA	< 0.05	93%	80%	120%	95%	60%	140%	99%	60%	140%
C6 - C10 (F1)	525	7515	< 10	< 10	NA	< 10	101%	70%	130%	70%	60%	140%	69%	60%	140%
C10 - C16 (F2)	3005	7515	12	12	NA	< 10	110%	80%	120%	91%	60%	140%	101%	60%	140%
C16 - C34 (F3)	3005	7515	37	37	NA	< 10	115%	80%	120%	90%	60%	140%	99%	60%	140%
C34 - C50 (F4)	3005	7515	28	28	NA	< 10	114%	80%	120%	88%	60%	140%	99%	60%	140%

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.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	528	7836355	0.068	0.066	3.0%	< 0.005	98%	80%	120%	89%	60%	140%	96%	60%	140%
Toluene	528	7836355	< 0.05	< 0.05	NA	< 0.05	92%	80%	120%	85%	60%	140%	91%	60%	140%
Ethylbenzene	528	7836355	0.04	0.03	NA	< 0.01	93%	80%	120%	84%	60%	140%	90%	60%	140%
Xylenes	528	7836355	< 0.05	< 0.05	NA	< 0.05	92%	80%	120%	84%	60%	140%	90%	60%	140%
C6 - C10 (F1)	528	7836355	13	13	NA	< 10	106%	70%	130%	70%	60%	140%	77%	60%	140%
C10 - C16 (F2)	3008	7836355	< 10	< 10	NA	< 10	105%	80%	120%	102%	60%	140%	104%	60%	140%
C16 - C34 (F3)	3008	7836355	13	12	NA	< 10	107%	80%	120%	101%	60%	140%	98%	60%	140%
C34 - C50 (F4)	3008	7836355	< 10	< 10	NA	< 10	107%	80%	120%	100%	60%	140%	99%	60%	140%

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.

Certified By: Natasha Ausenault

AGAT Laboratories

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Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G136182

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
P: 403.735.2005 • F: 403.735.2771
webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only

Arrival Temperature: _____

AGAT Job Number: _____

Date and Time: '16 SEP -9 14 :27

Report Information

Company: SHAW ENVIRONMENTAL

Contact: DENISE

Address: _____

Phone: _____ Fax: _____

LSD: _____

Client Project #: _____

Report Information

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____

Report Format

☐ Single Sample per Page

☐ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☐ 5 to 7 business days

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

Date Required: _____

RUSH TAT REQUE UPON SELECTING RUSH TAT, THE CL ACCEPTS THAT A RUSH SURCHARG WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To

Same Yes / No

Company: _____

Contact: _____

Address: _____

Phone: _____ Fax: _____

PO/AFE#: _____

Requirements *(Selection may impact detection limits)*

☐ CCME
- ☐ Agricultural
- ☐ Industrial
- ☐ Residential/Park
- ☐ Commercial
- ☐ Drinking Water
- ☐ FWAL

☐ AB Tier 1
- ☐ Agricultural
- ☐ Industrial
- ☐ Residential/Park
- ☐ Commercial
- ☐ Natural Area
- ☐ AB Surface Water

☐ BC CSR
- ☐ AW
- ☐ IW
- ☐ LW
- ☐ DW

☐ Other
- ☐ D50 (Drilling)
- ☐ SPIGEC

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 ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
		Colen Cyril	Sept. 9/16
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 1 of 1

N°: AB 033845

AGAT Laboratories

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Grande Prairie, Alberta
T8V 8B7
webearth.agatlabs.com

P: 780.402.2050 • F: 780.402.2078 • TF: 866.764.7554

Chain of Custody Record

Laboratory Use Only

Arrival Temperature: _____

AGAT Job Number: 1647136182

Notes:

Report Information

Company: SHARP Environmental (2000) Ltd.
Contact: Denise Bjornson
Address: Box 319 Fairview, AB
Phone: 780-834-0111 Fax: _____
LSD: Rycroft Site 9433
Client Project #: _____

Invoice To Same Yes ☑ / No ☐

Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/AFE#: Quoted

Report Information

1. Name: Denise Bjornson
   Email: dbjornson@sharp2000.com
2. Name: _____
   Email: _____

Requirements *(Check one)*

☐ Alberta Tier 1
☐ Agricultural ☐ Commercial ☐ Natural Area ☑ Res/Park ☐ Industrial ☐ FWAL
☐ D50 (Drilling) ☐ CCME ☐ BC CSR ☐ Other: Soil

Notes:

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 24 to 48 hours ☐ 48 to 72 hours ☐

Date Required: _____

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	# OF CONTAINERS	Microtox	Detailed Salinity: D-50 - As Received	Detailed Salinity: ☐AB ☐BC	AB Hydrocarbons: BTEX/F1 - F4	BC Hydrocarbons: BTEXS/VPH/LEPH/HEPH (PAH)	BC Hydrocarbons: BTEXS/VPH/EPH	Metals/HWS-B/Cr_{6+} in Soil: ☐AB ☐BC	Metals in Water: ☐Dissolved ☐Total	AB Class II Landfill	BC Landfill (specify):									HOLD FOR 60 DAYS (NO ANALYSIS)	CONTAMINATED/HAZARDOUS (Y/N)
272	Floor 5 1.7m	Soil	09/09/2016	Jar					✓															n
276	Floor 6 1.7m	Soil	09/09/2016	Jar					✓															n
277	Floor 7 1.7m	Soil	09/09/2016	Jar					✓															n
278	Floor 8 1.7m	Soil	09/09/2016	Jar					✓															n
280	Floor 9 1.7m	Soil	09/09/2016	Jar					✓															n
281	Floor 10 1.7m	Soil	09/09/2016	Jar					✓															n
282	E Wall 1b 0.5m	Soil	09/09/2016	Jar					✓															n
283	E Wall 3a 0.5m	Soil	09/09/2016	Jar					✓															n
284	E Wall 3a 1.3m	Soil	09/09/2016	Jar					✓															n
285	W Wall 3a 0.5m	Soil	09/09/2016	Jar					✓															n
286	W Wall 3a 1.3m	Soil	09/09/2016	Jar					✓															n

Samples Relinquished By (Print Name and Sign)	Date/Time	Samples Received By (Print Name and Sign)	Date/Time
Denise Bjornson	09/09/2016		09/09/2016

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

N°: _____

Document #: CIV-61-1500-001 Date Revised: November 26, 2012

AGAT Laboratories

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Grande Prairie, Alberta
T8V 8B7
webearth.agatlabs.com

Laboratory Use Only

Arrival Temperature: _____

AGAT Job Number: _____

Notes:

Chain of Custody Record

P: 780.402.2050 • F: 780.402.2078 • TF: 866.764.7554

Report Information

Company: SHARP Environmental (2000) Ltd.
Contact: Denise Bjornson
Address: Box 319 Fairview, AB
Phone: 780-834-0111 Fax:
LSD: Rycroft Site 9433
Client Project #:

Invoice To Same Yes ☑ / No ☐

Company:
Contact:
Address:
Phone: Fax:
PO/AFE#: Quoted

Report Information

1. Name: Denise Bjornson
   Email: dbjornson@sharp2000.com
2. Name:
   Email:

Requirements *(Check one)*

☐ **Alberta Tier 1**
- ☐ Agricultural
- ☐ Commercial
- ☐ Natural Area
- ☑ Res/Park
- ☐ Industrial
- ☐ FWAL
- ☐ D50 (Drilling)
- ☐ CCME
- ☐ BC CSR
- ☐ Other: Soil

Notes:

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 24 to 48 hours ☐ 48 to 72 hours ☐

Date Required:

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	# OF CONTAINERS	Microtox	Detailed Salinity: D-50 - As Received	Detailed Salinity: ☐AB ☐BC	AB Hydrocarbons: BTEX/F1 - F4	BC Hydrocarbons: BTEXS/VPH/LEPH/HEPH (PAH)	BC Hydrocarbons: BTEXS/VPH/EPH	Metals/HWS-B/Cr_{6+} in Soil: ☐AB ☐BC	Metals In Water: ☐Dissolved ☐Total	AB Class II Landfill	BC Landfill (specify):									HOLD FOR 60 DAYS (NO ANALYSIS)	CONTAMINATED/HAZARDOUS (Y/N)
287	S Wall 5a 0.5m	Soil	09/09/2016	Jar					✓																n
288	S Wall 5a 1.3m	Soil	09/09/2016	Jar					✓																n
			09/09/2016																						n
			09/09/2016																						n
			09/09/2016																						
			09/09/2016																						
			09/09/2016																						
			09/09/2016																						
			09/09/2016																						
			09/09/2016																						
			09/09/2016																						

Samples Relinquished By (Print Name and Sign)	Date/Time	Samples Received By (Print Name and Sign)	Date/Time
Denise Bjornson	09/09/2016		09/09/2016

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Yellow Copy - AGAT
White Copy- AGAT

Page 2 of 2

Nº:

Document #: DIV-01-1500.001

Date Revised: November 26, 2012

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Shaw FN.

Courier: _____ 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: _____

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 16-Sep-16

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) 19 + 19 + 18 = 19 °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: 1641361 82

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: Client submitted Sample ID's and analysis on COC via email. Sample "WWALL 4a 0.5m" and "WWALL 4a 1.3m" not listed on COC, placed on Hold

* Subcontracted Analysis (See CPM)

Date issued: October 05, 2015

AGAT Laboratories

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CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G138235

TRACE ORGANICS REVIEWED BY: Natasha Arsenault, Project Manager, Environmental

DATE REPORTED: Sep 28, 2016

PAGES (INCLUDING COVER): 8

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*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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FAX (780)402-2078
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Certificate of Analysis

AGAT WORK ORDER: 16G138235

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-09-16

DATE REPORTED: 2016-09-28

SAMPLE DESCRIPTION:				SWall 5a 75cm	SWall 5a 150cm	EWall 4a 75cm	EWall 4a 140cm	EWall 5a 75cm	EWall 5a 150cm	WWall 5a 75cm	WWall 5a 150cm
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016
Parameter	Unit	G / S	RDL	7849999	7850000	7850001	7850002	7850003	7850004	7850005	7850006
Benzene	mg/kg		0.005	3.35	1.30	1.56	5.92	0.010	0.846	<0.005	<0.005
Toluene	mg/kg		0.05	19.6	0.77	7.13	0.34	<0.05	0.06	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	12.5	5.42	4.03	2.38	0.01	0.22	<0.01	<0.01
Xylenes	mg/kg		0.05	47.8	1.45	18.6	0.21	<0.05	0.43	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	10	1090	570	365	193	<10	37	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	1010	561	334	184	<10	35	<10	<10
C10 - C16 (F2)	mg/kg	150	10	155	53	88	<10	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	1300	10	65	96	<10	53	98	36	<10	14
C34 - C50 (F4)	mg/kg	5600	10	50	66	<10	42	66	24	<10	11
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		N/A	22	23	21	23	23	22	22	23
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	50-150		101	100	100	100	101	98	100	101
Ethylbenzene-d10 (BTEX)	%	50-150		113	110	108	114	112	114	106	109
o-Terphenyl (F2-F4)	%	50-150		119	107	103	119	108	109	114	113

Certified By: Natasha Ausenault

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Certificate of Analysis

AGAT WORK ORDER: 16G138235

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-09-16

DATE REPORTED: 2016-09-28

SAMPLE DESCRIPTION:				Floor 11 220cm	Floor 12 240cm	Floor 13 200cm	SW 4b 75cm	SW 4b 150cm
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016
Parameter	Unit	G / S	RDL	7850007	7850008	7850009	7850010	7850011
Benzene	mg/kg		0.005	0.332	2.79	0.489	<0.005	<0.005
Toluene	mg/kg		0.05	<0.05	0.07	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	<0.01	0.86	<0.01	0.03	<0.01
Xylenes	mg/kg		0.05	<0.05	0.86	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	10	<10	79	<10	106	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	74	<10	106	<10
C10 - C16 (F2)	mg/kg	150	10	<10	<10	<10	61	<10
C16 - C34 (F3)	mg/kg	1300	10	62	22	39	41	25
C34 - C50 (F4)	mg/kg	5600	10	40	14	19	24	20
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA
Moisture Content	%		N/A	22	22	22	23	22
Surrogate	Unit	Acceptable Limits						
Toluene-d8 (BTEX)	%	50-150		100	99	99	98	101
Ethylbenzene-d10 (BTEX)	%	50-150		110	113	107	109	105
o-Terphenyl (F2-F4)	%	50-150		120	115	104	112	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7849999-7850011 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.

Certified By: Natasha Ausenault

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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G138235

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Sep 28, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	529	9825	< 0.005	< 0.005	NA	< 0.005	87%	80%	120%	89%	60%	140%	93%	60%	140%
Toluene	529	9825	< 0.05	< 0.05	NA	< 0.05	88%	80%	120%	88%	60%	140%	91%	60%	140%
Ethylbenzene	529	9825	< 0.01	< 0.01	NA	< 0.01	90%	80%	120%	86%	60%	140%	91%	60%	140%
Xylenes	529	9825	< 0.05	< 0.05	NA	< 0.05	92%	80%	120%	87%	60%	140%	91%	60%	140%
C6 - C10 (F1)	529	9825	< 10	< 10	NA	< 10	97%	70%	130%	73%	60%	140%	70%	60%	140%
C10 - C16 (F2)	3009	9825	< 10	< 10	NA	< 10	113%	80%	120%	95%	60%	140%	103%	60%	140%
C16 - C34 (F3)	3009	9825	22	12	NA	< 10	113%	80%	120%	96%	60%	140%	100%	60%	140%
C34 - C50 (F4)	3009	9825	19	10	NA	< 10	113%	80%	120%	93%	60%	140%	99%	60%	140%

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.

Certified By: Natasha Ausenault

AGAT Laboratories

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Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G138235

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
P: 403.735.2005 • F: 403.735.2771
webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature:
AGAT Job Number: 1649138235
Date and Time:

Report Information

Company: SHARP Env. (2000) Ltd
Contact: Denise Bjornson
Address: Box 319
Fairview AB
Phone: 780-834-0111 Fax:
LSD: Rycroft Site 9433
Client Project #:

Report Information

1. Name: Denise Bjornson
Email: dbjornson@sharp2000.com
2. Name:
Email:
3. Name:
Email:

Report Format

'16 SEP 16

☐ Single Sample per Page

☒ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 business days

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

Date Required:

RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To

Same Yes / No

Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements (Selection may impact detection limits)

☐ **CCME**
- ☐ Agricultural
- ☐ Industrial
- ☐ Residential/Park
- ☐ Commercial
- ☐ Drinking Water
- ☐ FWAL

☐ **AB Tier 1**
- ☐ Agricultural
- ☐ Industrial
- ☐ Residential/Park
- ☒ Commercial
- ☐ Natural Area

☐ **AB Surface Water**

☐ **BC CSR**
- ☐ AW
- ☐ IW
- ☐ LW
- ☐ DW

☐ **Other**
- ☐ D50 (Drilling)
- ☐ SPIGEC

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 ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
999	SWall 5a 75cm	Soil	Sept. 15/16	Jar	1		X											
000	" 150cm				1		X											
001	EWall 4a 75cm				1		X											
002	" 140cm				1		X											
003	EWall 5a 75cm				1		X											
004	" 150cm				1		X											
005	W Wall 5a 75cm				1		X											
006	" 150cm				1		X											
007	Floor 11 220				1		✓											
008	Floor 12 240cm				1		✓											
009	Floor 13 200cm				1		X											

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Wally Lenbeck	Sept. 15/16		
Samples Relinquished By (Print Name and Sign):	Date/Time 5:55pm	Samples Received By (Print Name and Sign): 16-Sep-16	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 1 of 2

N°: AB 077317

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

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Calgary, Alberta T2E 7P7
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webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature:
AGAT Job Number:
Date and Time: 16 SEP 16 -8 08

Report Information
Company: SHARP Env (2000) Ltd.
Contact: Denise Bjornson
Address: Box 319
Fairview AB T0H1L0
Phone: 7808340111 Fax:
LSD: Rycroft Site 9432
Client Project #:

Report Information
1. Name: Denise Bjornson
Email: dbjornson@sharp2000.com
2. Name:
Email:
3. Name:
Email:

Report Format
☐ Single Sample per Page
☒ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☒ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required:
RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To
Same Yes / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements (Selection may impact detection limits)
☐ CCME: ☐ Agricultural ☐ Industrial ☐ Residential/Park ☐ Commercial ☐ Drinking Water ☐ FWAL
☐ AB Tier 1: ☐ Agricultural ☐ Industrial ☐ Residential/Park ☒ Commercial ☐ Natural Area
☐ AB Surface Water
☐ BC CSR: ☐ AW ☐ IW ☐ LW ☐ DW
☐ Other: ☐ D50 (Drilling) ☐ SPIGEC

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 ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐		Prep for HC + HOLD					HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
010	SW4b 75cm	Soil	Sept. 15	Jar	1		☒										X						
011	" 150cm	"	"	"	1		☒										X						

Samples Relinquished By (Print Name and Sign): Maya Lubeck — Date/Time: Sept 15/16 5:55pm
Samples Received By (Print Name and Sign): — Date/Time: 16-Sep-16

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 2 of 2

N°: AB 077313

Document ID: DIC-50-1607-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Sharp FV.

Courier: _____ 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: _____

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 22-Sep-16

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 + 7 + 7 = 7c °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: 1647138235

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)

Date issued: October 05, 2015

AGAT Laboratories

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TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft 9433

AGAT WORK ORDER: 16G143534

TRACE ORGANICS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

DATE REPORTED: Oct 04, 2016

PAGES (INCLUDING COVER): 6

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*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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CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 16G143534

PROJECT: Rycroft 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-09-30

DATE REPORTED: 2016-10-04

SAMPLE DESCRIPTION:				Floor 9 2.0m	Floor 10 2.0m	Floor 12 2.6m	EWall 4B 0.75m	EWall 4B 1.40m	SWall 5B 0.75m	SWall 5B 1.50m
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				9/29/2016	9/29/2016	9/29/2016	9/29/2016	9/29/2016	9/29/2016	9/29/2016
Parameter	Unit	G / S	RDL	7889607	7889629	7889631	7889633	7889634	7889635	7889678
Benzene	mg/kg		0.005	8.77	2.45	2.57	1.36	4.48	1.01	0.386
Toluene	mg/kg		0.05	0.27	0.29	0.13	0.39	<0.05	0.07	<0.05
Ethylbenzene	mg/kg		0.01	6.49	2.41	1.76	2.09	0.41	0.03	<0.01
Xylenes	mg/kg		0.05	7.78	0.51	0.06	2.17	0.16	0.51	<0.05
C6 - C10 (F1)	mg/kg	210	10	202	303	150	98	73	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	179	297	146	92	68	<10	<10
C10 - C16 (F2)	mg/kg	150	10	38	32	35	16	<10	<10	<10
C16 - C34 (F3)	mg/kg	1300	10	76	42	69	23	59	15	20
C34 - C50 (F4)	mg/kg	5600	10	38	22	40	17	41	<10	15
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		N/A	24	22	23	22	23	22	22
Surrogate	Unit	Acceptable Limits								
Toluene-d8 (BTEX)	%	50-150		102	100	101	101	101	102	99
Ethylbenzene-d10 (BTEX)	%	50-150		119	117	121	119	117	117	109
o-Terphenyl (F2-F4)	%	50-150		103	103	105	102	102	108	109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7889607-7889678 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.

Certified By: Maureen Beattie

AGAT Laboratories

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CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G143534

PROJECT: Rycroft 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Oct 04, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	541	3078	< 0.005	< 0.005	NA	< 0.005	96%	80%	120%	104%	60%	140%	108%	60%	140%
Toluene	541	3078	< 0.05	< 0.05	NA	< 0.05	96%	80%	120%	101%	60%	140%	106%	60%	140%
Ethylbenzene	541	3078	< 0.01	< 0.01	NA	< 0.01	104%	80%	120%	106%	60%	140%	109%	60%	140%
Xylenes	541	3078	< 0.05	< 0.05	NA	< 0.05	108%	80%	120%	107%	60%	140%	111%	60%	140%
C6 - C10 (F1)	541	3078	< 10	< 10	NA	< 10	105%	70%	130%	112%	60%	140%	110%	60%	140%
C10 - C16 (F2)	3021	3078	< 10	< 10	NA	< 10	108%	80%	120%	108%	60%	140%	102%	60%	140%
C16 - C34 (F3)	3021	3078	12	< 10	NA	< 10	114%	80%	120%	108%	60%	140%	102%	60%	140%
C34 - C50 (F4)	3021	3078	< 10	< 10	NA	< 10	112%	80%	120%	105%	60%	140%	99%	60%	140%

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.

Certified By: Maureen Beattie

AGAT Laboratories

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Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G143534

PROJECT: Rycroft 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
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webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature:
AGAT Job Number: 16G143534
Date and Time: 16 SEP 30 -8 :39

Report Information
Company: SHARP Env (2000) Ltd
Contact: Denise Bjornson
Address: Box 319
Fairview, AB T0H 1L0
Phone: 7808340111 Fax:
LSD:
Client Project #: Rycroft 9433.

Report Information
1. Name: Denise Bjornson
Email: dbjornson@sharp2000 Ltd. .com
2. Name:
Email:
3. Name:
Email:

Report Format
☐ Single Sample per Page
☒ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☒ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required:
RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. *SEE BACK FOR SURCHARGE.*

Invoice To Same Yes / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*
☐ CCME ☐ Agricultural ☐ Industrial ☐ Residential/Park ☐ Commercial ☐ Drinking Water ☐ FWAL
☐ AB Tier 1 ☐ Agricultural ☐ Industrial ☒ Residential/Park ☐ Commercial ☐ Natural Area
☐ AB Surface Water
☐ BC CSR ☐ AW ☐ IW ☐ LW ☐ DW
☐ Other ☐ D50 (Drilling) ☐ SPIGEC

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 ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
627	Floor 9 2.0m	Soil	Sept 29/16	Jar	1		✓											N
629	Floor 10 2.0m				1		✓											
631	Floor 12 2.6m				1		✓											
633	Ewall 4b 0.75m				1		✓											
634	Ewall 4b 1.40m				1		✓											
635	Swall 5b 0.75m				1		✓											
678 ~~636~~	Swall 5b 1.5m.				1		✓											↓

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Denise Bjornson	Sept 29/16	Corey Cwl Camp Cwl	Sept. 30/16
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 1 of 1

N°: AB 038803

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: SHARP

Courier: _____ 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: _____

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 6-Oct-16

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 + 8 + 7 = 8 °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: 1641435534

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)

Date issued: October 05, 2015
Document ID: SR-9505.003

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: DENISE BJORNSON

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G149250

TRACE ORGANICS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

DATE REPORTED: Oct 18, 2016

PAGES (INCLUDING COVER): 6

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*NOTES

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

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 16G149250

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-10-17

DATE REPORTED: 2016-10-18

SAMPLE DESCRIPTION:				Floor "9" 2.2m	Floor "10" 2.2m	Floor "12" 3.0m	East Wall 4B 1.4m
SAMPLE TYPE:				Soil	Soil	Soil	Soil
DATE SAMPLED:				10/17/2016	10/17/2016	10/17/2016	10/17/2016
Parameter	Unit	G / S	RDL	7930038	7930039	7930040	7930041
Benzene	mg/kg		0.005	1.93	0.392	2.78	0.008
Toluene	mg/kg		0.05	0.05	<0.05	0.11	<0.05
Ethylbenzene	mg/kg		0.01	0.22	0.02	0.97	<0.01
Xylenes	mg/kg		0.05	0.19	<0.05	0.48	<0.05
C6 - C10 (F1)	mg/kg	210	10	25	<10	25	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	22	<10	20	<10
C10 - C16 (F2)	mg/kg	150	10	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	1300	10	39	14	15	31
C34 - C50 (F4)	mg/kg	5600	10	15	<10	<10	12
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA
Moisture Content	%		N/A	24	24	28	23
Surrogate	Unit	Acceptable Limits					
Toluene-d8 (BTEX)	%	50-150		101	102	103	102
Ethylbenzene-d10 (BTEX)	%	50-150		115	115	115	111
o-Terphenyl (F2-F4)	%	50-150		102	105	114	102

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7930038-7930041 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.

Certified By: Maureen Beattie

AGAT Laboratories

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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G149250

PROJECT: Rycroft Site 9433

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Oct 18, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	554	0038	1.96	1.93	1.5%	< 0.005	91%	80%	120%	87%	60%	140%	94%	60%	140%
Toluene	554	0038	0.05	0.05	NA	< 0.05	96%	80%	120%	91%	60%	140%	93%	60%	140%
Ethylbenzene	554	0038	0.16	0.22	31.6%	< 0.01	101%	80%	120%	95%	60%	140%	95%	60%	140%
Xylenes	554	0038	0.14	0.19	NA	< 0.05	103%	80%	120%	96%	60%	140%	97%	60%	140%
C6 - C10 (F1)	554	0038	19	25	NA	< 10	97%	70%	130%	88%	60%	140%	83%	60%	140%
C10 - C16 (F2)	3034	7930038	< 10	< 10	NA	< 10	103%	80%	120%	118%	60%	140%	118%	60%	140%
C16 - C34 (F3)	3034	7930038	22	39	NA	< 10	106%	80%	120%	122%	60%	140%	122%	60%	140%
C34 - C50 (F4)	3034	7930038	< 10	15	NA	< 10	98%	80%	120%	119%	60%	140%	89%	60%	140%

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.

Certified By: Maureen Beattie

AGAT Laboratories

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FAX (780)402-2078
http://www.agatlabs.com

Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G149250

PROJECT: Rycroft Site 9433

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories

2910 12 Street NE
Calgary, Alberta T2E 7P7
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webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature: 3°C
AGAT Job Number: 16G149250
Date and Time: '16 OCT 17 15:03

Report Information

Company: Sharp Environmental 2000 Ltd
Contact: Denise Bjornson
Address: Box 319 Fairview, AB T0H-1L0
Phone: 780 835 4646 Fax:
LSD:
Client Project #: Rycroft site 9433

Report Information

1. Name: Denise Bjornson
   Email: dbjornson@sharp2000.com
2. Name:
   Email:
3. Name:
   Email:

Report Format

☐ Single Sample per Page
☑ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☐ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☑ 24 to 48 hours ☐ 48 to 72 hours
Date Required:

RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. *SEE BACK FOR SURCHARGE.*

Invoice To

Same Yes / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*

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

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 ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
7930038	Floor "9" 1.2 m	Jar	17 10 16		1		✓											
0039	Floor "10" 1.2 m	✓	✓		1		✓											
0040	Floor "12" 3.0 m	✓	✓		1		✓											
0041	East Wall - #4A 1.4 m	✓	✓		1		✓											

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
		Coley Cuvl	Oct. 17/16
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 1 of 1

N°: AB 038804

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Shaw Environmental

Courier: N/A Prepaid Collect

Waybill# N/A

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: _____

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 Oct. 24, 2016

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) 3 + 3 + 3 = 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: 16G-149-250

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)

Date issued: October 05, 2015
Document ID: SR-9505.003

AGAT Laboratories

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GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: DENISE BJORNSON

PROJECT: Rycroft Site 9433 Remediation Project

AGAT WORK ORDER: 16G149912

TRACE ORGANICS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

DATE REPORTED: Oct 20, 2016

PAGES (INCLUDING COVER): 6

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*NOTES

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

AGAT Laboratories
10203B 123 STREET
GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 16G149912

PROJECT: Rycroft Site 9433 Remediation Project

CLIENT NAME: SHARP FV

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-10-19

DATE REPORTED: 2016-10-20

		SAMPLE DESCRIPTION:		Floor 9 2.4m	Floor 12 3.2m
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		10/18/2016	10/18/2016
Parameter	Unit	G / S	RDL	7934720	7934721
Benzene	mg/kg		0.005	0.496	<0.005
Toluene	mg/kg		0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	0.17	<0.01
Xylenes	mg/kg		0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	10	32	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	31	<10
C10 - C16 (F2)	mg/kg	150	10	10	<10
C16 - C34 (F3)	mg/kg	1300	10	82	64
C34 - C50 (F4)	mg/kg	5600	10	47	36
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA
Moisture Content	%		N/A	23	23
Surrogate	Unit	Acceptable Limits			
Toluene-d8 (BTEX)	%	50-150		101	103
Ethylbenzene-d10 (BTEX)	%	50-150		125	119
o-Terphenyl (F2-F4)	%	50-150		102	97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7934720-7934721 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.

Certified By: Maureen Beattie

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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G149912

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Oct 20, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	556	7933782	< 0.005	< 0.005	NA	< 0.005	89%	80%	120%	94%	60%	140%	99%	60%	140%
Toluene	556	7933782	< 0.05	< 0.05	NA	< 0.05	93%	80%	120%	96%	60%	140%	101%	60%	140%
Ethylbenzene	556	7933782	< 0.01	< 0.01	NA	< 0.01	98%	80%	120%	98%	60%	140%	103%	60%	140%
Xylenes	556	7933782	< 0.05	< 0.05	NA	< 0.05	98%	80%	120%	99%	60%	140%	105%	60%	140%
C6 - C10 (F1)	556	7933782	< 10	< 10	NA	< 10	91%	70%	130%	89%	60%	140%	72%	60%	140%
C10 - C16 (F2)	3036	3782	< 10	14	NA	< 10	105%	80%	120%	101%	60%	140%	98%	60%	140%
C16 - C34 (F3)	3036	3782	2240	2880	25.0%	< 10	110%	80%	120%	99%	60%	140%	102%	60%	140%
C34 - C50 (F4)	3036	3782	1000	1330	28.3%	< 10	109%	80%	120%	98%	60%	140%	106%	60%	140%

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.

Certified By: Maureen Beattie

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Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G149912

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
P: 403.735.2005 • F: 403.735.2771
webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature: +1°C cc. 13°C
AGAT Job Number: 16G149912

Date and Time: OCT 19 -7 51

Report Information

Company: SHARP Env (2000) Ltd
Contact: Denise Bjornson
Address: Box 319
Fairview, AB T0H 1L0
Phone: 7808340111 Fax:
LSD: Rycroft Site 9433
Client Project #:

Report Information

1. Name: Denise Bjornson
   Email: dbjornson@sharp2000.com
2. Name:
   Email:
3. Name:
   Email:

Report Format

16

☐ Single Sample per Page
☑ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☐ 5 to 7 business days

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

Date Required:

RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. *SEE BACK FOR SURCHARGE.*

Invoice To

Same Yes / No

Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*

☐ 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	☐ AB Surface Water	

☐ Other
☐ D50 (Drilling) ☐ SPIGEC

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 ☐ HWS-B ☐ Cr^6 ☐ Hg	Water Metals ☐ Dissolved ☐ Total ☐ Hg ☐ Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
7934720	Floor 9 2.4m	Soil	Oct 18/16	Jar			✓											
4721	Floor 12 3.2m	↓	11	11			✓											

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Dennis Carol	Oct. 18/16 17:30	Corey Cuel	Oct. 19/16

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

Page 1 of 1

N°: AB 038801

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Sharp FV

Courier: N/A Prepaid Collect

Waybill# N/A

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: _____

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 Oct. 25, 2016

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) 12 + 13 + ___ = 13 °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: 16G149912

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: Samples were in drop-off shed.

* Subcontracted Analysis (See CPM)

Date issued: October 05, 2015
Document ID: SR-9505.003

APPENDIX 3

PETROLEUM HYDROCARBON GUIDELINES FOR RESIDENTIAL / PARKLAND AND COMMERCIAL LAND USE - TREATED MATERIAL

Company: 1834328 Alberta Ltd.

Location: Rycroft Site 9433, Lots 15-18, Block 2, Plan 3892CL, Rycroft, Alberta

Sample Location	Depth (m)	Distance from Well Casing	Particle Size (75 µm sieve)	Sample Date	Benzene	Toluene	Ethylbenzene	Xylenes	F1 (C6-C10)	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
AGAT WORK ORDER: 16G140194 - Treatment Pile #5												
Pile 5-1	Grab	>5m	fine	21-Sep-16	0.056	0.06	0.24	0.66	189	99	139	146
Pile 5-2	Grab	>5m	fine	21-Sep-16	0.038	0.07	0.13	0.66	159	94	256	244
Pile 5-3	Grab	>5m	fine	21-Sep-16	0.056	0.08	0.12	0.30	83	76	198	202
AGAT WORK ORDER: 16G136067 - Treatment Pile #4												
Pile 4-1	Grab	>5m	fine	9-Sep-16	0.023	<0.05	0.060	0.190	124	50	180	173
Pile 4-2	Grab	>5m	fine	9-Sep-16	0.011	<0.05	0.010	<0.05	<10	49	287	260
Pile 4-3	Grab	>5m	fine	9-Sep-16	0.014	<0.05	0.020	0.050	18	31	235	191
AGAT WORK ORDER: 16G127377 - Treatment Pile #3												
Pile 3-1	Grab	>5m	fine	17-Aug-16	0.024	<0.05	0.04	0.18	73	94	249	218
Pile 3-2	Grab	>5m	fine	17-Aug-16	0.026	0.05	0.11	0.42	157	95	307	251
Pile 3-3	Grab	>5m	fine	17-Aug-16	0.015	<0.05	0.02	<0.05	88	51	268	217
Pile 3-4	Grab	>5m	fine	17-Aug-16	0.017	<0.05	0.03	<0.05	76	44	328	266
AGAT WORK ORDER: 16G124021 - Treatment Pile #2												
Pile 2-1	Grab	>5m	fine	6-Aug-16	0.025	0.20	0.04	0.25	18	35	330	150
Pile 2-2	Grab	>5m	fine	6-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	20	336	167
Pile 2-3	Grab	>5m	fine	6-Aug-16	0.007	<0.05	<0.01	<0.05	<10	56	456	277
Pile 2-4	Grab	>5m	fine	6-Aug-16	<0.005	<0.05	<0.01	0.08	<10	38	249	172
Pile 2-5	Grab	>5m	fine	6-Aug-16	<0.005	<0.05	<0.01	<0.05	<10	17	187	101
AGAT WORK ORDER: 16G121799 - Treatment Pile #1												
Pile 1	Grab	>5m	fine	30-Jul-16	<0.005	<0.05	<0.01	<0.05	<10	75	662	416
Pile 2	Grab	>5m	fine	30-Jul-16	<0.005	<0.05	<0.01	<0.05	<10	52	540	330
Pile 3	Grab	>5m	fine	30-Jul-16	<0.005	<0.05	<0.01	<0.05	48	56	725	431
Pile 4	Grab	>5m	fine	30-Jul-16	0.016	0.12	1.08	13.7	508	154	766	479

Alberta Tier 2 Soil and Groundwater Remediation Guidelines, Government of Alberta, 2016

Residential/Parkland Land Use											
Fine Surface soil <3.0 m Depth			1.6*	110**	120**	65**	210**	150**	1300**	5600**	
Fine Subsoil >3.0 m Depth			1.6*	220**	240**	130**	420**	300**	2600**	10000^	
Commercial Land Use											
Fine Surface soil <3.0 m Depth			11*	330**	430**	230**	320**	260**	2500**	6600**	
Fine Subsoil >3.0 m Depth			11*	660**	860**	460**	640**	520**	4300***	10000^	

Surface Soil Criteria applies to a depth of 3.0m

Notes:

NS - Not Specified

- Indicates Red Flag Issue Identified (Value Exceeds Applicable Criteria)
- Indicates sample area material was re-treated and sampled.

* Human Exposure Pathway - Vapour Inhalation - Slab

** Ecological Pathway - Direct Soil Contact

*** Ecological Pathway - Off-site Migration

^ Management Limit

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http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G121799

TRACE ORGANICS REVIEWED BY: Erlina Erlina, Technical Reviewer

DATE REPORTED: Aug 05, 2016

PAGES (INCLUDING COVER): 8

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*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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Certificate of Analysis

AGAT WORK ORDER: 16G121799

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-07-30

DATE REPORTED: 2016-08-05

SAMPLE DESCRIPTION:				WWall 2a 0.5m	WWall 2a 1.5m	SWall 1a 0.5m	SWall 1a 1.5m	SWall 2a 0.5m	SWall 2a 1.5m	SWall 3a 0.75m	SWall 3a 1.5m
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016
Parameter	Unit	G / S	RDL	7744394	7744396	7744397	7744398	7744399	7744400	7744401	7744402
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	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	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	150	10	<10	12	<10	<10	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	1300	10	214	53	41	17	22	27	13	<10
C34 - C50 (F4)	mg/kg	5600	10	136	24	28	11	13	16	<10	<10
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		N/A	23	19	25	27	26	20	24	20
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	50-150		107	106	107	106	105	106	106	106
Ethylbenzene-d10 (BTEX)	%	50-150		107	100	110	114	106	118	117	114
o-Terphenyl (F2-F4)	%	50-150		112	109	107	105	109	110	109	107

Certified By: Evelina

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 16G121799

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-07-30

DATE REPORTED: 2016-08-05

SAMPLE DESCRIPTION:				SWall 4a 0.75m	SWall 4a 1.5m	Floor 2.2 m	Pile 1	Pile 2	Pile 3	Pile 4
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016	7/30/2016
Parameter	Unit	G / S	RDL	7744403	7744404	7744405	7744406	7744407	7744408	7744409
Benzene	mg/kg		0.005	0.093	0.517	<0.005	<0.005	<0.005	0.005	0.016
Toluene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12
Ethylbenzene	mg/kg		0.01	0.51	0.02	<0.01	<0.01	<0.01	<0.01	1.08
Xylenes	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	13.7
C6 - C10 (F1)	mg/kg	210	10	18	<10	<10	<10	<10	48	508
C6 - C10 (F1 minus BTEX)	mg/kg		10	18	<10	<10	<10	<10	48	493
C10 - C16 (F2)	mg/kg	150	10	12	<10	<10	75	52	56	154
C16 - C34 (F3)	mg/kg	1300	10	<10	14	66	662	540	725	766
C34 - C50 (F4)	mg/kg	5600	10	<10	<10	33	416	330	431	479
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	1910	NA	1910	1480
Moisture Content	%		N/A	23	21	24	16	16	16	19
Surrogate	Unit	Acceptable Limits								
Toluene-d8 (BTEX)	%	50-150		107	105	107	107	106	106	108
Ethylbenzene-d10 (BTEX)	%	50-150		105	101	109	105	102	100	117
o-Terphenyl (F2-F4)	%	50-150		107	104	108	105	103	104	107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7744394-7744409 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.

Certified By: Evelina

AGAT Laboratories

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TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G121799

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Aug 05, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	491	7744394	< 0.005	< 0.005	NA	< 0.005	104%	80%	120%	81%	60%	140%	94%	60%	140%
Toluene	491	7744394	< 0.05	< 0.05	NA	< 0.05	114%	80%	120%	86%	60%	140%	100%	60%	140%
Ethylbenzene	491	7744394	< 0.01	< 0.01	NA	< 0.01	118%	80%	120%	82%	60%	140%	96%	60%	140%
Xylenes	491	7744394	0.12	0.09	NA	< 0.05	118%	80%	120%	87%	60%	140%	98%	60%	140%
C6 - C10 (F1)	491	7744394	< 10	< 10	NA	< 10	103%	70%	130%	77%	60%	140%	84%	60%	140%
C10 - C16 (F2)	2971	7744394	< 10	< 10	NA	< 10	95%	80%	120%	122%	60%	140%	123%	60%	140%
C16 - C34 (F3)	2971	7744394	214	209	2.4%	< 10	97%	80%	120%	124%	60%	140%	127%	60%	140%
C34 - C50 (F4)	2971	7744394	125	136	8.4%	< 10	98%	80%	120%	120%	60%	140%	121%	60%	140%

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.

Certified By: Erlina

AGAT Laboratories

10203B 123 STREET
GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G121799

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
P: 403.735.2005 • F: 403.735.2771
webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature:
AGAT Job Number: 16g121799
Date and Time:

Report Information
Company: SHARP Env (2000) Ltd.
Contact: Denise Bjornson
Address: Box 319 Fairview
Phone: 7808340111 Fax:
LSD: Rycroft Site 9433
Client Project #:

Report Information
1. Name: Denise Bjornson
Email: Dbjornson@sharp2000.com
2. Name:
Email:
3. Name:
Email:

Report Format
☐ Single Sample per Page
☒ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☒ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required:
RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To Same? Yes / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*
☐ CCME: ☐ Agricultural ☐ Industrial ☐ Residential/Park ☐ Commercial ☐ Drinking Water ☐ FWAL
☐ AB Tier 1: ☐ Agricultural ☐ Industrial ☐ Residential/Park ☒ Commercial ☐ Natural Area
☐ AB Surface Water
☐ BC CSR: ☐ AW ☐ IW ☐ LW ☐ DW
☐ Other: ☐ D50 (Drilling) ☐ SPIGEC

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 ☐ HWS-B ☐ Cr^6 ☐ Hg	Water Metals ☐ Dissolved ☐ Total ☐ Hg ☐ Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	'16 JUL 30 13:37	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
394	W Wall 2a 0.5m	Soil	July 30/16	Jar	1		✓												N
396	" 1.5m						✓												
397	S wall 1a 0.5m						✓												
398	" 1.5m						✓												
399	S wall 2a 0.75m						✓												
400	" 1.5m						✓												
401	S wall 3a 0.75m						✓												
402	" 1.5m						✓												
403	S wall 4a 0.75m						✓												
404	" 1.5m						✓												
405	Floor 2.2m						✓												Y

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Denise Bjornson	July 30/16 1:30	Amanda Cruickshank	1:37pm

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 2

N°: AB 033634

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

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Calgary, Alberta T2E 7P7
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webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature: _____
AGAT Job Number: _____
Date and Time: _____

Report Information
Company: SHARP
Contact: _____
Address: _____
Phone: _____ Fax: _____
LSD: Rycroft Site 9433
Client Project #: _____

Report Information
1. Name: Denise Bjornson.
Email: _____
2. Name: _____
Email: _____
3. Name: _____
Email: _____

Report Format
☐ Single Sample per Page
☒ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☒ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required: _____

RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. *SEE BACK FOR SURCHARGE.*

Invoice To Same Yes / No
Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/AFE#: _____

Requirements *(Selection may impact detection limits)*
☐ 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 ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

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 ☐ HWS-B ☐ Cr^6 ☐ Hg	Water Metals ☐ Dissolved ☐ Total ☐ Hg ☐ Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	1,3 - dimethylbenzene	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
406	Pile 1	Soil	July 30/16	Jar	1		✓												N
407	Pile 2	↓	↓	↓	↓		✓												↓
408	Pile 3						✓												
409	Pile 4						✓												↓

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Denise Bjornson	July 30/16; 1:30	Amanda Cruickshank	1:37 pm
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 2 of 2

N°: AB 033635

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: SHARP ENV

Courier: _____ Prepaid Collect

Waybill#_____

Branch: EDM (CP) 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: _____

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 6-AUG-16

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)22+21+22=22 °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: 16G121799

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)

Date issued: October 05, 2015
Document ID: SR-9505.003

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: DENISE BJORNSON

PROJECT: Rycroft Site 9433 Remediation Project

AGAT WORK ORDER: 16G124021

TRACE ORGANICS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

DATE REPORTED: Aug 15, 2016

PAGES (INCLUDING COVER): 6

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*NOTES

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

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 16G124021

PROJECT: Rycroft Site 9433 Remediation Project

CLIENT NAME: SHARP FV

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-08-06

DATE REPORTED: 2016-08-15

		SAMPLE DESCRIPTION:		Pile 2 - 1	Pile 2 - 2	Pile 2 - 3	Pile 2 - 4	Pile 2 - 5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		8/6/2016	8/6/2016	8/6/2016	8/6/2016	8/6/2016
Parameter	Unit	G / S	RDL	7757285	7757288	7757289	7757290	7757291
Benzene	mg/kg		0.005	0.025	<0.005	0.007	<0.005	<0.005
Toluene	mg/kg		0.05	0.20	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	0.04	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg		0.05	0.25	<0.05	<0.05	0.08	<0.05
C6 - C10 (F1)	mg/kg	210	10	18	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	18	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	150	10	35	20	56	38	17
C16 - C34 (F3)	mg/kg	1300	10	330	336	456	249	187
C34 - C50 (F4)	mg/kg	5600	10	150	167	277	172	101
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA	NA
Moisture Content	%		N/A	19	20	19	19	20
Surrogate	Unit	Acceptable Limits						
Toluene-d8 (BTEX)	%	50-150		104	106	106	106	107
Ethylbenzene-d10 (BTEX)	%	50-150		101	106	106	107	107
o-Terphenyl (F2-F4)	%	50-150		116	115	114	103	108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7757285-7757291 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.

Certified By: Maureen Beattie

AGAT Laboratories

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CANADA T8V 8B7
TEL (780)402-2050
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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G124021

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Aug 15, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	496	7757285	< 0.005	0.025	NA	< 0.005	101%	80%	120%	87%	60%	140%	93%	60%	140%
Toluene	496	7757285	<0.05	0.20	NA	< 0.05	112%	80%	120%	93%	60%	140%	99%	60%	140%
Ethylbenzene	496	7757285	0.01	0.04	NA	< 0.01	118%	80%	120%	90%	60%	140%	96%	60%	140%
Xylenes	496	7757285	< 0.05	0.25	NA	< 0.05	118%	80%	120%	92%	60%	140%	97%	60%	140%
C6 - C10 (F1)	496	7757285	22	18	NA	< 10	107%	70%	130%	82%	60%	140%	86%	60%	140%
C10 - C16 (F2)	2976	7285	35	27	NA	< 10	104%	80%	120%	121%	60%	140%	113%	60%	140%
C16 - C34 (F3)	2976	7285	330	255	25.6%	< 10	106%	80%	120%	127%	60%	140%	115%	60%	140%
C34 - C50 (F4)	2976	7285	150	125	18.2%	< 10	98%	80%	120%	116%	60%	140%	103%	60%	140%

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.

Certified By: Maureen Beattie

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Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G124021

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
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C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

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Calgary, Alberta T2E 7P7
P: 403.735.2005 • F: 403.735.2771
webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature: 19°c
AGAT Job Number: 166124021
Date and Time:

Report Information
Company: SHARP Environmental
Contact: Denise Bjornson
Address:
Phone: 780-835-4646 Fax:
LSD: Rycroft site 9433
Client Project #:

Report Information
1. Name: Denise Bjornson
Email: dbjornson@sharp2000.com
2. Name:
Email:
3. Name:
Email:

Report Format
☐ Single Sample per Page
☑ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☑ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required:
RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To Same Yes / No
Company: Quoted Project
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*
☐ 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 ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

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 ☐ HWS-B ☐ Cr^6 ☐ Hg	Water Metals ☐ Dissolved ☐ Total ☐ Hg ☐ Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
7157235	Pile 2 - 1	Soil	Aug. 6/16, 8:10am				✓											
7238	Pile 2 - 2	↓	↓, 8:15am				✓											
7239	Pile 2 - 3		, 8:20am				✓											
7240	Pile 2 - 4		, 8:30am				✓											
7241	Pile 2 - 5	↓	↓, 8:40am				✓											

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Mark Kazibwe, Mark Kazibwe		Corey Cuel Corey Cuel	Aug. 06/16 9:43 am
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 1 of 1

N°: AB 033665

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Sharp EV

Courier: N/A Prepaid Collect

Waybill# N/A

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: _____

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 Aug. 13, 2016 (BTEX/F1)

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) 19 + 19 + 19 = 19 °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: 1661249021

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)

Date issued: October 05, 2015
Document ID: SR-9505.003

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G127377

TRACE ORGANICS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

DATE REPORTED: Aug 19, 2016

PAGES (INCLUDING COVER): 6

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*NOTES

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

AGAT Laboratories

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FAX (780)402-2078
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 16G127377

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-08-17

DATE REPORTED: 2016-08-19

SAMPLE DESCRIPTION:				Pile 3-1 Grab	Pile 3-2 Grab	Pile 3-3 Grab	Pile 3-4 Grab
SAMPLE TYPE:				Soil	Soil	Soil	Soil
DATE SAMPLED:				8/17/2016	8/17/2016	8/17/2016	8/17/2016
Parameter	Unit	G / S	RDL	7777992	7777993	7777994	7777995
Benzene	mg/kg		0.005	0.024	0.026	0.015	0.017
Toluene	mg/kg		0.05	<0.05	0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	0.04	0.11	0.02	0.03
Xylenes	mg/kg		0.05	0.18	0.42	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	10	73	157	88	76
C6 - C10 (F1 minus BTEX)	mg/kg		10	73	156	88	76
C10 - C16 (F2)	mg/kg	150	10	94	95	51	44
C16 - C34 (F3)	mg/kg	1300	10	249	307	268	328
C34 - C50 (F4)	mg/kg	5600	10	218	251	217	266
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA	NA
Moisture Content	%		N/A	18	18	14	16
Surrogate	Unit	Acceptable Limits					
Toluene-d8 (BTEX)	%	50-150		102	99	100	102
Ethylbenzene-d10 (BTEX)	%	50-150		119	118	115	118
o-Terphenyl (F2-F4)	%	50-150		118	112	118	115

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7777992-7777995 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.

Certified By: Maureen Beattie

AGAT Laboratories

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TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G127377

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Aug 19, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	504	6991	< 0.005	< 0.005	NA	< 0.005	90%	80%	120%	88%	60%	140%	93%	60%	140%
Toluene	504	6991	< 0.05	< 0.05	NA	< 0.05	89%	80%	120%	82%	60%	140%	87%	60%	140%
Ethylbenzene	504	6991	< 0.01	< 0.01	NA	< 0.01	89%	80%	120%	77%	60%	140%	80%	60%	140%
Xylenes	504	6991	< 0.05	< 0.05	NA	< 0.05	88%	80%	120%	77%	60%	140%	81%	60%	140%
C6 - C10 (F1)	504	6991	< 10	< 10	NA	< 10	110%	70%	130%	84%	60%	140%	94%	60%	140%
C10 - C16 (F2)	2984	6991	< 10	< 10	NA	< 10	112%	80%	120%	128%	60%	140%	133%	60%	140%
C16 - C34 (F3)	2984	6991	29	36	NA	< 10	112%	80%	120%	97%	60%	140%	100%	60%	140%
C34 - C50 (F4)	2984	6991	21	29	NA	< 10	113%	80%	120%	125%	60%	140%	133%	60%	140%

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.

Certified By: Maureen Beattie

AGAT Laboratories

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FAX (780)402-2078
http://www.agatlabs.com

Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G127377

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories

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webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature:
AGAT Job Number: 1664127377
Date and Time:

Report Information
Company: SHARP ENV (2000) Ltd
Contact: Denise Bjornson
Address: Box 389
FV, AB
Phone: 780 8340111 Fax:
LSD: Rycroft Sec 9433
Client Project #:

Report Information
1. Name: Denise Bjornson
Email: dbjornson@sharp2000.com
2. Name:
Email:
3. Name:
Email:

*16 AUG 17 11 42

Report Format
☑ Single Sample per Page
☒ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☐ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☒ 48 to 72 hours
Date Required:

RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. *SEE BACK FOR SURCHARGE.*

Invoice To Same Yes / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*
☐ CCME ☐ Agricultural ☐ Industrial ☐ Residential/Park ☐ Commercial ☐ Drinking Water ☐ FWAL
☐ AB Tier 1 ☐ Agricultural ☐ Industrial ☒ Residential/Park ☐ Commercial ☐ Natural Area ☐ AB Surface Water
☐ BC CSR ☐ AW ☐ IW ☐ LW ☐ DW
☐ Other ☐ D50 (Drilling) ☐ SPIGEC

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT
992	Pile 3-1 Grab	Soil	Aug 17/16 10:40	Jar
993	Pile 3-2 Grab	↓	↓	↓
994	Pile 3-3 Grab			
995	Pile 3-4 Grab			

# OF CONTAINERS	Detailed Soil Salinity (Saturated Paste)	CCME BTEX/F1-F4	Soil Metals ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
		✓											
		✓											
		✓											
		✓											

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Denise Bjornson	Aug 17/16: 1136	17-AUG-16	
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 1 of 1

N°: AB 033722

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Sharp FV

Courier: _____ 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: _____

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 24-Aug-16

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)20+20+19=20°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: 16G127377

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)

Date issued: October 05, 2015
Document ID: SR-9505 003

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G136067

TRACE ORGANICS REVIEWED BY: Natasha Arsenault, Project Manager, Environmental

DATE REPORTED: Sep 12, 2016

PAGES (INCLUDING COVER): 7

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*NOTES

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

AGAT Laboratories

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FAX (780)402-2078
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Certificate of Analysis

AGAT WORK ORDER: 16G136067

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-09-09

DATE REPORTED: 2016-09-12

		SAMPLE DESCRIPTION:		Pile 4-1 Grab	Pile 4-2 Grab	Pile 4-3 Grab
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		9/9/2016	9/9/2016	9/9/2016
Parameter	Unit	G / S	RDL	7835224	7835225	7835226
Benzene	mg/kg		0.005	0.023	0.011	0.014
Toluene	mg/kg		0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	0.06	0.01	0.02
Xylenes	mg/kg		0.05	0.19	<0.05	0.05
C6 - C10 (F1)	mg/kg	210	10	124	<10	18
C6 - C10 (F1 minus BTEX)	mg/kg		10	124	<10	18
C10 - C16 (F2)	mg/kg	150	10	50	49	31
C16 - C34 (F3)	mg/kg	1300	10	180	287	235
C34 - C50 (F4)	mg/kg	5600	10	173	260	191
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA
Moisture Content	%		N/A	20	21	22
Surrogate	Unit	Acceptable Limits				
Toluene-d8 (BTEX)	%	50-150		99	102	102
Ethylbenzene-d10 (BTEX)	%	50-150		118	115	120
o-Terphenyl (F2-F4)	%	50-150		107	105	104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7835224-7835226 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.

Certified By: Natasha Ausenault

AGAT Laboratories

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CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G136067

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Sep 12, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	524	5224	0.023	0.022	NA	< 0.005	102%	80%	120%	97%	60%	140%	106%	60%	140%
Toluene	524	5224	< 0.05	< 0.05	NA	< 0.05	101%	80%	120%	93%	60%	140%	102%	60%	140%
Ethylbenzene	524	5224	0.06	0.04	NA	< 0.01	103%	80%	120%	92%	60%	140%	101%	60%	140%
Xylenes	524	5224	0.19	0.14	NA	< 0.05	102%	80%	120%	92%	60%	140%	100%	60%	140%
C6 - C10 (F1)	524	5224	124	87	35.1%	< 10	103%	70%	130%	68%	60%	140%	86%	60%	140%
C10 - C16 (F2)	3004	5224	50	36	NA	< 10	105%	80%	120%	98%	60%	140%	98%	60%	140%
C16 - C34 (F3)	3004	5224	180	132	30.8%	< 10	106%	80%	120%	98%	60%	140%	95%	60%	140%
C34 - C50 (F4)	3004	5224	173	120	36.2%	< 10	108%	80%	120%	94%	60%	140%	85%	60%	140%

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.

Certified By: Natasha Ausenault

AGAT Laboratories

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TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G136067

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
P: 403.735.2005 • F: 403.735.2771
webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only

Arrival Temperature:

AGAT Job Number: 1669136067

Date and Time: '16 SEP -9 14 :27

Report Information

Company: SHAW ENVIRONMENTAL

Contact: DENISE

Address:

Phone: Fax:

LSD:

Client Project #:

Invoice To

Same Yes / No

Company:

Contact:

Address:

Phone: Fax:

PO/AFE#:

Report Information

1. Name:
   Email:
2. Name:
   Email:
3. Name:
   Email:

Report Format

☐ Single Sample per Page

☐ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☐ 5 to 7 business days

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

Date Required:

RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. *SEE BACK FOR SURCHARGE.*

Requirements *(Selection may impact detection limits)*

☐ **CCME**
- ☐ Agricultural
- ☐ Industrial
- ☐ Residential/Park
- ☐ Commercial
- ☐ Drinking Water
- ☐ FWAL

☐ **AB Tier 1**
- ☐ Agricultural
- ☐ Industrial
- ☐ Residential/Park
- ☐ Commercial
- ☐ Natural Area

☐ **AB Surface Water**

☐ **BC CSR**
- ☐ AW
- ☐ IW
- ☐ LW
- ☐ DW

☐ **Other**
- ☐ D50 (Drilling)
- ☐ SPIGEC

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** ☐HWS-B ☐Cr^6 ☐Hg	**Water Metals** ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐							HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
		Colen Cuvi	Sept. 9/16
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 1 of 1

N°: AB 033845

Document ID: DIC-50-1507-003

Date Revised: December 9th, 201

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Grande Prairie, Alberta
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P: 780.402.2050 • F: 780.402.2078 • TF: 866.764.7554

Chain of Custody Record

Laboratory Use Only

Arrival Temperature:

AGAT Job Number: 16g136067

Notes:

Report Information

Company: SHARP Environmental (2000) Ltd.
Contact: Denise Bjornson
Address: Box 319 Fairview, AB

Phone: 780-834-0111 Fax:
LSD: Rycroft Site 9433
Client Project #:

Report Information

1. Name: Denise Bjornson
   Email: dbjornson@sharp2000.com
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
24 to 48 hours ☐
48 to 72 hours ☑

Date Required:

Invoice To

Same Yes ☑ / No ☐

Company:
Contact:
Address:

Phone: Fax:
PO/AFE#: Quoted

Requirements (Check one)

☐ **Alberta Tier 1**

- ☐ Agricultural
- ☐ Commercial
- ☐ Natural Area
- ☑ Res/Park
- ☐ Industrial
- ☐ FWAL
- ☐ D50 (Drilling)
- ☐ CCME
- ☐ BC CSR
- ☐ Other: Soil

Notes:

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	# OF CONTAINERS	Microtox	Detailed Salinity: D-50 - As Received	Detailed Salinity: ☐AB ☐BC	AB Hydrocarbons: BTEX/F1 - F4	BC Hydrocarbons: BTEXS/VPH/LEPH/HEPH (PAH)	BC Hydrocarbons: BTEXS/VPH/EPH	Metals/HWS-B/Cr_{6+} in Soil: ☐AB ☐BC	Metals in Water: ☐Dissolved ☐Total	AB Class II Landfill	BC Landfill (specify):	HOLD FOR 60 DAYS (NO ANALYSIS)	CONTAMINATED/HAZARDOUS (Y/N)
224	Pile 4-1 Grab	Soil	09/09/2016	Jar					✓								n
225	Pile 4-2 Grab	Soil	09/09/2016	Jar					✓								n
226	Pile 4-3 Grab	Soil	09/09/2016	Jar					✓								n
			09/09/2016	Jar					✓								n
			09/09/2016														
			09/09/2016														
			09/09/2016														
			09/09/2016														
			09/09/2016														
			09/09/2016														
			09/09/2016														

Samples Relinquished By (Print Name and Sign)	Date/Time	Samples Received By (Print Name and Sign)	Date/Time
Denise Bjornson	09/09/201		09/09/201

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

Page 1 of 1

N°:

Document #: DAV-81-1500.001

Date Revised: November 26, 2

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Sharp

Courier: _____ 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: _____

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 16 Sep-16

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) 19+19+19= 19 °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: 16 136067

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: Client Submitted Analysis on COC via Email

* Subcontracted Analysis (See CPM)

Date issued: October 05, 2015

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CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433

AGAT WORK ORDER: 16G140194

SOIL ANALYSIS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

TRACE ORGANICS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

DATE REPORTED: Sep 27, 2016

PAGES (INCLUDING COVER): 9

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*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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Certificate of Analysis

AGAT WORK ORDER: 16G140194

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Class II Landfill - Inorganics

DATE RECEIVED: 2016-09-22

DATE REPORTED: 2016-09-27

		SAMPLE DESCRIPTION:		Pile Liner Grab
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		9/21/2016
Parameter	Unit	G / S	RDL	7865617
pH 1:1 Water:Soil Extraction	pH Units	2.0-12.5	0.02	7.66
Free Liquid	Pos/Neg	Neg	N/A	Neg
Antimony - Leachate	mg/L	500	0.5	<0.5
Arsenic - Leachate	mg/L	5.00	0.5	<0.5
Barium - Leachate	mg/L	100	0.5	0.7
Beryllium - Leachate	mg/L	5.0	0.5	<0.5
Boron - Leachate	mg/L	500	0.5	0.7
Cadmium - Leachate	mg/L	1.00	0.5	<0.5
Chromium - Leachate	mg/L	5.00	0.5	<0.5
Cobalt - Leachate	mg/L	100	0.5	<0.5
Copper - Leachate	mg/L	100	0.5	<0.5
Iron - Leachate	mg/L	1000	0.5	1.9
Lead - Leachate	mg/L	5.00	0.5	<0.5
Mercury - Leachate	mg/L	0.200	0.1	<0.1
Nickel - Leachate	mg/L	5.00	0.5	<0.5
Selenium - Leachate	mg/L	1.00	0.5	<0.5
Silver - Leachate	mg/L	5.00	0.5	<0.5
Thallium - Leachate	mg/L	5.00	0.5	<0.5
Uranium - Leachate	mg/L	2.00	0.5	<0.5
Vanadium - Leachate	mg/L	100	0.5	<0.5
Zinc - Leachate	mg/L	500	1	<1
Zirconium - Leachate	mg/L	500	0.5	<0.5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Class 2 Landfill

7865617 Analysis based on "as received"

Certified By: Maureen Beattie

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Certificate of Analysis

AGAT WORK ORDER: 16G140194

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Class II Landfill - Volatiles

DATE RECEIVED: 2016-09-22

DATE REPORTED: 2016-09-27

		SAMPLE DESCRIPTION:		Pile Liner Grab
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		9/21/2016
Parameter	Unit	G / S	RDL	7865617
Flash point (Closed Cup)	Deg C	61.0 -		>100
Benzene - Leachate	mg/L	0.5	0.005	<0.005
Toluene - Leachate	mg/L	0.5	0.005	<0.005
Ethylbenzene - Leachate	mg/L	0.5	0.005	0.005
Xylenes - Leachate	mg/L	0.5	0.005	0.026
Surrogate	Unit	Acceptable Limits		
Toluene-d8 (BTEX)	%	50-150		98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Class 2 Landfill

7865617 Flashpoint corrected to Sea Level.
Zero Headspace Extraction for Leachable BTEX.

Certified By: Maureen Beattie

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Certificate of Analysis

AGAT WORK ORDER: 16G140194

PROJECT: Rycroft Site 9433

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-09-22

DATE REPORTED: 2016-09-27

		SAMPLE DESCRIPTION:		Pile 5-1 Grab	Pile 5-2 Grab	Pile 5-3 Grab
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		9/21/2016	9/21/2016	9/21/2016
Parameter	Unit	G / S	RDL	7865604	7865612	7865614
Benzene	mg/kg		0.005	0.056	0.038	0.056
Toluene	mg/kg		0.05	0.06	0.07	0.08
Ethylbenzene	mg/kg		0.01	0.24	0.13	0.12
Xylenes	mg/kg		0.05	0.66	0.66	0.30
C6 - C10 (F1)	mg/kg	210	10	189	159	83
C6 - C10 (F1 minus BTEX)	mg/kg		10	188	158	83
C10 - C16 (F2)	mg/kg	150	10	99	94	76
C16 - C34 (F3)	mg/kg	1300	10	139	256	198
C34 - C50 (F4)	mg/kg	5600	10	146	244	202
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA	NA
Moisture Content	%		N/A	16	21	21
Surrogate	Unit	Acceptable Limits				
Toluene-d8 (BTEX)	%	50-150		99	101	100
Ethylbenzene-d10 (BTEX)	%	50-150		119	123	122
o-Terphenyl (F2-F4)	%	50-150		104	111	108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

7865604-7865614 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.

Certified By: Maureen Beattie

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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G140194

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Sep 27, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Class II Landfill - Inorganics															
pH 1:1 Water:Soil Extraction	695	7865617	7.66	7.66	0.0%	< 0.02	99%	90%	110%						
Free Liquid	695	7865617	Neg	Neg	0.0%	N/A									
Antimony - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	93%	80%	120%				94%	75%	125%
Arsenic - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	89%	80%	120%				98%	75%	125%
Barium - Leachate	3488	7865617	0.6	0.7	NA	< 0.5	90%	80%	120%				98%	75%	125%
Beryllium - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	92%	80%	120%				97%	75%	125%
Boron - Leachate	3488	7865617	0.7	<0.5	NA	< 0.5	95%	80%	120%				99%	75%	125%
Cadmium - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	94%	80%	120%				106%	75%	125%
Chromium - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	91%	80%	120%				93%	75%	125%
Cobalt - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	93%	80%	120%				92%	75%	125%
Copper - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	86%	80%	120%				99%	75%	125%
Iron - Leachate	3488	7865617	1.5	1.9	NA	< 0.5	95%	80%	120%				96%	75%	125%
Lead - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	91%	80%	120%				82%	75%	125%
Mercury - Leachate	3488	7865617	<0.1	<0.1	NA	< 0.1	102%	80%	120%				97%	75%	125%
Nickel - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	92%	80%	120%				90%	75%	125%
Selenium - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	85%	80%	120%				116%	75%	125%
Silver - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	86%	80%	120%				98%	75%	125%
Thallium - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	98%	80%	120%				90%	75%	125%
Uranium - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	92%	80%	120%				94%	75%	125%
Vanadium - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	91%	80%	120%				95%	75%	125%
Zinc - Leachate	3488	7865617	<1	<1	NA	< 1	92%	80%	120%				94%	75%	125%
Zirconium - Leachate	3488	7865617	<0.5	<0.5	NA	< 0.5	97%	80%	120%				97%	75%	125%

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.

Certified By: Maureen Beattie

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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G140194

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Sep 27, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	534	7865641	0.020	0.022	NA	< 0.005	100%	80%	120%	102%	60%	140%	101%	60%	140%
Toluene	534	7865641	< 0.05	< 0.05	NA	< 0.05	103%	80%	120%	101%	60%	140%	101%	60%	140%
Ethylbenzene	534	7865641	0.02	0.01	NA	< 0.01	112%	80%	120%	103%	60%	140%	106%	60%	140%
Xylenes	534	7865641	< 0.05	< 0.05	NA	< 0.05	113%	80%	120%	103%	60%	140%	107%	60%	140%
C6 - C10 (F1)	534	7865641	< 10	< 10	NA	< 10	112%	70%	130%	118%	60%	140%	113%	60%	140%
C10 - C16 (F2)	3014	7865641	< 10	< 10	NA	< 10	110%	80%	120%	105%	60%	140%	102%	60%	140%
C16 - C34 (F3)	3014	7865641	17	21	NA	< 10	115%	80%	120%	103%	60%	140%	102%	60%	140%
C34 - C50 (F4)	3014	7865641	12	15	NA	< 10	112%	80%	120%	100%	60%	140%	99%	60%	140%

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.

Class II Landfill - Volatiles															
Flash point (Closed Cup)	695	Butanol	32	33	3.1%	<	110%	80%	120%						
Benzene - Leachate	330	5617	< 0.005	< 0.005	NA	< 0.005	107%	80%	120%	106%	70%	130%	108%	70%	130%
Toluene - Leachate	330	5617	< 0.005	< 0.005	NA	< 0.005	111%	80%	120%	107%	70%	130%	109%	70%	130%
Ethylbenzene - Leachate	330	5617	< 0.005	0.005	NA	< 0.005	110%	80%	120%	105%	70%	130%	106%	70%	130%
Xylenes - Leachate	330	5617	< 0.005	0.026	NA	< 0.005	112%	80%	120%	105%	70%	130%	107%	70%	130%

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.

Certified By: Maureen Beattie

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Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G140194

PROJECT: Rycroft Site 9433

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
pH 1:1 Water:Soil Extraction	GSL-0420	HENDERSHOT 2007	pH METER
Free Liquid	GSL-0580	EPA SW- 846-9095B	PAINT FILTER TEST
Antimony - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Arsenic - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Barium - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Beryllium - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Boron - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Cadmium - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Chromium - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Cobalt - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Copper - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Iron - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Lead - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Mercury - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Nickel - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Selenium - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Silver - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Thallium - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Uranium - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Vanadium - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Zinc - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Zirconium - Leachate	GIN-0140 & GSL-0420	In-House Leachate; EATON 2005	ICP/OES
Trace Organics Analysis			
Flash point (Closed Cup)	GTO-2210	ASTM D93-02A	PENSKY-MARTENS CLOSED CUP
Benzene - Leachate	GTO-0050	In-House Leachate	GC/MS
Toluene - Leachate	GTO-0050	In-House Leachate	GC/MS
Ethylbenzene - Leachate	GTO-0050	In-House Leachate	GC/MS
Xylenes - Leachate	GTO-0050	In-House Leachate	GC / MS
Toluene-d8 (BTEX)	GTO-0050	In-House Leachate	GC/MS
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
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webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature: 10°C
AGAT Job Number: 166140194
Date and Time: 16 SEP 22 -8 :11

Report Information
Company: SHARP Env (2000) Ltd.
Contact: Denise Bjornson
Address: Box 319
Fairview, AB T0H 1L0
Phone: 780 8340111 Fax:
LSD: 7
Client Project #: Rycroft Site 9433

Report Information
1. Name: Denise Bjornson
Email: dbjornson@sharp2000.com
2. Name:
Email:
3. Name:
Email:

Report Format
☐ Single Sample per Page
☑ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☒ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required:
RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To Same (Yes) / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#: Quote 143293DN

Requirements *(Selection may impact detection limits)*
☐ CCME ☐ Agricultural ☐ Industrial ☐ Residential/Park ☐ Commercial ☐ Drinking Water ☐ FWAL
☐ AB Tier 1 ☐ Agricultural ☐ Industrial ☒ Residential/Park ☐ Commercial ☐ Natural Area ☐ AB Surface Water
☐ BC CSR ☐ AW ☐ IW ☐ LW ☐ DW
☐ Other ☐ D50 (Drilling) ☐ SPIGEC

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 ☐HWS-B ☐ Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐ Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
7865604	Pile 5-1 Grab	Soil	Sept 21/16	Jar	1		✓											
5612	Pile 5-2 Grab	↓	↓	↓	1		✓											
5614	Pile 5-3 Grab	↓	↓	↓	1		✓											
5																		
5619	Pile Liner Grab	Soil	Sept 21/16	Jar / Bag	2						✓							

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Shailene Trudel	Sept 21, 2016	6:42 pm Corey Cuel Corey Cuel	Sept. 22/16

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

Page 1 of 1

N°: AB 077314

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Sharp FV

Courier: N/A Prepaid Collect

Waybill#: N/A

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: S

Hydrocarbons: Earliest Expiry Sept. 28, 2016

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 + 9 + 11 = 10 °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: 16G140194

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)

Date issued: October 05, 2015
Document ID: SR-9505.003

APPENDIX 4

AGAT Laboratories

10203B 123 STREET
GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

CLIENT NAME: SECURE ENERGY(ENVIRO SERVICES)INC
#120, 8832 BLACKFOOT TRAIL SE
CALGARY, AB T2J3J1
(403) 264-1588

ATTENTION TO: Jason Smith

PROJECT: 01-15-078-26W5M

AGAT WORK ORDER: 16G160055

SOIL ANALYSIS REVIEWED BY: Natasha Arsenault, Project Manager, Environmental

TRACE ORGANICS REVIEWED BY: Natasha Arsenault, Project Manager, Environmental

DATE REPORTED: Nov 15, 2016

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*NOTES

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

AGAT Laboratories

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CANADA T8V 8B7
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FAX (780)402-2078
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 16G160055

PROJECT: 01-15-078-26W5M

CLIENT NAME: SECURE ENERGY(ENVIRO SERVICES)INC

ATTENTION TO: Jason Smith

SAMPLING SITE:

SAMPLED BY:

CCME / Alberta Tier 1 Metals (Extended Package (Soluble B), Soil) - GP

DATE RECEIVED: 2016-11-14

DATE REPORTED: 2016-11-15

SAMPLE DESCRIPTION:				S1-15 01-15-078-26W5M	N1-15 01-15-078-26W5M
SAMPLE TYPE:				Soil	Soil
DATE SAMPLED:				2016-11-14	2016-11-14
Parameter	Unit	G / S	RDL	8012482	8012490
Antimony	mg/kg	20	0.5	1.7	2.6
Arsenic	mg/kg	17	0.5	16.1	60.7
Barium	mg/kg	750	0.5	210	368
Beryllium	mg/kg	4	0.5	0.9	1.4
Boron, Soluble	mg/L		0.5	<0.5	0.6
Cadmium	mg/kg	1.4	0.5	0.7	1.3
Chromium	mg/kg	64	0.5	20.7	64.5
Chromium, Hexavalent	mg/kg	0.4	0.3	<0.3	<0.3
Cobalt	mg/kg	40	0.5	10.0	16.0
Copper	mg/kg	63	0.5	22.7	14.6
Lead	mg/kg	70	0.5	18.6	25.7
Mercury	mg/kg	6.6	0.5	<0.5	<0.5
Molybdenum	mg/kg	5	0.5	4.3	3.4
Nickel	mg/kg	50	0.5	23.0	32.4
Selenium	mg/kg	1	0.5	0.8	0.7
Silver	mg/kg	20	0.5	<0.5	<0.5
Thallium	mg/kg	1	0.5	<0.5	<0.5
Tin	mg/kg	5	0.5	0.8	1.1
Uranium	mg/kg	23	0.5	1.6	3.3
Vanadium	mg/kg	130	0.5	50.9	375
Zinc	mg/kg	200	1	82	209

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

8012482-8012490 Results are based on the dry weight of the sample.

Certified By: Natasha Ausenault

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Certificate of Analysis

AGAT WORK ORDER: 16G160055

PROJECT: 01-15-078-26W5M

CLIENT NAME: SECURE ENERGY(ENVIRO SERVICES)INC

ATTENTION TO: Jason Smith

SAMPLING SITE:

SAMPLED BY:

Soil Analysis - Salinity (AB Tier 1 - pH CaCl2) - GP

DATE RECEIVED: 2016-11-14

DATE REPORTED: 2016-11-15

Parameter	Unit	G / S	RDL	S1-15 01-15-078-26W5M Soil 2016-11-14 8012482	N1-15 01-15-078-26W5M Soil 2016-11-14 8012490
SAMPLE DESCRIPTION:				S1-15 01-15-078-26W5M	N1-15 01-15-078-26W5M
SAMPLE TYPE:				Soil	Soil
DATE SAMPLED:				2016-11-14	2016-11-14
pH, Calcium Chloride Extraction	pH Units		0.02	6.63	7.63
Electrical Conductivity (Sat. Paste)	dS/m		0.01	2.33	2.89
Sodium Adsorption Ratio				1.00	1.04
Saturation Percentage	%		N/A	70	64
Chloride, Soluble	mg/L		2	11	2
Calcium, Soluble	mg/L		1	379	455
Potassium, Soluble	mg/L		2	6	7
Magnesium, Soluble	mg/L		1	125	223
Sodium, Soluble	mg/L		2	88	108
Sulfur (as Sulfate), Soluble	mg/L		2	1460	2130
Calcium, Soluble (meq/L)	meq/L		0.05	18.9	22.7
Calcium, Soluble (mg/kg)	mg/kg		1	265	291
Chloride, Soluble (meq/L)	meq/L		0.06	0.31	<0.06
Chloride, Soluble (mg/kg)	mg/kg		2	8	<2
Magnesium, Soluble (meq/L)	meq/L		0.08	10.3	18.4
Magnesium, Soluble (mg/kg)	mg/kg		1	88	143
Potassium, Soluble (meq/L)	meq/L		0.05	0.15	0.18
Potassium, Soluble (mg/kg)	mg/kg		2	4	4
Sodium, Soluble (meq/L)	meq/L		0.09	3.83	4.70
Sodium, Soluble (mg/kg)	mg/kg		2	62	69
Sulfur (as Sulfate), Soluble (meq/L)	meq/L		0.04	30.4	44.3
Sulfur (as Sulfate), Soluble (mg/kg)	mg/kg		2	1020	1360
Theoretical Gypsum Requirement	tonnes/ha		0.01	<0.01	<0.01

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

Certified By: Natasha Ausenault

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 16G160055

PROJECT: 01-15-078-26W5M

CLIENT NAME: SECURE ENERGY(ENVIRO SERVICES)INC

ATTENTION TO: Jason Smith

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-11-14

DATE REPORTED: 2016-11-15

				S1-15	N1-15
			SAMPLE DESCRIPTION:	01-15-078-26W5M	01-15-078-26W5M
			SAMPLE TYPE:	Soil	Soil
			DATE SAMPLED:	2016-11-14	2016-11-14
Parameter	Unit	G / S	RDL	8012482	8012490
Benzene	mg/kg		0.005	<0.005	<0.005
Toluene	mg/kg		0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	<0.01	<0.01
Xylenes	mg/kg		0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	210	10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10
C10 - C16 (F2)	mg/kg	150	10	<10	<10
C16 - C34 (F3)	mg/kg	1300	10	<10	16
C34 - C50 (F4)	mg/kg	5600	10	<10	13
Gravimetric Heavy Hydrocarbons	mg/kg		1000	NA	NA
Moisture Content	%		N/A	18	12
Surrogate	Unit	Acceptable Limits			
Toluene-d8 (BTEX)	%	50-150		101	102
Ethylbenzene-d10 (BTEX)	%	50-150		109	106
o-Terphenyl (F2-F4)	%	50-150		109	110

Certified By: Natasha Ausenault

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Certificate of Analysis

AGAT WORK ORDER: 16G160055

PROJECT: 01-15-078-26W5M

CLIENT NAME: SECURE ENERGY(ENVIRO SERVICES)INC

ATTENTION TO: Jason Smith

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP

DATE RECEIVED: 2016-11-14

DATE REPORTED: 2016-11-15

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ag,F)

8012482-8012490 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.

Certified By: Natasha Ausenault

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Quality Assurance

CLIENT NAME: SECURE ENERGY(ENVIRO SERVICES)INC

AGAT WORK ORDER: 16G160055

PROJECT: 01-15-078-26W5M

ATTENTION TO: Jason Smith

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Nov 15, 2016

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Soil Analysis - Salinity (AB Tier 1 - pH CaCl2) - GP															
pH, Calcium Chloride Extraction	749	8012482	6.61	6.63	0.3%	< 0.02	100%	90%	110%						
Electrical Conductivity (Sat. Paste)	749	8012482	2.20	2.33	5.7%	< 0.01	99%	90%	110%						
Saturation Percentage	749	8012482	70	68	2.9%	N/A	100%	75%	125%						
Chloride, Soluble	244	8012482	10	11	9.5%	< 2	100%	80%	120%	97%	80%	120%	99%	80%	120%
Calcium, Soluble	3534	8012482	346	379	9.1%	< 1	95%	80%	120%				100%	75%	125%
Potassium, Soluble	3534	8012482	6	6	NA	< 2	88%	80%	120%				96%	75%	125%
Magnesium, Soluble	3534	8012482	114	125	9.2%	< 1	92%	80%	120%				100%	75%	125%
Sodium, Soluble	3534	8012482	74	88	17.3%	< 2	102%	80%	120%				100%	75%	125%
Sulfur (as Sulfate), Soluble	3534	8012482	459	487	5.9%	< 2	85%	80%	120%				99%	75%	125%

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.

CCME / Alberta Tier 1 Metals (Extended Package (Soluble B), Soil) - GP															
Antimony	2141	8012482	1.7	1.3	NA	< 0.5	113%	80%	120%				86%	75%	125%
Arsenic	2141	8012482	16.1	15.3	5.1%	< 0.5	95%	80%	120%				93%	75%	125%
Barium	2141	8012482	210	207	1.4%	< 0.5	103%	80%	120%				101%	75%	125%
Beryllium	2141	8012482	0.9	0.9	NA	< 0.5	109%	80%	120%				104%	75%	125%
Boron, Soluble	3534	8012482	<0.5	<0.5	NA	< 0.5	99%	80%	120%				101%	75%	125%
Cadmium	2141	8012482	0.7	0.6	NA	< 0.5	101%	80%	120%				105%	75%	125%
Chromium	2141	8012482	20.7	19.8	4.4%	< 0.5	103%	80%	120%				85%	75%	125%
Chromium, Hexavalent	749	8012482	< 0.3	< 0.3	NA	< 0.3	98%	80%	120%	111%	80%	120%	89%	80%	120%
Cobalt	2141	8012482	10.0	9.1	9.4%	< 0.5	100%	80%	120%				97%	75%	125%
Copper	2141	8012482	22.7	22.1	2.7%	< 0.5	113%	80%	120%				88%	75%	125%
Lead	2141	8012482	18.6	17.2	7.8%	< 0.5	98%	80%	120%				105%	75%	125%
Mercury	2141	8012482	< 0.5	< 0.5	NA	< 0.5	98%	80%	120%				97%	75%	125%
Molybdenum	2141	8012482	4.3	3.9	9.8%	< 0.5	97%	80%	120%				105%	75%	125%
Nickel	2141	8012482	23.0	22.2	3.5%	< 0.5	98%	80%	120%				91%	75%	125%
Selenium	2141	8012482	0.8	0.8	NA	< 0.5	97%	80%	120%				90%	75%	125%
Silver	2141	8012482	< 0.5	< 0.5	NA	< 0.5	96%	80%	120%				96%	75%	125%
Thallium	2141	8012482	< 0.5	< 0.5	NA	< 0.5	97%	80%	120%				110%	75%	125%
Tin	2141	8012482	0.8	0.7	NA	< 0.5	100%	80%	120%				100%	75%	125%
Uranium	2141	8012482	1.6	1.6	NA	< 0.5	96%	80%	120%				110%	75%	125%
Vanadium	2141	8012482	50.9	49.9	2.0%	< 0.5	98%	80%	120%				75%	75%	125%
Zinc	2141	8012482	82	70	15.8%	< 1	102%	80%	120%				102%	75%	125%

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.

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Quality Assurance

CLIENT NAME: SECURE ENERGY(ENVIRO SERVICES)INC
AGAT WORK ORDER: 16G160055
PROJECT: 01-15-078-26W5M
ATTENTION TO: Jason Smith
SAMPLING SITE:
SAMPLED BY:

Soil Analysis (Continued)

RPT Date: Nov 15, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Certified By: Natasha Ausenault

AGAT Laboratories

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Quality Assurance

CLIENT NAME: SECURE ENERGY(ENVIRO SERVICES)INC

AGAT WORK ORDER: 16G160055

PROJECT: 01-15-078-26W5M

ATTENTION TO: Jason Smith

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 15, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil - GP															
Benzene	582	2482	< 0.005	< 0.005	NA	< 0.005	81%	80%	120%	84%	60%	140%	87%	60%	140%
Toluene	582	2482	< 0.05	< 0.05	NA	< 0.05	91%	80%	120%	84%	60%	140%	88%	60%	140%
Ethylbenzene	582	2482	< 0.01	< 0.01	NA	< 0.01	99%	80%	120%	86%	60%	140%	89%	60%	140%
Xylenes	582	2482	< 0.05	< 0.05	NA	< 0.05	100%	80%	120%	87%	60%	140%	90%	60%	140%
C6 - C10 (F1)	582	2482	< 10	< 10	NA	< 10	86%	70%	130%	114%	60%	140%	112%	60%	140%
C10 - C16 (F2)	3062	2482	< 10	< 10	NA	< 10	107%	80%	120%	103%	60%	140%	105%	60%	140%
C16 - C34 (F3)	3062	2482	< 10	< 10	NA	< 10	111%	80%	120%	102%	60%	140%	103%	60%	140%
C34 - C50 (F4)	3062	2482	< 10	< 10	NA	< 10	110%	80%	120%	98%	60%	140%	101%	60%	140%

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.

Certified By: Natasha Ausenault

AGAT Laboratories

10203B 123 STREET
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CANADA T8V 8B7
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Method Summary

CLIENT NAME: SECURE ENERGY(ENVIRO SERVICES)INC

AGAT WORK ORDER: 16G160055

PROJECT: 01-15-078-26W5M

ATTENTION TO: Jason Smith

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Arsenic	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Barium	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Beryllium	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Boron, Soluble	GIN-0140 & GSL-0140	Carter & Gregorich/ 3120B	ICP/OES
Cadmium	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Chromium	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Chromium, Hexavalent	GSL-0600	Reseinauer, Methods of Soil Analysis 1982	SPECTROPHOTOMETER
Cobalt	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Copper	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Lead	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Mercury	SOIL 0390; SOIL 0110; SOIL 0120; INST 0141	EPA SW 846-3050/6010; SHEPPARD	ICP-MS
Molybdenum	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Nickel	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Selenium	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Silver	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Thallium	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Tin	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Uranium	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Vanadium	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
Zinc	GIN-0141 & GSL-0390	EPA SW 846-3050 B/3125 B	ICP-MS
pH, Calcium Chloride Extraction	GIN-0111	Carter & Gregorich	pH METER
Electrical Conductivity (Sat. Paste)	GMM-0205	McKeague 4.13/3.21	CONDUCTIVITY METER
Sodium Adsorption Ratio	GIN-0140 & GSL-0140	Carter & Gregorich/ 3120B	ICP/OES
Saturation Percentage	GSL-0140	Carter & Gregorich	GRAVIMETRIC
Chloride, Soluble	GIN-0150 & GSL-0140	4110B/ Carter & Gregorich	IC
Calcium, Soluble	GIN-0140 & GSL-0140	Carter & Gregorich/ 3120B	ICP/OES
Potassium, Soluble	GIN-0140 & GSL-0140	Carter & Gregorich/ 3120B	ICP/OES
Magnesium, Soluble	GIN-0140 & GSL-0140	Carter & Gregorich/ 3120B	ICP/OES
Sodium, Soluble	GIN-0140 & GSL-0140	Carter & Gregorich/ 3120B	ICP/OES
Sulfur (as Sulfate), Soluble	GIN-0140 & GSL-0140	Carter & Gregorich/ 3120B	ICP/OES

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Method Summary

CLIENT NAME: SECURE ENERGY(ENVIRO SERVICES)INC

AGAT WORK ORDER: 16G160055

PROJECT: 01-15-078-26W5M

ATTENTION TO: Jason Smith

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Toluene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Ethylbenzene	GTO 0570	EPA SW-846 5030/8260	GC/MS
Xylenes	GTO 0570	EPA SW-846 5030/8260	GC/MS
C6 - C10 (F1)	GTO-0570	EPA SW-846 5030/8260	GC/FID
C6 - C10 (F1 minus BTEX)	GTO 0570	EPA SW-846 5030/8260	GC/FID
C10 - C16 (F2)	GTO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	GTO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	GTO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	GTO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	GTO-0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/FID
Ethylbenzene-d10 (BTEX)	GTO-0570	CCME CWS PHC Tier 1,BC MOE D-104	GC/MS
o-Terphenyl (F2-F4)	GTO-0560	CCME CWS PHC Tier 1, EPA SW-846 8015B	GC/FID

AGAT Laboratories
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Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature: 12
AGAT Job Number: 160160055
Date and Time: '16 NOV 14 16:28

Report Information

Company: Secure Energy (Consite)
Contact: Jason Smith
Address: 721033 Range Road 63
Clairmont AB T8X 4L6
Phone: 780-518-5524 Fax:
LSD: 1-15-78-26W5
Client Project #:

Report Information

1. Name: Jason Smith
Email: jssmith@secure-energy.com
2. Name:
Email:
3. Name:
Email:

Report Format

☐ Single Sample per Page
☑ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☐ 5 to 7 business days
Rush TAT ☑ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required: Nov. 15/16

RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To

Same: Yes / No
Company: ~~Secure~~ En
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements (Selection may impact detection limits)

☐ 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 ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

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 ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐							HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
901 2492	S1-15		Nov. 14/14:30			X	X	X															
901 2490	N1-15		Nov. 14/15:00			X	X	X															

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Mike Schmidt	Nov. 14	Kristen Chatfield	Nov. 14
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 _____ of _____

NC: AB 073254

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Secure Energy

Courier: _____ 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 NOV. 26, 2016

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) 12 + 12 + 12 = 12 °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: 1601600055

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)

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: DENISE BJORNSON

PROJECT: Rycroft Site 9433 Remediation Project

AGAT WORK ORDER: 16G118457

TRACE ORGANICS REVIEWED BY: Larissa Poryadina, Report Writer

WATER ANALYSIS REVIEWED BY: Krystyna Krauze, Senior Analyst

DATE REPORTED: Jul 26, 2016

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (403) 735-2005

*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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Certificate of Analysis

AGAT WORK ORDER: 16G118457

PROJECT: Rycroft Site 9433 Remediation Project

CLIENT NAME: SHARP FV

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Flash Point Analysis

DATE RECEIVED: 2016-07-19

DATE REPORTED: 2016-07-26

		SAMPLE DESCRIPTION:		Tank Water
		SAMPLE TYPE:		Water
		DATE SAMPLED:		7/19/2016
Parameter	Unit	G / S	RDL	7722956
Flash point (Pensky Martin Closed Cup)	Deg C		NA	>100

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

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 16G118457

PROJECT: Rycroft Site 9433 Remediation Project

CLIENT NAME: SHARP FV

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE RECEIVED: 2016-07-19

DATE REPORTED: 2016-07-26

		SAMPLE DESCRIPTION:		Tank Water
		SAMPLE TYPE:		Water
		DATE SAMPLED:		7/19/2016
Parameter	Unit	G / S	RDL	7722956
Benzene	mg/L		0.0005	20.3
Toluene	mg/L		0.0003	32.0
Ethylbenzene	mg/L		0.0005	2.24
Xylenes	mg/L		0.0005	14.5
C6 - C10 (F1)	mg/L		0.1	95.7
C6 - C10 (F1 minus BTEX)	mg/L		0.1	26.6
C>10 - C16	mg/L		0.1	3.1
C>16 - C34	mg/L		0.1	0.6
C>34 - C50	mg/L		0.1	0.1
Surrogate	Unit	Acceptable Limits		
Toluene-d8 (BTEX)	%	50-150		96
o-Terphenyl (F2-F4)	%	50-150		98

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

7722956 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).
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (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.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 16G118457

PROJECT: Rycroft Site 9433 Remediation Project

CLIENT NAME: SHARP FV

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Total Extractable Organic Halides - Water

DATE RECEIVED: 2016-07-19

DATE REPORTED: 2016-07-26

		SAMPLE DESCRIPTION:		Tank Water
		SAMPLE TYPE:		Water
		DATE SAMPLED:		7/19/2016
Parameter	Unit	G / S	RDL	7722956
Extractable Organic Halides	mg/L		0.2	0.5

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

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 16G118457

PROJECT: Rycroft Site 9433 Remediation Project

CLIENT NAME: SHARP FV

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Class 1B Landfill- Total Metals (Calgary)

DATE RECEIVED: 2016-07-19

DATE REPORTED: 2016-07-26

		SAMPLE DESCRIPTION:		Tank Water
		SAMPLE TYPE:		Water
		DATE SAMPLED:		7/19/2016
Parameter	Unit	G / S	RDL	7722956
Total Arsenic	mg/L		0.001	0.006
Total Beryllium	mg/L		0.0005	<0.0005
Total Cadmium	mg/L		0.000025	0.000379
Total Chromium	mg/L		0.0005	0.0005
Total Lead	mg/L		0.0005	0.0716
Total Mercury	mg/L		0.000025	0.000560
Total Nickel	mg/L		0.003	0.008
Total Selenium	mg/L		0.0005	0.0025
Total Silver	mg/L		0.0001	<0.0001
Total Thallium	mg/L		0.0001	<0.0001
Total Uranium	mg/L		0.001	0.001
pH	pH Units		N/A	7.71
Specific Gravity	g/mL		N/A	NSQ

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME FWAL

7722956 < - Values refer to Method Detection Limit.

NSQ - Not Sufficient Quantity of sample for analysis.

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G118457

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jul 26, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Flash Point Analysis															
Flash point (Pensky Martin Closed Cup)	1822	BUT.	35	35	0.0%		100%	80%	120%						
Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.															
Total Extractable Organic Halides - Water															
Extractable Organic Halides	50	446	<0.2	<0.2	NA	< 0.2	98%	70%	130%	98%	70%	130%	94%	50%	150%
Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.															
Non-accredited test. Inquire with lab for details.															
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	2459	7720239	<0.0005	<0.0005	NA	< 0.0005	95%	80%	120%	86%	80%	120%	85%	70%	130%
Toluene	2459	7720239	<0.0003	<0.0003	NA	< 0.0003	99%	80%	120%	93%	80%	120%	91%	70%	130%
Ethylbenzene	2459	7720239	<0.0005	<0.0005	NA	< 0.0005	101%	80%	120%	100%	80%	120%	96%	70%	130%
Xylenes	2459	7720239	<0.0005	<0.0005	NA	< 0.0005	106%	80%	120%	106%	80%	120%	105%	70%	130%
C6 - C10 (F1)	2459	7720239	<0.1	<0.1	NA	< 0.1	111%	80%	120%	118%	80%	120%	101%	70%	130%
C>10 - C16	295	7724836	<0.1	0.1	NA	< 0.1	95%	80%	120%	105%	80%	120%	104%	70%	130%
C>16 - C34	295	7724836	4.8	4.8	0.0%	< 0.1	95%	80%	120%	116%	80%	120%	105%	70%	130%
C>34 - C50	295	7724836	4.1	3.9	5.0%	< 0.1	95%	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:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G118457

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Jul 26, 2016			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Class 1B Landfill- Total Metals (Calgary)															
Total Arsenic	427	7719733	<0.001	<0.001	NA	< 0.001	98%	80%	120%	101%	80%	120%	103%	80%	120%
Total Beryllium	427	7719733	<0.0005	<0.0005	NA	< 0.0005	98%	80%	120%	97%	80%	120%	106%	80%	120%
Total Cadmium	427	7719733	0.000032	<0.	NA	< 0.000025	99%	80%	120%	100%	80%	120%	105%	80%	120%
Total Chromium	427	7719733	<0.0005	<0.0005	NA	< 0.0005	93%	80%	120%	104%	80%	120%	99%	80%	120%
Total Lead	427	7719733	0.0002	0.0001	NA	< 0.0005	108%	80%	120%	111%	80%	120%	113%	80%	120%
Total Mercury	7727665		< 0.000025	< 0.000025	NA	< 0.000025	105%	90%	110%	105%	90%	110%	102%	80%	120%
Total Nickel	427	7719733	0.004	0.004	NA	< 0.003	94%	80%	120%	100%	80%	120%	97%	80%	120%
Total Selenium	427	7719733	0.0008	0.0013	NA	< 0.0005	96%	80%	120%	100%	80%	120%	106%	80%	120%
Total Silver	427	7719733	<0.0001	<0.0001	NA	< 0.0001	88%	80%	120%	99%	80%	120%	101%	80%	120%
Total Thallium	427	7719733	<0.0001	<0.0001	NA	< 0.0001	91%	80%	120%	100%	80%	120%	105%	80%	120%
Total Uranium	427	7719733	0.003	0.003	NA	< 0.001	99%	80%	120%	103%	80%	120%	NA	80%	120%
pH	7726090		7.67	7.64	0.4%	N/A	101%	90%	110%						

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.

pH has been analyzed past the recommended holding time of 15 minutes from sampling (field measurement ideal if more accurate data required)

Certified By:

AGAT Laboratories

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http://www.agatlabs.com

Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G118457

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: DENISE BJORNSON

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Flash point (Pensky Martin Closed Cup)	TO 2210	ASTM D93	Pensky Martin Closed Cup
Benzene	TO 0332	EPA SW846 8260-W	GC/MS
Toluene	TO 0332	EPA SW846 8260-W	GC/MS
Ethylbenzene	TO 0332	EPA SW846 8260-W	GC/MS
Xylenes	TO 0332	EPA SW846 8260-W	GC/MS
C6 - C10 (F1)	TO 0542	CCME Tier 1 Method-W L	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0542	CCME Tier 1 Method-W L	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method-W H	GC/FID
C>16 - C34	TO 0511	CCME Tier 1 Method-W H	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method-W H	GC/FID
Toluene-d8 (BTEX)	TO 0332	EPA SW846 8260-W	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method-W H	GC/FID
Extractable Organic Halides	TO-3504	"In house" method	IC/EC
Water Analysis			
Total Arsenic	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
Total Beryllium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
Total Cadmium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
Total Chromium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
Total Lead	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
Total Mercury	WATR 0200; INST 0160	SM 3030 E; SM 3112 B TW	CV/AA
Total Nickel	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
Total Selenium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
Total Silver	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
Total Thallium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
Total Uranium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
pH	INST 0101	SM 4500 H+	PH METER
Specific Gravity	SOIL 0230	BAROID	MUD BALANCE

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta
T2E 7P7
webearth.agatlabs.com
P: 403.735.2005 • F: 403.735.2771

Laboratory Use Only
Arrival Temperature: 3°C
AGAT Job Number: 16-411845-7
Date and Time: 16 JUL-20 9:05

Chain of Custody Record

Report Information

Company: Sharp FV
Contact: Denise Bjornson
Address:
Phone: (780) 835-4646 Fax:
LSD:
Client Project #: Rycroft Site 9433 Remediation Project

Report Information

1. Name: Denise Bjornson
Email: dbjornson@sharp2000.com
2. Name: Ervin Strome
Email: estrome@telus.net
3. Name:
Email:

Report Format

☐ Single Sample per Page
☐ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☑ 5-7 Business Days
Rush TAT (Surcharge) ☐ Less than 24 Hours (200%) ☐ Less than 48 Hours (100%) ☐ Less than 72 Hours (50%)
Date Required:

Invoice To

Same ☑ Yes ☐ No

Company:
Contact:
Address:
Phone: Fax:
PO/AFE#

Requirements (Check One)

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

LABORATORY USE (LAB ID#)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/ TIME SAMPLED	COMMENTS- SITE SAMPLE INFO, SAMPLE CONTAINMENT	# of CONTAINERS	pH	Total Metals (Class IB)	Total Mercury (Class IB)	Halogenated Organic Compounds	Flashpoint	BTEX/F1-F4										HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/ HAZARDOUS (Y/N)
411845	Tank Water	Water	19-Jul-16		11	X	X	X	X	X	X												

Samples Relinquished By (Print Name and Sign): Ervin Strome Date/ Time: July 19/16
Samples Relinquished By (Print Name and Sign): Date/ Time:
Samples Relinquished By (Print Name and Sign): Date/ Time:

Samples Relinquished By (Print Name and Sign): Date/ Time: July 19/16
Samples Relinquished By (Print Name and Sign): Date/ Time:
Samples Relinquished By (Print Name and Sign): JUL 2 0 2016

Page 1 of 1
No: EAB

Document ID: DIV-50-1507.002

C 19136

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM – BRANCH RECEIPT

Sending From Branch: EDM☐ GP☒ FN☐ FM☐ RD☐ VAN☐ LYD☐ FSJ☐ EST☐ Other:_____

Company/Consultant: Sharp FV. 16611845 7

TAT: <24hr ☐ 24-48hr ☐ 48-72hr ☐ Reg ☒ Other_____ Cooler Quantity: _____

TIME SENSITIVE ISSUES:

Earliest Date Sampled: 19-Jul-16

Microbiology: Test: _____

Hydrocarbons: Test: BTEX F1-F4

Are samples received >5 days after sampling: Yes☐ No☒

ALREADY EXCEEDED? Yes☐ No☒

Expiry: _____

Expiry: 2-July-16

(TEMPERATURE MUST BE MAINTAINED IF RECEIVED <10 DEGREES C)

3 temperatures of samples* and average of each cooler (taken on jars only): NA (only bags on coolers)

(1) 16+16+17=16°C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C

Additional integrity issues (note here and on COC next to the sample ID):

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM – BRANCH RECEIPT

Sending From Branch: EDM☐ GP☐ FN☐ FM☐ RD☐ VAN☐ LYD☐ FSJ☐ EST☐ Other:_____

Company/Consultant: _____

TAT: <24hr ☐ 24-48hr ☐ 48-72hr ☐ Reg ☐ Other_____ Cooler Quantity: _____

TIME SENSITIVE ISSUES:

Earliest Date Sampled: _____

Microbiology: Test: _____

Hydrocarbons: Test: _____

Are samples received >5 days after sampling: Yes☐ No☐

ALREADY EXCEEDED? Yes☐ No☐

Expiry: _____

Expiry: _____

(TEMPERATURE MUST BE MAINTAINED IF RECEIVED <10 DEGREES C)

3 temperatures of samples* and average of each cooler (taken on jars only): NA (only bags on coolers)

(1) ___+___+___=___°C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C

Additional integrity issues (note here and on COC next to the sample ID):

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Sharp FV

Courier: Jazoo 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 JULY 26

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) 3 + 3 + 3 = 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: 1671845-7

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)

PARAMETERS FOR NON OILFIELD CLASS IB WATER- ALBERTA

SECURE energy services

Generator:	**UWI:**
	LSD Verified: ☐
Date of Analysis:	**Secure Rep's Name:**
Lab:	**Lab Reference #:**

Analysis	Unit	Guideline / Standard	Sample Accepted	Sample Rejected
pH 1:1 Water:Soil Extraction		6.0-9.0	☐	☐
Arsenic – Total	Mg/kg	<500	☐	☐
Beryllium – Total	Mg/kg	<100	☐	☐
Cadmium – Total	Mg/kg	<100	☐	☐
Chromium – Total	Mg/kg	<500	☐	☐
Lead – Total	Mg/kg	<500	☐	☐
Mercury – Total	Mg/kg	<20	☐	☐
Nickel – Total	Mg/kg	<500	☐	☐
Selenium – Total	Mg/kg	<200	☐	☐
Silver – Total	Mg/kg	<100	☐	☐
Thallium – Total	Mg/kg	<200	☐	☐
Uranium – Total	Mg/kg	<100	☐	☐
Halogenated organic compounds	N/A ☐ or <100 mg/kg		☐	☐
Flash Point	Degrees Celsius	>61°	☐	☐

Please have the accredited laboratory you are using mirror this sample for their analytical response. Detail review procedures in notes section, attach all supporting documentation

Notes:

Reviewed: Date:

AGAT Laboratories

10203B 123 STREET
GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

CLIENT NAME: SHARP FV
BOX 319
FAIRVIEW, AB T0H1LO
(888) 835-4646

ATTENTION TO: Denise Bjornson

PROJECT: Rycroft Site 9433 Remediation Project

AGAT WORK ORDER: 16G116650

WATER ANALYSIS REVIEWED BY: Maureen Beattie, Laboratory Supervisor

DATE REPORTED: Jul 18, 2016

PAGES (INCLUDING COVER): 7

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (780) 402-2050

*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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Certificate of Analysis

AGAT WORK ORDER: 16G116650

PROJECT: Rycroft Site 9433 Remediation Project

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Routine Chemistry Water Analysis - GP

DATE RECEIVED: 2016-07-16

DATE REPORTED: 2016-07-18

				Rycroft Tank
		SAMPLE DESCRIPTION:		Water
		SAMPLE TYPE:		Water
		DATE SAMPLED:		7/16/2016
Parameter	Unit	G / S	RDL	7711651
pH	pH Units	6.5-8.5	0.02	7.24
p - Alkalinity (as CaCO3)	mg/L		5	<5
T - Alkalinity (as CaCO3)	mg/L		5	305
Bicarbonate	mg/L		5	372
Carbonate	mg/L		5	<5
Hydroxide	mg/L		5	<5
Electrical Conductivity	uS/cm		1	1010
Chloride	mg/L	250	1	104
Fluoride	mg/L	1.5	0.01	<0.01
Nitrate	mg/L	45	0.1	<0.1
Nitrite	mg/L	3	0.05	<0.05
Sulfate	mg/L	500	1	8
Dissolved Calcium	mg/L		0.3	76.0
Dissolved Magnesium	mg/L		0.2	24.5
Dissolved Sodium	mg/L	200	0.6	53.6
Dissolved Potassium	mg/L		0.6	16.4
Dissolved Iron	mg/L	0.3	0.1	<0.1
Dissolved Manganese	mg/L	0.05	0.005	0.157
Calculated TDS	mg/L		1	509
Hardness	mg CaCO3/L		0.5	291
Ion Balance	%			93.1
Nitrate + Nitrite-N	mg/L		0.02	<0.02
Nitrate - N	mg/L		0.02	<0.02
Nitrite - N	mg/L		0.01	<0.01
SAR	N/A		0.20	1.37

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (D Water)

7711651 < - Values refer to Report Detection Limits.

Certified By: Maureen Beattie

AGAT Laboratories

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GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 16G116650

PROJECT: Rycroft Site 9433 Remediation Project

CLIENT NAME: SHARP FV

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Visual Oil & Grease - GP

DATE RECEIVED: 2016-07-16

DATE REPORTED: 2016-07-16

SAMPLE DESCRIPTION:				Rycroft Tank Water
SAMPLE TYPE:				Water
DATE SAMPLED:				7/16/2016
Parameter	Unit	G / S	RDL	7711651
Visual Oil & Grease				Positive

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

Certified By: Maureen Beattie

AGAT Laboratories

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CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G116650

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Routine Chemistry Water Analysis - GP															
pH	629	1651	7.22	7.24	0.3%	< 0.02	100%	80%	120%						
T - Alkalinity (as CaCO3)	629	1651	305	305	0.0%	< 5	100%	80%	120%						
Electrical Conductivity	629	1651	1010	1010	0.0%	< 1	94%	90%	110%						
Chloride	142	1651	104	104	0.0%	< 1	98%	80%	120%				100%	80%	120%
Fluoride	142	1651	< 0.01	< 0.01	NA	< 0.01	94%	80%	120%				100%	80%	120%
Nitrate	142	1651	< 0.1	< 0.1	NA	< 0.1	99%	80%	120%				98%	80%	120%
Nitrite	142	1651	< 0.05	< 0.05	NA	< 0.05	104%	80%	120%				101%	80%	120%
Sulfate	142	1651	8	8	0.0%	< 1	97%	80%	120%				96%	80%	120%
Dissolved Calcium	3432	1651	76.0	76.0	0.0%	< 0.3	94%	80%	120%				103%	75%	125%
Dissolved Magnesium	3432	1651	24.3	24.5	0.9%	< 0.2	90%	80%	120%				104%	75%	125%
Dissolved Sodium	3432	1651	53.3	53.6	0.5%	< 0.6	94%	80%	120%				106%	75%	125%
Dissolved Potassium	3432	1651	16.4	16.4	0.2%	< 0.6	90%	80%	120%				100%	75%	125%
Dissolved Iron	3432	1651	<0.1	<0.1	NA	< 0.1	105%	80%	120%				100%	75%	125%
Dissolved Manganese	3432	1651	0.155	0.157	1.2%	< 0.005	107%	80%	120%				100%	75%	125%

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.

pH has been analyzed past the recommended holding time of 15 minutes from sampling (field measurement ideal if more accurate data required)

Certified By: Maureen Beattie

AGAT Laboratories

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GRANDE PRAIRIE, ALBERTA
CANADA T8V 8B7
TEL (780)402-2050
FAX (780)402-2078
http://www.agatlabs.com

Method Summary

CLIENT NAME: SHARP FV

AGAT WORK ORDER: 16G116650

PROJECT: Rycroft Site 9433 Remediation Project

ATTENTION TO: Denise Bjornson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
pH	GIN-0100	SM4500H+B	pH METER
p - Alkalinity (as CaCO3)	GIN-0100	SM 2320 B	TITRATION
T - Alkalinity (as CaCO3)	GIN-0100	SM 2320 B	TITRATION
Bicarbonate	GIN-0100	SM 2320 B	TITRATION
Carbonate	GIN-0100	SM 2320 B	TITRATION
Hydroxide	GIN-0100	SM 2320 B	TITRATION
Electrical Conductivity	GMM-0205	Mckeague 4.13/3.2	CONDUCTIVITY METER
Chloride	GIN-0150	SM 4110 B	IC
Fluoride	GIN-0150	SM 4110 B	IC
Nitrate	GIN-0150	SM 4110 B	IC
Nitrite	GIN-0150	SM 4110 B	IC
Sulfate	GIN-0150	SM 4110 B	IC
Dissolved Calcium	GIN-0140	SM 3120 B	ICP/OES
Dissolved Magnesium	GIN-0140	SM 3120 B	ICP/OES
Dissolved Sodium	GIN-0140	SM 3120 B	ICP/OES
Dissolved Potassium	GIN-0140	SM 3120 B	ICP/OES
Dissolved Iron	GIN-0140	SM 3120 B	ICP/OES
Dissolved Manganese	GIN-0140	SM 3120 B	ICP/OES
Visual Oil & Grease		SM Examination of Water and Wastewater	

AGAT Laboratories
2910 12 Street NE
Calgary, Alberta T2E 7P7
P: 403.735.2005 • F: 403.735.2771
webearth.agatlabs.com

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Laboratory Use Only
Arrival Temperature: 22°c
AGAT Job Number: 166116650
Date and Time: JUL 16 16:25

Report Information

Company: SHARP ENVIRONMENTAL
Contact: DENISE BJORNSON
Address: BOX 219, FAIRVIEW AB TOH 1L0
Phone: 780-835-4646 Fax:
LSD:
Client Project #: RYCROFT SITE 9433 REMED PROJECT

Report Information

1. Name: DENISE BJORNSON
   Email: dbjornson@sharp2000.com
2. Name: ERVIN STROM
   Email: estrome@telus.net
3. Name:
   Email:

Report Format

☐ Single Sample per Page
☐ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☐ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☑ 24 to 48 hours ☐ 48 to 72 hours
Date Required:

RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. *SEE BACK FOR SURCHARGE.*

Invoice To

Same Yes / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*

☐ 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 ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

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 ☐HWS-B ☐Cr^6 ☐Hg	Water Metals ☐Dissolved ☐Total ☐Hg ☐Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	VISUAL SHEEN	ROUTINE POTABLE						HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
7711651	RYCROFT TANK WATER	WATER	07/16/16	JAR	2											✓	✓							

Samples Relinquished By (Print Name and Sign): ERVIN STROME — Date/Time: 16:30 07/16/16
Samples Received By (Print Name and Sign): Corey Cwl Corey Cwl — Date/Time: July. 16/16
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 1 of 1
N°: AB 038799

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Shaw FV

Courier: N/A Prepaid Collect

Waybill# N/A

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: _____

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: July 18, 2016 (NO_2+NO_3)

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) 21 + 27 + ___ = 22 °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: 16G116650

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)

Date issued: October 05, 2015
Document ID: SR-9505.003

APPENDIX 5

Receipt Summary Report

Facility Group: SPIRIT RIVER LANDFILL (24011)
Facility: ALL
Receipt Date: 01/01/2016
Receipt End Date: 02/21/2017
Group by: Waste Confirmation Code (WCC)
Search by: Receipt Date Range
Waste Confirmation Code: 24011-16-0090-19

Waste Confirmation: 24011-16-0090-19

Producer: SUREWAY LOGGING LTD (13764)

Receipt #	Receipt Date	Receipt Status	Location	Ticket #	Trucker	Substance	WCC	Gross Wt.	Tare Wt.	Units (tonnes)
1891117	11/24/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	555	LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL	24011-16-0090-19	45.38	22.00	23.38
Manifest: 794118			**Grid Ltr:** N	**Grid No:** 14.00		**Elev:** 654.00				
EDI:				**AFE:**		PO:			**CCN:**	
1891150	11/24/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	226	LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL	24011-16-0090-19	46.52	20.50	26.02
Manifest: 794117			**Grid Ltr:** N	**Grid No:** 14.00		**Elev:** 654.00				
EDI:				**AFE:**		PO:			**CCN:**	
1891397	11/24/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	555	LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL	24011-16-0090-19	48.76	22.00	26.76
Manifest: 794119			**Grid Ltr:** N	**Grid No:** 14.00		**Elev:** 654.00				
EDI:				**AFE:**		PO:			**CCN:**	
1891507	11/24/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	226	LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL	24011-16-0090-19	47.19	20.50	26.69
Manifest: 794115			**Grid Ltr:** N	**Grid No:** 14.00		**Elev:** 654.00				
EDI:				**AFE:**		PO:			**CCN:**	
1891522	11/24/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8	LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL	24011-16-0090-19	34.47	17.20	17.27
Manifest: 794120			**Grid Ltr:** N	**Grid No:** 14.00		**Elev:** 654.00				
EDI:				**AFE:**		PO:			**CCN:**	
1891628	11/24/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	555	LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL	24011-16-0090-19	46.59	22.00	24.59
Manifest: 794121			**Grid Ltr:** N	**Grid No:** 14.00		**Elev:** 654.00				
EDI:				**AFE:**		PO:			**CCN:**	
1891700	11/24/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8	LEN SYDORU	19 HYDROCARBON CONTAMINATED MATERIAL	24011-16-0090-19	32.73	17.20	15.53
Manifest: 794132			**Grid Ltr:** N	**Grid No:** 14.00		**Elev:** 654.00				
EDI:				**AFE:**		PO:			**CCN:**	

Receipt Summary Report

Facility Group: SPIRIT RIVER LANDFILL (24011)
Facility: ALL
Receipt Date: 01/01/2016
Receipt End Date: 02/21/2017
Group by: Waste Confirmation Code (WCC)
Search by: Receipt Date Range
Waste Confirmation Code: 24011-16-0090-19

1891761	11/24/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	226		LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	45.06	20.50	24.56
Manifest: 794116			**Grid Ltr:**	N	**Grid No:**	14.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1891801	11/24/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	555		LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	47.93	22.00	25.93
Manifest: 794114			**Grid Ltr:**	N	**Grid No:**	14.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1891824	11/24/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORU	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	34.71	17.20	17.51
Manifest: 794133			**Grid Ltr:**	N	**Grid No:**	14.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1892464	11/25/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORU	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	36.19	17.20	18.99
Manifest: 794134			**Grid Ltr:**	M	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1892595	11/25/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORU	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	36.59	17.20	19.39
Manifest: 794161			**Grid Ltr:**	M	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1892723	11/25/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	43		LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	47.54	22.77	24.77
Manifest: 794159			**Grid Ltr:**	M	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1892729	11/25/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORU	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	37.47	17.20	20.27
Manifest: 794156			**Grid Ltr:**	M	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1892859	11/25/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	43		LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	49.81	22.77	27.04
Manifest: 794160			**Grid Ltr:**	M	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1892894	11/25/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORU	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	36.75	17.20	19.55

Receipt Summary Report

Facility Group: SPIRIT RIVER LANDFILL (24011)
Facility: ALL
Receipt Date: 01/01/2016
Receipt End Date: 02/21/2017
Group by: Waste Confirmation Code (WCC)
Search by: Receipt Date Range
Waste Confirmation Code: 24011-16-0090-19

1893091	11/25/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORI	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	36.79	17.20	19.59
Manifest: 794157			**Grid Ltr:**	M	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1893181	11/25/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	43		LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	51.33	22.77	28.56
Manifest: 794158			**Grid Ltr:**	M	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1893266	11/25/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORI	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	36.50	17.20	19.30
Manifest: 794179			**Grid Ltr:**	M	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1893881	11/26/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORI	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	36.60	17.20	19.40
Manifest: 794162			**Grid Ltr:**	M	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1893941	11/26/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	102		LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	45.75	18.45	27.30
Manifest: 794168			**Grid Ltr:**	K	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1893961	11/26/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORI	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	40.22	17.20	23.02
Manifest: 794143			**Grid Ltr:**	K	**Grid No:**	13.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1894081	11/26/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	H102		LEFLEY HON	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	46.80	18.45	28.35
Manifest: 794167			**Grid Ltr:**	K	**Grid No:**	14.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1894089	11/26/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORI	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	35.72	17.20	18.52
Manifest: 794192			**Grid Ltr:**	K	**Grid No:**	14.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**
1894082	11/26/16	INV	Site 9433, Plan 3892, Block 2 Lot 15-18	8		LEN SYDORI	19 HYDROCARBON CONTAMINATED MATERIAL		24011-16-0090-19	35.72	17.20	18.52
Manifest: 794166			**Grid Ltr:**	K	**Grid No:**	14.00	**Elev:**	654.00				
EDI:					**AFE:**				PO:			**CCN:**

Receipt Summary Report

Facility Group: SPIRIT RIVER LANDFILL (24011)
Facility: ALL
Receipt Date: 01/01/2016
Receipt End Date: 02/21/2017
Group by: Waste Confirmation Code (WCC)
Search by: Receipt Date Range
Waste Confirmation Code: 24011-16-0090-19

Total Site Volume:	1,003.40	461.11	542.29
Total Producer Volume:	1,003.40	461.11	542.29
Total WCC Volume:	1,003.40	461.11	542.29
Total Facility Group Volume:	1,003.40	461.11	542.29

EARTH MATTERS

WAA
WASTE APPROVAL APPLICATION

TERVITA CORPORATION USE ONLY

WAA no: _____

IMPORTANT: This form is to be completed when you have received all of the accredited lab analytical results identified from the Solid Waste Acceptance Protocol form. The Waste Generator or their Authorized Representative must complete this form and email a scanned copy or fax to the Tervita facility where the solid Waste is to be disposed of. Please ensure the Tervita WAA is signed, dated and be sure to include all supporting and/or signed analytical documents. The completion of this WAA does not in any way provide approval for the disposal of any of the solid Waste. Approval for disposal of any solid Waste shall be at the sole discretion of Tervita's representatitve.

1. WASTE GENERATOR INFORMATION				
a) Waste Generator's name	Company: Sureway Logging Ltd.			
b) Address	Street: Box 485			
	City/Town: La Crete	Province: Alberta	Postal Code: T0H2H0	
c) Generating Waste Location	LSD or Physical address: Site 9433, Plan 3892, Block 2, Lot 15-18			
	City/Town: Rycroft	Province: Alberta	Postal Code: T0H3A0	
d) Waste Generator Authorized Representative	Name: Dallas Frith	Company:		
	Phone: 780-539-0388	Email: dallas_frith@hotmail.com		

UWI/LSD (MULTI WELL PAD)		
a) Surface LSD: Site 9433, Plan 3892, Block 2, Lot 15-18		
b) Associated UWI*	UWI:	UWI:
	UWI:	UWI:
	UWI:	UWI:

* Please attach an additional sheet listing any other UWIs associated with the designated Surface LSD.

2. INVOICING INFORMATION			
a) Company/Consultant's name	Company: Same As Generator		
b) Address	Street:		
	City/Town:	Province:	Postal Code:
c) Payment Approver	Name: Dallas Frith		
	Phone: 780-539-0388	Email: dallas_frith@hotmail.com	
d) Job Identification	EDI code:	AFE:	PO no.:

TERVITA
EARTH MATTERS

3. ENVIRONMENTAL CONSULTANT INFORMATION

a) Consultant/Company	Name: SHARP Environmental (2000) Ltd.			
b) Address	Street: Box 319			
	City/Town: Fairview	Province: Alberta	Postal Code: T0H1L0	
c) Contact	Name: Tory Stranaghan			
	Phone: 780-835-4646	Email: tstranaghan@sharp2000.com		

4. LANDFILL DESTINATION

Alberta

- ☐ Bonnyville
- ☐ Judy Creek
- ☐ Rainbow Lake
- ☑ Spirit River
- ☐ Willow Creek
- ☐ Fox Creek
- ☐ La Glace
- ☐ Tower Road
- ☐ Willisden Green
- ☐ Janvier
- ☐ Mitsue
- ☐ South GP
- ☐ Wabasca

Saskatchewan

- ☐ Gull Lake
- ☐ Lomond
- ☐ Lomond Treatment Pad
- ☐ Marshall
- ☐ Kindersley

British Columbia

- ☐ Northern Rockies
- ☐ Silverberry

Partnered Facilities

- ☐ Medicine Hat
- ☐ Pincher Creek
- ☐ Peace River

5. ATTACHMENTS

☑ Supporting analytical — Supporting analytical I.D. no.: AGAT# 16G140194
☐ SDS (MSDS) ☐ Memo / Letter ☐ Other (specify):

6. WASTE STREAM INFORMATION

a) Waste description: **check only one below**
(a separate WAA is required for each waste stream)

AER waste code (AB Only): SOILRO

- ☐ Absorbent
- ☐ Activated carbon[1]
- ☐ Asbestos*
- ☐ Catalyst, sulphur[1]
- ☐ Catalyst, non-sulphur[1]
- ☐ Cement returns, dry (solid)
- ☐ Construction and Demolition debris
- ☐ Desiccant
- ☐ Drilling mud/cuttings
- ☐ Drilling mud/cuttings
- ☐ Drilling mud/cuttings
- ☐ Elemental sulphur*
- ☐ Flare pit soil*
- ☐ Frac sand (non-radioactive)
- ☐ Incinerator ash
- ☐ Lime sludge (solid)
- ☐ Produced sand
- ☐ Soil with crude oil
- ☐ Soil with dioxin*
- ☐ Soil with gasoline (leaded)
- ☑ Soil with gasoline (unleaded)
- ☐ Soil with herbicide*:
- ☐ Soil with metals
- ☐ Soil with PCBs*
- ☐ Soil with pesticide:
- ☐ Soil with produced water
- ☐ Soil with refined fuel or solvent
- ☐ Soil with sulphur
- ☐ Soil with sweetening agents
- ☐ Soil impacted with dry cleaning and/or industrial related chemicals*:
- ☐ Waste liner(s)
- ☐ Other*:

*Refer to the specific Tervita Provincial Waste Acceptance Protocol or contact your Tervita representative for acceptance criteria.

[1] See section 8(k) for further details on properties.

TERVITA

EARTH MATTERS

6. WASTE STREAM INFORMATION *(Continued)*

b) Process generating waste	Clearly explain generating process: Cleanup of historic gas station			
c) Volume (estimated)	Tonnes: 150-200		m³:	
d) Shipping mode	☐ Bulk	☐ Bag	☑ Other (describe) Body Job/End Dumps	
e) Frequency	☑ One time	☐ Week	☐ Month	☐ Year
f) Recommended PPE and special handling instructions	Standard			

7. PHYSICAL PROPERTIES

a) Physical state	☐ Dry solid	☑ Damp solid	☐ Sludge	☐ Powder/Dust
b) Odour	☐ Strong	☑ Slight	☐ None	
	Describe: Slight gas smell			
c) Debris in waste	☐ Yes	☑ No		
	Describe:			
d) Waste composition	____ % top soil	97 % clay	2 % gravel	1 % sand
e) Passes paint filter test?	☑ Yes	☐ No		
f) Stackable solid	Describe: Clay material			

8. WASTE CHARACTERIZATION/CLASSIFICATION

a) Flash point	☐ ≤ 60.5°C	☑ > 60.5°C
b) pH	☐ < 2.0 (acidic)	☐ > 12.5 (basic) ☑ Between 2.0 and 12.5
c) BTEX	☑ Leachable BTEX (each ≤ limits listed in Table 2 of Alberta User Guide for Waste Managers)	
	☐ Leachable BTEX (each < limits listed in Schedule 4, Table 1 **British Columbia** Hazardous Waste Regulation)	
	☐ Total BTEX (Combined Total ≤ 1,000 mg/kg **British Columbia** Secure landfills only)	
	☐ Leachable Benzene (Benzene components < 0.5 mg/L, TDGR Appendix 4 **Saskatchewan**)	
	☐ Total TEX (All TEX components < 100 mg/kg, TDGR Appendix 5 **Saskatchewan**)	
d) Hydrocarbon	☐ < 3%	☐ > 3% **(British Columbia only)**

TERVITA
EARTH MATTERS

8. WASTE CHARACTERIZATION/CLASSIFICATION *(Continued)*

e) Check only those that apply

- ☑ Waste **does not** exhibit properties of TDGR Class 1 - 9 substances
- ☑ Waste **does not** contain materials from TDGR Column 3, schedule 1
- ☐ Halogenated organic compounds (except tetracholoroethylene) ≤ 100 mg/kg **(British Columbia only)** [3]
- ☐ Tetrachloroethylene ≤ 500 mg/kg and < 3.0 mg/L **(British Columbia only)** [3]

f) Is the waste classed hazardous under applicable waste regulations?
☐ Yes ☐ No

g) Is this a treatment residue of a waste which was previously a regulated waste?
☐ Yes ☐ No
If yes

h) Is the waste classified as non-hazardous due to the Generator's knowledge or understanding of the waste or an exemption under applicable waste regulations?
☐ Yes ☐ No ☐ N/A
If yes

i) Regulated under Transportation of Dangerous Goods?
☐ Yes ☐ No
If yes

TDG information Shipping name: _____

Class: _____ UN no.: _____ Packing group: _____

j) PCB contamination present? ☐ Yes ☐ No

Extractable Organic Halides (EOX) present? ☐ Yes ☐ No

k) [1]Spontaneous combustion testing may be required and a valid SDS sheet (if available)

[2]Water reactivity testing may be required and a valid SDS sheet (if available)

☑ Non-applicable

l) NORM (Natural Occurring Radioactive Material) contamination present?
☐ Yes ☐ No

≤ 70 Bq/g and Radium 226 ≤ 5 Bq/g (Silverberry landfill only)
☐ Yes ☐ No

9. GENERATOR'S CERTIFICATION

I understand that it is the responsibility of the Generator or the Generator's Authorized Representative to determine the characteristics of the Waste material and its proper classification, I hereby certify that the Waste material complies with all federal, provincial and local laws and regulatory criteria, and is acceptable material for landfill at the above selected Tervita landfill. Additionally, I hereby indemnify Tervita and save it harmless from and against any claims, actions, damages, liabilities and expenses including lawyers and other professional fees, in connection with the loss or injury whatsoever arising from or out of any inaccuracy or untruthfulness in the information provided herein. I further agree that this section 9 shall survive the expiry or termination of any Agreements entered into between Tervita and the Generator.

Generator or Generator's Authorized Representative signature

Print Name: Tory Stranaghan

Signature: 

Title / position: Drilling Waste Manager Date: November 8, 2016

TERVITA EARTH MATTERS

WASTE CONFIRMATION FORM

1. GENERATOR INFORMATION

a) **Date: November 22, 2016**
b) **Company: Sureway Logging Ltd.**
c) **Shipping Address or LSD: Site 9433, Plan 3892, Block 2, Lot 15-18**
d) **WAA #: 24011-16-0090-19**
e) **Contact: Dallas Frith (780-539-0388)**
f) **Tervita Initiator: Dallas Wheeler**
g) **Disposal Location:** *SPIRIT RIVER LANDFILL*

Contaminated Soil with gasoline (unleaded)
150-200t

RECOMMENDED MANAGEMENT

Include any special disposal procedures. Landfill, Standard PPE, goggles, gloves, coveralls

Acceptance Conditions: Acceptance subject to landfill fingerprinting procedures.
No free liquids.
Additional wastes other than described above must be preauthorized.
Waste must be stackable.
Landfill requires 24 hours' notice prior to shipping of waste material.
Facility waste acceptance hours are: 8:00 A.M. – 6:00 P.M.
Tervita reserves the right to refuse any waste.
Liner must be cut into 10'x10' pieces.
Cement must be broken or crushed into pieces, NO intact cement bin blocks.

Associated UWI's:

Expires: November 22, 2017

Approval Authorization: _____

Title: Administrator

TERVITA WASTE CONFIRMATION CODE: 24011-16-0090-19