



**PHASE I ENVIRONMENTAL SITE ASSESSMENT & SOIL EXCAVATION PROGRAM
FORMER THE CAT RENTAL STORE WABASCA
2300 TRANSPORT ROAD, WABASCA, AB**

SLR Project No.: 212.06581.00000

Submitted by
SLR Consulting (Canada) Ltd.
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For
Finning (Canada)
a Division of Finning International Inc.
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August 11, 2016

Association of Professional Engineers and Geoscientists of Alberta
Permit to Practice P05449

Prepared by:

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CONFIDENTIAL

Distribution: 2 hard copies & 1 PDF – Finning (Canada) – A Division of Finning International Inc.
1 PDF – SLR Consulting (Canada) Ltd.

- **APEC 4 – Off-site sources:** The site is located within an industrial area of the Hamlet of Wabasca. Searches of a variety of databases presented records of surrounding properties with oil and gas records and documents related to Alberta Environment and Parks (AEP) approvals/authorizations issued under the Water Act and Environmental Protection and Enhancement Act. Based on the various distances to the site, the nearby properties listed in the databases searches are considered a low risk for environmental concern;
- **APEC 5 – Former TCRS ASTs to the west and associated staining:** At least two former ASTs were stored in the fenced yard immediately west of the building containing diesel and/or waste oil. Surface impact was observed in this area as well as to the north of the building along the property line. This APEC was considered a high risk; however, a Soil Excavation Program was completed on-site which involved the remediation of this area. The APEC is now considered low; and
- **APEC 6 – Surface staining on north adjacent property:** The surface staining noted on-site as APEC 5 appears to have migrated onto the adjacent property in the vicinity of the office trailers. This APEC was considered a high risk; however, a Soil Excavation Program was completed at the site which involved the remediation of this area. However, the Soil Excavation Program was completed off-site which involved the remediation of this area and the APEC is now considered low risk.

Although the risks associated with APEC 2 are considered low to medium, to conclusively determine the potential impacts associated with the TCRS operations within the bay a limited soil sampling would be required at the site. No additional work is recommended with respect to APEC 1, 3 and 4. Documented impacts relating to APEC 5 and 6 have been addressed in the Soil Excavation Program.

The following are results of the soil excavation program at the site and the off-site property to the north:

The on-site Soil Excavation Program was executed on May 17, 2016 and was conducted to address the surface staining identified in APEC 5. West Oilfield was retained to supply and operate the equipment. The extent of remedial excavation was approximately 20 m long with a width ranging from 1.5 m to 3.3 m in the fenced yard (Area 1) and approximately 12 m long with a width ranging from 0.3 m to 1.5 m behind the building (Area 2) to depths ranging from 0.1 m to 0.3 m below ground surface (bgs).

Six soil samples were submitted for analysis of benzene, toluene, ethylbenzene, xylenes (BTEX) and petroleum hydrocarbon (PHC) fraction F1 through F4. All samples were below the applicable Tier 1 Guidelines with the exception of sample JU6 which was collected from behind the building and had a PHC F3 concentration above the applicable Tier 1 Guidelines. A soil sample (JU2) collected from the yard was also analyzed for lead, volatile organic compounds (VOCs) and glycols. The concentrations of all these parameters were below the applicable Tier 1 Guidelines. On June 29, 2016 additional remedial excavation activities were completed to remove on-site impacted soil in the vicinity of JU6. The soil sample (JU9) collected at the base of this excavation had BTEX and PHC F1 to F4 concentrations below the applicable Tier 1 Guidelines.

On June 29, 2016, the off-site Soil Excavation Program was executed to address the surface staining on the off-site property (APEC 6). The off-site excavation extent behind the trailers was approximately 38 m long by 1.0 m to 2.9 m wide and the off-site excavation between the trailers

was approximately 4.4 m long by 1.0 m wide. The depth of excavation was approximately 0.2 m below ground surface (bgs), with the exception of one area excavated to 0.5 m and another area excavated to 1.2 m bgs. Five soil samples were submitted for analysis of BTEX and PHC F1 through F4. All five samples had hydrocarbon concentrations below the applicable Tier 1 Guidelines.

A total of 21.42 tonnes of soil from the on-site excavation and 20.04 tonnes from the off-site excavation were disposed of at Tervita Wabasca landfill.

All the excavated areas at the site and in the north adjacent property were backfilled by West Oilfield on the same day they were excavated (May 17, 2016 and June 29, 2016), using imported gravel fill sourced by the subcontractor.

As identified above all soil samples analyzed from the final extents of the on-site and off-site remedial excavations indicated hydrocarbon concentrations below the applicable Tier 1 Guidelines; subsequently the impacted areas on-site and off-site (APEC 5 and APEC 6) have been remediated and no further work is required;

EXECUTIVE SUMMARY

SLR Consulting (Canada) Ltd. (SLR) conducted a Phase I Environmental Site Assessment (ESA) and Soil Excavation Program for Finning (Canada) at a site comprising Plan 9821453, Block 3, Lot 3 located at 2300 Transport Road in the Hamlet of Wabasca, AB, herein after referred to as the "site".

The objective of the Phase I ESA was to identify potential or actual environmental concerns and/or liabilities associated with present and past activities at the site and/or from activities on surrounding properties. The objective of the soil excavation program was to remove the stained and suspected impacted surficial soil identified by the landowner at the site and on the off-site property to the north.

The site comprises a 1.0 hectare (2.5 acre) lot, approximately 160 metres (m) long and 62 m wide, oriented north-south. The site is situated in a multi-tenant property containing a site building with five bays, a shed and gravelled yard. The former The CAT Rental Store (TCRS) occupied the far west bay as well as the fenced yard immediately west of the site building and southwest portion of the yard to store equipment.

The site was leased by Finning (Canada) TCRS since the early 2000s, which provided rental of equipment such as cranes, forklift, work tools, etc. and conducted maintenance on the equipment. The bay used by TCRS is currently occupied by SafeFlo, which supplies and operates a steam and water truck and conducts maintenance to their equipment.

The following areas of potential environmental concern (APEC) have been identified for the site relevant to the TCRS location of occupancy:

- **APEC 1 – Localized staining in TCRS bay:** Minor staining was observed in the bay used by TCRS. The flooring was in good condition with minor cracking. Based on the site observation, it is considered a low risk for environmental concern;
- **APEC 2 – Sump in maintenance bay:** One sump was observed in the midsection of the bay. The interior was not observed at the time of the site inspection since it was underneath a service truck. The sumps in any bay used for washing equipment or performing maintenance have the potential for containing runoff with metals and/or hydrocarbons constituents. The sumps were not accessed; however the lids and surrounding concrete appeared to be in generally good condition during the site visit with no apparent heavy staining observed. Given the age of the building and length of TCRS occupancy, the environmental risk associated with this APEC is considered to be low to medium.
- **APEC 3 – Two ASTs stored east of the site building:** Minor staining observed in this area. The tanks were generally in good condition. It is considered a low risk for environmental concern and not relevant to the former TCRS leased area;



global environmental solutions

**Former The CAT Rental Store Wabasca
2300 Transport Road
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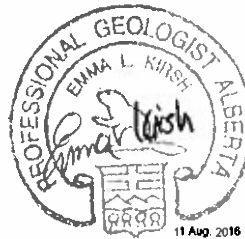
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1.0 INTRODUCTION

1.1 Background

SLR Consulting (Canada) Ltd. (SLR) conducted a Phase I Environmental Site Assessment (ESA) and soil excavation program for Finning (Canada) at a site comprising Plan 9821453, Block 3, Lot 3 located at 2300 Transport Road in the Hamlet of Wabasca, Alberta (AB) (herein after referred to as the "site").

1.2 Objective

The objective of the Phase I ESA was to identify potential or actual environmental concerns and/or liabilities associated with present and past activities at the site and/or from activities on surrounding properties. The objective of the soil excavation program was to remove the stained and suspected impacted soil at the site and on the off-site property that was identified during the Phase I ESA site visit.

2.0 PHASE I ESA

2.1 Scope

This Phase I ESA was conducted in general accordance with the requirements outlined in the Canadian Standards Association (CSA) document, Z768-01 "Phase I Environmental Site Assessment" (November 2001, reaffirmed 2012). The Phase I ESA is based on review and evaluation of available records, interviews, and a site reconnaissance. Table 1 provides a summary of the information sources reviewed as part of this Phase I ESA.

2.2 Site Description

The site is comprised of a 1.0 hectare (2.5 acre) lot, approximately 160 metres (m) long and 62 m wide, oriented north-south. The site is located at 2300 Transport Road in the Hamlet of Wabasca and occupies Lot 3, Block 3, Plan 9821453.

The site plan is shown on attached Drawing 1. Photographs of the site are included in Appendix A.

2.3 Records of Review

2.3.1 Aerial Photographs

Historical aerial photographs dating from 1949 through 2005 and Google Earth imagery from 2012 were reviewed. Aerial photographs reviewed are summarized below and copies of the aerial photographs have been included in Appendix B.

1949 and 1951: The site and the surrounding properties were undeveloped forested areas.

1963: No significant changes were noted from the 1951 photograph. Vegetation clearance occurred southwest of the site which was part of the airstrip of the municipal airport.

1970: No significant changes were noted from the 1963 photograph. Further vegetation clearance extended towards the east of the municipal airport.

1978: No significant changes were noted from 1970 photograph.

1981: No significant changes were noted from the 1978 photograph.

1988: No significant changes were noted from 1981 photograph. Vegetation clearance at the municipal airport extended further east, south and southeast of the site.

1995: No significant changes were noted from the 1988 photograph.

2000: The site and the surrounding properties to the north, south and west were clear of vegetation and vacant. The adjacent land to the east was undeveloped.

2005: The site building was present in the northwest portion of the site. Possible storage containers were stored northwest and northeast of the site building. Large trucks and/or trailers appeared to be stored in the east portion of the yard. Commercial and/or passenger vehicles appeared to be stored and/or parked in the southwest portion of the yard along the site boundary. The site was fenced around the perimeter. The adjacent properties to the north, northwest and south were vacant. Industrial development had occurred on west adjacent property with a building and yard.

2012: Equipment was stored in the fenced yard immediately west of the site building. Large trucks and/or equipment were stored in south portion of the yard along the fence. It appeared that an additional container was stored northeast of the site building. Vehicle ingress was present between the site and north adjacent property in the northeast portion of the site.

Industrial development occurred on surrounding properties to the north and northwest with various buildings and yard storage/sheds along the perimeter. Two office trailers on the neighbouring property to the north were stored immediately north and northwest of the site building and a small trailer/container was stored immediately northeast of the site building. The adjacent properties to the south and southwest appeared to be used as storage yards.

2.3.2 Land Titles

A historical title search was conducted from the current ownership back to when the site was Crown Land, through the Northern Alberta Land Titles office. The current titleholder for Lot 3, Block 3, Plan 9821453 is Landing Trail Construction Ltd. who has held the title since 2014. Prior to this, A.I.M. Holdings Inc., Gemwood Construction Ltd. and Municipal District of Opportunity No. 17 held the title dating back to 1988. The parcel was subdivided from Crown Land in 1998 into its current boundaries. Copies of the land titles are presented in Appendix C.

2.3.3 Insurance Reports

Fire insurance maps and property underwriter's reports and/or plans were developed for use by insurance companies to depict facilities and properties and their uses for many locations throughout North America. These maps provide prior land use history and assist in assessing whether there may be potential environmental contamination on or near the subject property. These maps, which have been periodically updated since the late 19th century, often provide valuable insight into historical site uses. A search of the available fire insurance plans for Alberta conducted through Western University's online library catalogue (<https://www.lib.uwo.ca/madgic/fipab.html>) was completed. No records were available for the site and the plans only tend to be available for urban areas developed prior to 1975.

2.3.4 Directory Search

A search of the Provincial Archives of Alberta directory availability (<http://culture.alberta.ca/paa/archives/research/directories.aspx#city>) indicates no city directories are available to review for the site.

2.3.5 Previous Environmental Studies

SLR is unaware of any previous environmental studies completed at the site.

2.3.6 Owner Records

No owner records were available for SLR to review.

2.3.7 Interviews

During the site visit, an interview was conducted with Mr. Phil Brown, the landowner. Mr. Brown explained the general operations of the previous and current tenants including chemical use and storage, disposal practices, sump systems and building construction.

2.4 Regulatory Records Review

2.4.1 Town Records

A request was submitted to the Municipal District of Opportunity No. 17 for any documentation related to the subject property. Raven Cardinal, Development Officer, from the Lands, Planning and Development department indicated that they did not have any records on file regarding the site. A record of the response is provided in Appendix C.

2.4.2 Alberta Energy Regulator

The Alberta Energy Regulator (AER) is the governing organization for all upstream oil and gas facilities in Alberta. An environmental records search was conducted using the Abacus Datagraphics (Aba-Data) search engine. The results returned several pipelines, facilities, well and spill/incident records in the general area around the site including:

- One well record located within the legal description of Section 26 – Township 80 – Range 25 – West 4 Meridian (26-80-25-W4M) at legal subdivision (LSD) 10, located 130 m southeast of the site and within the legal subdivision, was operating and produced natural gas;
- Two spill records located within 26-80-25-W4M at LSD 10, located 130 m southeast of the site and within the legal subdivision. The spill relates to leaks of salt/produced water and natural gas from a pipeline in 1999. The pipeline was struck in 2006 and no information of a spill was indicated in the record. The pipeline has been abandoned;
- One spill record located within 26-80-25-W4M at LSD 8, located 455 m southeast of the site and in the same quarter section. The spill relates to leaks of salt/produced water and natural gas from a pipeline in 1999; and

- Various pipeline right of ways (ROWs) carrying crude oil, natural gas and high vapour products, including a main pipeline ROW located 280 m south of the site containing facilities owned by Canadian Natural Resources Limited, Nova Gas Transmission Ltd. and AltaGas Ltd.

Of the three release reports reviewed, all related to leaks of natural gas and salt/produced water from pipelines at a distance of 130 m to 455 m from the site and are not considered to present any environmental concern to the site.

A copy of the search results is presented in Appendix C.

2.4.3 Approval/Authorization Viewer

The Alberta Environment and Parks (AEP) Approval/Authorization on-line viewer was accessed and reviewed for the site and surrounding land parcel descriptions and legal land location. The results identified with Section 26-80-25-W4M were permits related to construction, operation or reclamation of a storm drainage system.

A copy of the search results is presented in Appendix C.

2.4.4 Environmental Risk Information Services

As part of the regulatory database review, SLR requested a search from ERIS. The ERIS regulatory search was completed for the site and surrounding properties within 250 m. There were no records reported for this site. Nine records were reported from the surrounding properties and are discussed below. A copy of the ERIS *Standard Report* is provided in Appendix C.

2.4.4.1 Alberta Oil and Gas Wells

The Alberta Energy Utilities Board – now the Alberta Energy Regulator (AER) – maintained a database of all oil and gas wells drilled in the province of Alberta. The database contains information on well name, licensee name, license number, location, status, total well depth and date of final drilling. ERIS noted that this database will not be updated, information on wells drilled after September 2003 can be found in the Oil and Gas Wells (OGW) database under the 'Private Source Database' section.

A search of the Alberta Oil and Gas Wells (AOGW) database, dated 1883 to September 2003 acquired three records of the same well within 26-80-25-W4M at LSD 10 located approximately 83 m east of the site. The records indicated that this well was drilled and cased in October 1996 and flowed gas fluid and abandoned in December 1997. The well was drilled to 462 m below ground surface (bgs).

Based on the aerial photos in 2000, there was no evidence of well presence east of the site; the land was undeveloped. There was one present 130 m southeast of the site which is likely the well that was reported.

2.4.4.2 *ERIS Historical Searches*

ERIS compiled records of environmental risk reports completed since March 1999. Available information for this database includes site location, date of report, type of report, and search radius. The search radius of all records reported was 250 m.

The two results indicated that a complete or standard ERIS report was requested from nearby properties located approximately 59 m north and 178 m southwest from the site.

2.4.4.3 *Field Inspection Incident Report*

Received from the Alberta Energy Regulator (AER) – formerly the ERCB (Energy Resources Conservation Board) and EUB (Energy Utilities Board) – this database, which used to be called EISL (Environmental Information System Listing) contains reported environmental incidents beginning in 1975. Descriptions include noise infractions, air quality emissions, oil spills and failures for pipelines, wells, plants, and batteries. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

A search of the Field Inspection Incident Report database dated 1975-2015 acquired three records within 26-80-25-W4M at LSD 10 located approximately 83 m east of the site. The records indicated release of salt/produced water or raw natural gas product in 1999. The pipeline was struck in 2006. These records are identical to the ones acquired from Aba-Data, where the pipeline was located 130 m southeast of the site.

2.4.4.4 *Oil and Gas Wells*

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

A search of the Oil and Gas Wells database, dated 1988-2015 acquired one record within 26-80-25-W4M at LSD 10 located approximately 83 m east of the site. The natural gas well was developed in 1996 and drilled to 431 m bgs.

2.5 Site Visit

2.5.1 *Methodology and Limiting Conditions*

SLR completed the site visit on May 16, 2016. The Phase I ESA site visit was conducted in accordance with the requirements outlined in the CSA document, Z768-01 "Phase I Environmental Site Assessment" and SLR's standard operation field procedures, in addition to all applicable guidelines, standards, and regulations. SLR had full access to the site. Although a visual inspection of the interior of the building was completed as part of this Phase I ESA, the building inspection component does not include a hazardous building materials survey.

2.5.2 Current Property Use

The CAT Rental Store (TCRS) already vacated the site at time of visit. The site is situated in a multi-tenant property that encompasses approximately 1.0 hectares (2.5 acres) containing a site building, shed and gravelled yard. The site building was constructed in early 2000s. The former TCRS occupied one of the five bays in the far west as well as the fenced yard immediately west of the building and the southwest portion of the yard to store equipment. This bay is currently occupied by SafeFlo at the time of the site visit. SafeFlo supplies and operates a steam and water truck that were stored in the yard and conduct maintenance of their equipment. Jurassic Vac occupied the three middle bays, which supplies and operates hydrovac trucks and uses the two bays as a maintenance shop and the one bay for parts storage. SafeFlo also occupied the east bay as a temporary paint shop. North Horizon Swamp Mats occupied the northeast portion of the yard for office and housing purposes.

The previous occupant of the far west bay was TCRS, which provided rental of equipment such as cranes, forklift, work tools, etc. and carried out maintenance of the equipment. The site was occupied by TCRS from early 2000s to January 2016. Drawing 1 presents a site plan. Photographs of the site visit can be found in Appendix A.

2.5.3 Current Surrounding Land Use

The site is situated in an industrial area in the Hamlet of Wabasca. The land use surrounding the site comprises the following:

- North: industrial facilities to the north (Jurassic Vac) and to the northwest (KMC Oilfield Services Ltd. and a yard), followed by undeveloped land beyond;
- East: undeveloped land;
- South: an equipment storage yard (C. Herman Trucking), followed by industrial facilities (Pyramid Corporation and NAPA AutoParts) and a well site to the southeast, then Secondary Highway 813 and an industrial facility beyond; and
- West: Transport Road, followed by an industrial facility (AltaGas Utility) and an unidentified light industrial facility to the southwest, then industrial facilities and beyond.

2.5.4 Interior Observations

The site building is constructed of concrete block with a concrete slab on grade and is wood framed with metal cladding. The building encompasses approximately 450 square metre (m²), comprising of five bays. The SafeFlo bay encompasses approximately 116 m², which consisted of an office, washroom and maintenance area that was open from grade to the ceiling with fluorescent lighting used in the office and washroom and halide lighting in the maintenance area. Minor localized staining was observed in the maintenance area. The flooring was observed in good condition with minor cracking.

2.5.5 HVAC Systems

A boiler powered by natural gas was observed. SLR was informed that a hot water heating system was embedded in the cement floor.

2.5.6 Chemical Inventory

A summary of chemicals and products noted in the bay formerly occupied by TCRS is provided below:

- Six unopened 20 litres (L) of degreaser solvent (AccuSolve);
- One unopened 20 L heavy duty heat transfer fluid (Chemfax);
- One unopened 4 L pump oil;
- Various motor oil in 926 millilitres (mL) to 4.7 L containers;
- Various industrial paint in 470 mL to 15.1 L containers;
- One opened 3.8 L lacquer thinner;
- Six empty jerry cans for storing gasoline or diesel;
- One quarter full jerry can containing gasoline;
- Two unopened 9.5 L of heavy duty coolant; and
- One 20 L pail containing transmission oil attached with a pump.

2.5.7 Waste Management Activities

The solid waste generated at the site was stored in a garbage bin and collected by the Municipal District of Opportunity No.17. Waste chemicals were disposed at the municipal landfill. The used rags were stored in a large plastic bucket.

2.5.8 Storage Tanks

Two 2,200 L double walled steel above storage tanks (ASTs) were observed northeast of the site building on top of a wooden platform. The ASTs were used to store waste oil generated by the current site building tenants. The ASTs appeared in good condition. Minor staining was observed around the ASTs. SLR was informed that TCRS did not use these tanks for storing waste oil.

SLR was informed by the landowner that there were possibly two former ASTs used by TCRS that were stored in the northwest portion of fenced yard. The ASTs were used to store diesel and/or waste oil. Surface staining was observed around this area, where the former ASTs were stored, and associated staining was observed behind the site building. In addition, the staining was also identified off-site on the property to the north. The areas of the surface staining are resented in Drawing 1.

2.5.9 Drains and Sumps

One sump was observed in the midsection of the maintenance area in the bay formerly occupied by TCRS. The sump was under a service truck at the time of the site visit; therefore,

the interior was not inspected. SLR was informed that the sump was directly connected to the municipal sewer.

There were no surface water drainage catch basins or manholes observed during the site visit. Surface water generally percolates into the ground or drains towards the perimeter of the property.

2.5.10 Fill, Pits, or Excavations

The site yard is primarily unpaved with gravel fill. No open excavations were observed.

2.5.11 Fugitive and Non-Fugitive Emissions

There were no obvious air discharges at the site. The NPRI database was searched by ERIS and did not indicate any pollutant release information for the site and surrounding area.

2.5.12 Wetlands

There was no wetland areas observed at the site.

2.5.13 Adjacent Properties Observations

No ASTs or chemical storage were observed in the adjacent properties.

2.5.14 Special Attention Items

A hazardous building materials survey was not identified as a requirement of the scope of work and is not considered within the scope of a CSA Phase I ESA; however, the building age can be used in an effort to identify obvious special attention items that may potentially exist at the site. A summary of special attention item background information including building material properties, regulation changes and relevant dates is provided in Table 2 for reference.

Based on the original site development during between 1997 and 2009 it is unlikely that there are polychlorinated biphenyls (PCBs), asbestos containing materials, or urea-formaldehyde foam insulation (UFFI) present within the building. There is potential for lead based paint to be present above the 2011 regulation levels.

Florescent light tubes were observed during the site visit which likely contains mercury. Based on the age of the structure, other mercury-containing equipment may be present. There is a possibility of ozone depleting substances (ODS) in any HVAC, fridges or freezers located within the building. No apparent visual evidence of mould and water staining was observed in the site visit.

Based on local geology and the national radon mapping (*Cross-Canada Survey on Radon Concentrations in Homes*; Health Canada; 2012), there is likely low potential for radon gas to be present. To determine the presence of radon at the site, a radon survey would have to be undertaken.

3.0 SOIL EXCAVATION PROGRAM

Based on the Phase I ESA observations and discussions with Finning (Canada) it was determined that a soil excavation program was required to address the surface staining

observed on the on-site and off-site property. Finning provided SLR authorization to carry out the remedial work on the impacted soil against the Alberta Tier 1 Guidelines.

3.1 Scope of Work

The scope of work consisted of the following activities:

- Preparation of a Health and Safety Plan;
- Collection of soil samples in the excavation;
- Field screening all samples for combustible vapour concentrations (CVCs);
- Submission of seven soil samples collected at the site to Maxxam Analytics (Maxxam) in Edmonton, AB for analysis of benzene, toluene, ethylbenzene, xylenes (BTEX) and petroleum hydrocarbon (PHC) fractions F1 to F4 and one sample further analyzed for lead, glycols and volatile organic compounds (VOCs). Submission of one soil sample for grain size analysis;
- Submission of five soil samples collected at the north adjacent property to Maxxam for analysis of BTEX and PHC F1 to F4;
- Submission of one stockpile composite sample for analysis of toxicity characteristic leaching procedure (TCLP) BTEX, TCLP metals, pH, flash point and paint filter test to determine Class II landfill suitability;
- Arrange for Class II landfill disposal approval on behalf of Finning (Canada) at the Tervita Wabasca Landfill; and
- Provide a report of the site reconnaissance, remedial activities undertaken, sampling procedures, locations, analytical results and discussion.

3.2 Regulatory Framework

The Alberta Tier 1 and Tier 2 Soil and Groundwater Remediation Guidelines, February 2016 (herein after referred to as the Tier 1 Guidelines and/or Tier 2 Guidelines, where applicable) is the regulatory framework for the site. There are three management options available under this framework including Tier 1, Tier 2, and Exposure Control. Sites have different sensitivities and risks because of land use, receptors and site conditions. The Tier 1 Guidelines were developed as generic guidelines that are protective of the most sensitive situations and are based on the assumption that all exposure pathways and receptors relevant to a particular land use are present at the site. The Tier 2 approach allows for a modification of the generic Tier 1 Guidelines by considering site-specific conditions and by removing exposure pathways that may not be applicable to the site. Exposure control involves risk management through exposure barriers or administrative controls based on site-specific risk assessment.

Site-specific information applicable is as follows:

- The Municipal District of Opportunity No. 17 zoning bylaw indicates that the site and surrounding areas are zoned as Airport Industrial District (M3) and consist of industrial related activities;

- The closest surface water body is an unnamed creek/river located approximately 1.2 kilometres (km) east of the site and the next nearest surface water body is North Wabasca Lake located approximately 2.0 km southwest of the site;
- The shallow stratigraphy observed at the site consisted of sand and gravel fill in the yard area and surficial topsoil behind the building underlain by clay material. The stratigraphy noted in the north adjacent property was surficial topsoil behind the existing office/staff trailers and sand and gravel fill between the trailers underlain by clay materials. One grain size analysis from the current work area confirmed the soil is fine-grained; and
- A search of the Alberta Water Well Information Database indicated no well records are present within 1 km search radius.

Based on the above site-specific information, the applicable criteria for assessment at the site are the Tier 1 Guidelines for Industrial Land Use, Fine-Grained Soil, including all operative site-specific exposure pathways and receptors.

3.3 Methodology

Soil samples were generally collected on a 5 m lateral spacing at the base of the remedial excavation. These soil samples were collected by hand digging with a shovel/hand auger, trimmed and sealed in plastic bags. Field procedures were implemented to minimize the potential of cross contamination between sampling locations. Field handling of soil samples was minimized by transferring samples directly into containers, when possible. Where handling was required, disposable nitrile gloves were used at all times and were changed between samples.

After the samples had been warmed to approximately 20°C, the available headspace was sampled for CVCs using an Eagle RKI hydrocarbon vapour analyzer calibrated to a hexane standard with methane elimination enabled. Duplicate samples filled with minimal headspace were collected in 125 mL glass jars supplied by the laboratory and fitted with Teflon-lined lids. The jarred soil samples were held in cold storage until selected samples were submitted to Maxxam in Edmonton, AB.

3.4 Results

3.4.1 Site Reconnaissance

The on-site surface staining identified during the Phase I ESA site visit was located in north portion of the fenced yard immediately west of the site building (Area 1) and behind the building (Area 2). Area 1 was located approximately 3.7 m west of northwest corner of the site building along the north boundary and was approximately 20 m long with a width ranging from 1.5 m to 3.3 m. Area 2 was located approximately 7 m west of the northwest corner of the building in between the building and the north boundary fence and approximately 12 m long with a width ranging from 0.3 m to 1.5 m. Based on the aerial photographs, the north adjacent property used the south portion of their property to store the office/staff trailers. No indication of storage tanks were observed at this area at the time of the site visit. A partially buried septic tank was observed behind the west trailer, which was in good condition and had no indication of spillage. It appears that the source of surface staining was from on-site, which travelled onto the off-site property to the north adjacent property and moved downslope towards the east to a low lying area.

The off-site surface staining was identified on the property immediately north of the TCRS facility, currently owned and operated by Jurassic Vac. The majority of the staining was behind the existing trailers with some staining identified between the trailers. The staining behind the trailers was estimated to be 38 m long with a width ranging from 1.0 m to 2.9 m. The staining between the trailers was estimated with a size of approximately 4.4 m by 1.0 m. Both of these areas were located within a restricted space (between the trailers and property fence). The area behind trailers were covered with vegetation and egress was restricted due to lumber attached to the base of the office trailers, an aboveground water/sewer line connected from the east trailer to the site building, and contained aboveground utilities.

3.4.2 Remedial Excavation

Prior to any remedial activities an Alberta One Call was contacted to locate public underground utilities and SLR retained On The Mark Line Locating & Safety Services of Slave Lake, AB to conduct a underground utility search of the work areas for any private utilities that might be present. A communication and power line were identified within in the work area. To ensure that these lines were not encountered during excavation, SLR field personnel and a labourer with West Oilfield Hauling Ltd. (West Oilfield) carried out a shallow dig at multiple locations of the marked lines to assess if it was present within the upper 0.5 m layer of soil.

West Oilfield conducted the on-site remedial activities on May 17, 2016, using a rubber hoe at Area 1 and a mini hoe at Area 2. The excavations in both areas were rectangular in shape. The excavation extent at Area 1 was approximately 20 m long by 1.5 m to 3.3 m wide and Area 2 was approximately 12 m long by 0.3 m to 1.5 m wide. Both excavations were approximately 0.2 m deep. The locations of the excavation and extents are shown on Drawing 1.

Off-site and additional on-site remedial activities were conducted on June 29, 2016. Additional remedial excavation activities were completed to remove impacted soil in the vicinity of JU6. The off-site excavation program was executed to address the surface staining on the off-site property. The off-site excavation extent behind the trailers was approximately 38 m long by 1.0 m to 2.9 m and the off-site excavation between the trailers was approximately 4.4 m long by 1.0 m wide. The depth of the excavation was approximately 0.2 m bgs, with the exception of the one area excavated to 0.5 m and another area excavated to 1.2 m bgs. The soil stratigraphy identified consisted of topsoil or surficial gravel fill followed by clay to the maximum depth of assessment of 1.2 m bgs, the maximum depth of remedial excavation.

Based on the landfill receipt summary, a total of 21.42 tonnes of soil from the on-site excavation program and 20.04 tonnes of soil from the off-site excavation program were disposed of at the Tervita Wabasca landfill.

3.4.3 Soil Sampling

On May 17, 2016, five soil samples (JU1 through JU5) were collected in the yard (Area 1) below the excavation base at depths ranging from 0.1 m bgs to 0.2 m bgs. Three soil samples (JU6 through JU8) were collected behind the building (Area 2) at the same depth range. Field screening for headspace CVCs indicated results of 0 parts per million (ppm) in all samples. The sample locations are presented on Drawing 1. A total of six soil samples were submitted to Maxxam for laboratory analysis of BTEX and PHC F1 to F4. One sample (JU2) was further analyzed for lead, VOCs and glycols. One representative soil sample was submitted for grain size analysis and the stockpile composite was submitted for analysis of Class II landfill parameters.

On June 29, 2016, one on-site soil sample (JU9) was collected at a depth of 0.3 m bgs, where sample JU6 was subsequently removed. In addition, fifteen soil samples were collected from the off-site property. These samples were collected from the base of the excavations at depths ranging from 0.1 m to 1.2 m bgs. Field screening of headspace CVCs indicated results of 0 ppm in JU15 to 150 ppm in JU33. One on-site soil sample and five off-site soil samples were submitted to Maxxam for analysis of BTEX and PHC F1 to F4. A summary of the soil sampling and CVCs is presented in Table 3 and photographs taken at the site are provided in Appendix A.

3.4.4 Soil Chemistry Results

All soil samples analyzed for petroleum hydrocarbons had concentrations below the applicable Tier 1 Guidelines with the exception of sample JU6 collected behind the building (Area 2) that had a concentration of PHC F3 above the referenced guidelines. However, the soil was further removed in the vicinity of JU6 and the sample collected at the base of the excavation (JU9) had hydrocarbon concentrations below the Alberta Tier 1 Guidelines. The concentrations of lead, VOCs and glycols in sample JU2 were all below the Tier 1 Guidelines.

One composite was collected from the excavated material. This stockpile sample (CS1) identified all laboratory results met Class II landfill requirements. The stockpiled material was hauled to the Tervita Wabasca landfill by West Oilfield on July 1, 2016. SLR was not present during the hauling of the excavated stockpile soil.

The hydrocarbon, lead, VOC, glycol and landfill analytical results are summarized in Tables 4, 5, 6, 7 and 8, respectively. The laboratory report is provided in Appendix D and a summary of landfill tickets is provided in Appendix E.

3.4.5 Excavation Backfilling/Restoration

All excavated areas at the site and off-site were backfilled by West Oilfield using imported gravel fill sourced by the subcontractor.

3.4.6 Quality Assurance and Quality Control (QA/QC)

Maxxam Analytics is a Canadian Association for Laboratory Accreditation Inc. (CALA) accredited laboratory that uses Ministry of Environment recognized methods to conduct laboratory analyses. As conveyed by the laboratory, method blanks, control standards samples, certified reference material standards, method spikes, replicates, duplicates and instrument blanks are routinely analyzed as part of their QA/QC programs. SLR has reviewed the data and verifies that the laboratory internal QA/QC results fall within the lab's own specified acceptance criteria or has been appropriately qualified within the laboratory report.

3.5 Discussion

All soil samples analyzed from the final extents of the excavation on-site and off-site indicated hydrocarbon concentrations below the applicable Tier 1 Guidelines. The surface staining areas on-site and off-site have been remediated and no further work is required.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Phase I ESA

The following APECs were identified for the site relevant to the TCRS location of occupancy:

- **APEC 1 – Localized staining in TCRS bay:** Minor staining was observed in the bay used by TCRS. The flooring was in good condition with minor cracking. Based on the site observation, it is considered a low risk for environmental concern;
- **APEC 2 – Sump in maintenance bay:** One sump was observed in the midsection of the bay. The interior was not observed at the time of the site since it was underneath a service truck. The sumps in any bay used for washing equipment or performing maintenance have the potential for containing runoff with metals and/or hydrocarbons constituents. The sumps were not accessed; however the lids and surrounding concrete appeared to be in generally good condition during the site visit with no apparent heavy staining observed. Given the age of the building and length of TCRS occupancy, the environmental risk associated with this APEC is considered to be low to medium.
- **APEC 3 – Two ASTs stored east of the site building:** Minor staining observed in this area. The tanks were generally in good condition. It is considered a low risk for environmental concern and not relevant to the former TCRS leased area;
- **APEC 4 – Off-site sources:** The site is located within an industrial area of Hamlet of Wabasca. Searches of a variety of databases presented records of surrounding properties with oil and gas records and documents related to AEP approvals/authorizations issued under the Water Act and Environmental Protection and Enhancement Act. Based on the various distances to the site, the nearby properties listed in the databases searches are considered a low risk for environmental concern;
- **APEC 5 – Former TCRS ASTs to the west and associated staining:** At least two former ASTs were stored in the fenced yard immediately west of the building containing diesel and/or waste oil. Surface impact was observed in this area as well as to the north of the building along the property line. This APEC was considered a high risk; however, a Soil Excavation Program was completed on-site which involved the remediation of this area. The APEC is now considered low risk; and
- **APEC 6 – Surface staining on north adjacent property:** The surface staining noted on-site as APEC 5 appears to have migrated onto the adjacent property in the vicinity of the office trailers. This APEC was considered a high risk. However, the Soil Excavation Program was completed off-site which involved the remediation of this area and the APEC is now considered low risk.

Although the risks associated with APEC 2 are considered low to medium, to conclusively determine the potential impacts associated with the TCRS operations within the bay a limited soil sampling would be required at the site. No additional work is recommended with respect to APEC 1, 3, 4, 5 and 6. APEC 5 and 6 have been addressed in the Soil Excavation Program which is discussed below.

4.2 Soil Excavation Program

All soil samples analyzed from the final extents of the excavation on-site and off-site indicated hydrocarbon concentrations below the applicable Tier 1 Guidelines. The surface staining areas on-site and off-site have been remediated and no further work is required.

5.0 STATEMENT OF LIMITATIONS

This report has been prepared and the work referred to in this report has been undertaken by SLR Consulting (Canada) Ltd. (SLR) for Finning (Canada), a Division of Finning International Inc., hereafter referred to as the "Client". It is intended for the sole and exclusive use of Finning (Canada), a Division of Finning International Inc. Other than by the Client and as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted unless payment for the work has been made in full and express written permission has been obtained from SLR.

Any conclusions or recommendations made in this report reflect SLR's professional opinion based on limited investigations including: visual site inspection(s) on the date(s) set out in this report; examination of public records and interviews with individuals having information about the site. While efforts have been made to substantiate information provided by third parties, SLR makes no representation or warranty as to its completeness or accuracy.

This report has been prepared for specific application to this site and conditions existing at the time work for the report was completed. Unless otherwise stated, the findings cannot be extended to previous or future site conditions and portions of the site which were unavailable for direct investigation. Unless otherwise stated in the report, surface and/or subsurface soil, groundwater, vapour; chemical parameters; or materials were not investigated directly; or chemical parameters, materials or analysis were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site; and substances addressed by the investigation may exist in areas of the site not investigated or in quantities not ascertained.

Nothing in this report is intended to constitute or provide a legal opinion. SLR makes no representation as to the requirements of or compliance with environmental laws, rules, regulations or policies established by federal, provincial or local government bodies. Revisions to the regulatory standards referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary.

The Client may submit this report to the Alberta Environment and Parks and/or related Alberta environmental regulatory authorities or persons for review and comment purposes.

TABLES

Former TCRS Wabasca
Phase I ESA & Soil Excavation Program
Plan 9821453, Block 3, Lot 3
Wabasca, AB
SLR Project No.: 212.06581.00000

Table 1
Summary of Information Sources

Information Source	Status	Comments
HISTORICAL RECORDS		
Aerial Photographs	A	1949 to 2005 (Alberta Environment and Parks [AEP] Air Photo Distribution) and 2012 (Google Earth – images).
Land Title Documents	A	1988 to current – Northern Alberta Land Titles Office
Fire Insurance Maps	N/A	Western University's online library catalogue (https://www.lib.uwo.ca/madgic/fipab.html) for availability. Order through Environmental Risk Information Service (ERIS) database of fire insurance plans and insurance site inspection reports if available.
Municipal Directories	N/A	Provincial Archives of Alberta directory availability (http://culture.alberta.ca/paa/archives/research/directories.aspx#city). Order through ERIS database of municipal directories.
Previous Environmental Reports	N/A	Provided through client and/or Alberta Environment & Parks Environmental Site Assessment Repository (ESAR).
REGULATORY RECORDS		
Municipal District or City/Town Records	N/A	No records available.
Alberta Energy Regulator (AER)	A	Registered oil and gas facilities, pipelines, spills, production info, etc. via Abacus Datagraphics Ltd. Online Database.
AEP	A	Authorization/Approval viewer & ESAR via ERIS.
Various provincial and federal databases	A	ERIS Report
INTERVIEWS	A	May 16, 2016
SITE VISIT	A	May 16, 2016

Notes:

A – Available

N/A – Not Available

Table 2
Special Attention Items – Background Information

Item	Description
Polychlorinated Biphenyls	Polychlorinated biphenyls (PCBs) consist of a family of 209 congeners of structurally similar chemicals which are known to suppress the immune system, disturb behaviour and reproduction, contribute to population declines in wildlife, have toxic effects on the developing nervous systems and on liver enzymes, act as a cancer promoter, and cause birth defects. Due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties PCB were used in industrial and commercial applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other applications (<i>Polychlorinated Biphenyls</i> , United States Environmental Protection Service, May 12, 2007). The manufacture and distribution of PCBs was halted in the United States in 1976 and in Canada in 1977.
Asbestos Containing Materials	Asbestos historically has been used in building materials, paper products, plastics, and other products. Exposure mainly occurs in indoor air where it may be released from these materials. Effects on the lung are a major health concern from asbestos, as chronic (long-term) exposure to asbestos in humans via inhalation can result in a lung disease termed asbestosis. The United States Environmental Protection Agency banned most uses of asbestos in 1989. (Asbestos, United States Environmental Protection Service, May 12, 2007). Health Canada has encouraged provincial occupational health authorities to adopt stringent workplace exposure limits for asbestos. The sale of pure asbestos and certain high-risk consumer products that are composed of or contain asbestos fibres is strictly regulated under the <i>Hazardous Products Act</i> . In addition, the emissions of asbestos into the environment from mining and milling operations are subject to the <i>Canadian Environmental Protection Act</i> (Health Risks of Asbestos, Health Canada, 2005).
Urea Formaldehyde Foam Insulation	Urea-formaldehyde is used mainly to produce resins used in particleboard products, which includes insulation products. Exposure to urea formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute (short-term) and chronic (long-term) inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation (PFP#702639118, United States Environmental Protection Service, July 31, 2000). Urea-formaldehyde foam insulation (UFFI) has been banned for use in Canada since 1980 (<i>Urea-Formaldehyde Foam Insulation</i> , Canada Mortgage and Housing Corporation, 2007).
Lead	The <i>Surface Materials Coatings Regulations</i> (2005), implemented by the Federal Government of Canada and amended further in 2011, reduced the allowable level of lead in surface paint to 90 mg/kg. Any painted building materials that may come into contact with children or pregnant women with a lead concentration greater than 90 mg/kg (0.009 percent by weight) would be considered a hazardous material.
Mercury	In Alberta, mercury contained within fluorescent light tubes is not considered a hazardous waste under the <i>Alberta User Guide for Waste Managers</i> (1996); however, should be treated and handled based on its Transportation of Dangerous Goods Class typically falling into either Class 8 or 9.3 and should be recycled or disposed of accordingly (http://environment.gov.ab.ca/info/library/7640.pdf). Removal and handling of any mercury containing switches should be done in an environmentally responsible manner. Recycling of fluorescent light tubes should be performed by a qualified contractor.

Table 2
Special Attention Items – Background Information

Item	Description
Ozone Depleting Substances	Use of Ozone Depleting Substances (ODS) in Alberta is regulated since 2000 by the <i>Ozone Depleting Substances and Halocarbons Regulation</i> (Alberta Regulation 181/2000). There is a possibility of ODS in the HVAC system, and in any fridges or freezers located within the building.
Mould	In a home or building, mould can be found growing on wood, drywall (plaster/gypsum/ Sheetrock®), upholstery, fabric, wallpaper, drapery, ceiling tiles, and carpeting. Health effects are primarily long-term due to inhalation of mould by-products or "mycotoxins." Current guidelines for mould concentrations are compared to "Fungal Concentrations in Public Buildings: Health Effects and Investigation Methods", published by Health Canada in 2004.
Radon	Radon is a colourless, tasteless, radioactive gas that has a half-life of 3.8 days. The health risk potential of radon is associated with its rate of accumulation within confined areas, particularly confined areas near or in the ground, such as basements, where vapours can readily transfer to indoor air from the ground through foundation cracks or other pathways. Large, adequately ventilated rooms generally present limited risk for radon exposure.

Table 3
Summary of Field Soil Vapour Sampling

Sample Number	Date (dd-mm-yyyy)	Sample Depth (m)	Soil Vapour Concentration (ppm)*	Lab Analysis	Comments
On-site					
JU1	17-May-2016	0.2	0	**	Excavation base
JU2	17-May-2016	0.2	0	**	Excavation base
JU3	17-May-2016	0.2	0		Excavation base
JU4	17-May-2016	0.2	0	**	Excavation base
JU5	17-May-2016	0.1	0	**	Excavation base
JU6	17-May-2016	0.2	0	**	Excavation base - Removed
JU7	17-May-2016	0.2	0		Excavation base
JU8	17-May-2016	0.1	10	**	Excavation base
JU9	29-Jun-2016	0.3	10	**	Excavation base
Off-site (Jurassic Vac)					
JU11	29-Jun-2016	0.2	25	**	Excavation base
JU13	29-Jun-2016	0.2	5		Excavation base
JU15	29-Jun-2016	0.2	0	**	Excavation base
JU17	29-Jun-2016	0.2	20		Excavation base - Removed
JU18	29-Jun-2016	0.5	25		Excavation base
JU19	29-Jun-2016	0.2	30		Excavation base - Removed
JU20	29-Jun-2016	0.6	15		Excavation base - Removed below JU19
JU21	29-Jun-2016	0.2	15		Excavation base
JU23	29-Jun-2016	0.1	10	**	Excavation base
JU25	29-Jun-2016	0.1	10		Excavation base
JU27	29-Jun-2016	0.1	5		Excavation base
JU29	29-Jun-2016	0.1	10	**	Excavation base
JU32	29-Jun-2016	0.9	140		Excavation base - Removed below JU20
JU33	29-Jun-2016	1.1	150		Excavation base - Removed below JU33
JU34	29-Jun-2016	1.2	15	**	Excavation base
Stockpile					
COMP-1	17-May-2016	n/a	0	**	Stockpile composite

Notes:

* Soil vapour concentrations were measured using an Eagle Rkl vapour analyzer calibrated to a hexane standard and using methane exclusion.

** Soil sample submitted to Maxxam Analytics, Edmonton, AB

m - metres

ppm - parts per million

Table 4
Summary of Soil Analytical Results - Hydrocarbons

Sample Number	Date	Soil CVC	Depth	Benzene	Toluene	Ethyl- benzene	Xylenes	F1 (C ₉ -C ₁₀)	F2 (>C ₁₀ -C ₁₄)	F3 (>C ₁₀ -C ₂₄)	F4 (>C ₂₄ - C ₅₀)
	(dd-mm-yyyy)	(ppm)	(m bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Tier 1 Guidelines, Industrial, Fine-Grained Surface Soil (<3 m)¹											
Final Extents - Onsite											
JU1	17-May-2016	0	0.2	<0.0050	0.028	<0.010	<0.040	<12	<10	1,800	69
JU2	17-May-2016	0	0.2	<0.0050	<0.020	<0.010	<0.040	<12	20	1,700	72
JU4	17-May-2016	0	0.2	<0.0050	<0.020	<0.010	<0.040	<12	<10	480	<50
JU5	17-May-2016	0	0.1	<0.0050	<0.020	<0.010	<0.040	<12	<10	97	<50
JU8	17-May-2016	0	0.1	<0.0050	0.029	<0.010	<0.040	<12	<10	57	<50
JU9	29-Jun-2016	10	0.3	<0.0050	<0.020	<0.010	<0.040	<12	<10	300	<50
Final Extents - Off-site (Jurassic Vac)											
JU11	29-Jun-2016	25	0.2	<0.0050	<0.020	<0.010	<0.040	<12	<10	680	<50
JU15	29-Jun-2016	0	0.2	<0.0050	<0.020	<0.010	<0.040	<12	<10	120	<50
JU23	29-Jun-2016	10	0.1	<0.0050	<0.020	<0.010	<0.040	<12	<10	1,900	63
JU29	29-Jun-2016	10	0.1	<0.0050	<0.020	<0.010	<0.040	<12	<10	<50	<50
JU34	29-Jun-2016	15	1.2	<0.0050	<0.020	<0.010	<0.040	<12	31	81	63
Samples Removed											
JU6	17-May-2016	0	0.2	<0.0050	<0.020	<0.010	<0.040	<12	30	3,600	200
Tier 1 Guidelines, Industrial, Fine-Grained Surface Soil (<3 m) ¹	Receptor	Pathway		Benzene	Toluene	Ethyl- benzene	Xylenes	F1	F2	F3	F4
	Human	Direct Soil Contact		120	11,000	24,000	8,100	30,000	30,000	30,000	30,000
		Vapour Inhalation (Slab)		11	13,000	6,500	1,700	4,500	23,000	-	-
		Protection of Domestic Use Aquifer		0.046	0.52	0.073	0.99	1,100	1,500	-	-
	Ecological	Off-Site Migration		1,100	9,200	24,000	6,900	30,000	30,000	30,000	30,000
		Direct Soil Contact		310	330	430	230	320	260	2,500	5,600
		Protection of Freshwater Aquatic Life		7.9	63,000	NGR	NGR	30,000	30,000	-	-
Other	Management Limit	Off-Site Migration		440	1,100	790	930	3,000	2,100	4,300	30,000
				-	-	-	-	800	1,000	5,000	10,000

Notes:
 * Standpipe CVCs were measured with RKI EAGLE vapour analyzer calibrated to hexane with methane elimination.
 CVC - combustible vapour concentration
 m bgs - metres below ground surface
 ppm - parts per million
 mg/kg - milligrams per kilogram
 <- denotes concentration is less than referenced laboratory detection limit indicated
 - no guideline
 NGR - no guideline calculated for this pathway and/or limited by solubility
 Laboratory analytical reports detail detection limits, testing protocols and QA/QC procedures.

Bold/Shadowed/Underline - Indicates the sample concentration exceeds the referenced guideline concentration.

Pathways
Bold - Table A-5: Alberta Tier 1 - Surface Remediation Guideline Values for Industrial Land Use - All Exposure Pathways; Feb 2016.
 - Bold identifies most stringent applicable guideline.

Table 5
Summary of Soil Analytical Results - Metals

Sample I.D.		JU2	
Sample Date (dd-mm-yyyy)		17-May-2016	
Sample Depth (m bgs)		0.2	
Parameter	Units		
Total Lead (Pb)	mg/kg	9.4	
		600	

Tier 1 Guidelines; Industrial Land Use, FGS*

Notes:

- m bgs - metres below ground surface
- mg/kg - milligrams per dry kilogram
- < - Denotes concentration is less than referenced laboratory detection limit indicated
- FGS - fine-grained soil

Bold / Underline/Shaded Indicates the sample concentration exceeds the referenced Tier 1 guideline concentration.

See laboratory report for detection limits, testing protocols and QA/QC procedures.

*Alberta Tier 1 Soil and Groundwater Remediation Guidelines, Feb 2016. Table A-5: Surface Soil Remediation Guideline Values for Industrial Land Use - All Exposure Pathways; Fine-Grained Soil.

Table 6
Summary of Soil Analytical Results - VOCs

Sample I.D.		JU2	Tier 1 Guidelines; Industrial Land Use, FGS*
Sample Date (dd-mmm-yyyy)		17-May-2016	
Sample Depth (mbgs)		0.2	
Parameter	Units		
Bromodichloromethane	mg/kg	<0.030	NGR
Bromoform	mg/kg	<0.050	NGR
Bromomethane	mg/kg	<0.020	NGR
Carbon tetrachloride	mg/kg	<0.00050	0.037
Chlorobenzene	mg/kg	<0.0010	0.61
Chlorodibromomethane	mg/kg	<0.020	0.91
Chloroethane	mg/kg	<0.020	NGR
Chloroform	mg/kg	<0.00080	0.0029
Chloromethane	mg/kg	<0.030	NGR
1,2-dibromoethane	mg/kg	<0.0020	NGR
1,2-dichlorobenzene	mg/kg	<0.020	0.097
1,3-dichlorobenzene	mg/kg	<0.020	NGR
1,4-dichlorobenzene	mg/kg	<0.020	0.051
1,1-dichloroethane	mg/kg	<0.020	NGR
1,2-dichloroethane	mg/kg	<0.0020	0.025
1,1-dichloroethene	mg/kg	<0.020	0.15
cis-1,2-dichloroethene	mg/kg	<0.020	NGR
trans-1,2-dichloroethene	mg/kg	<0.020	NGR
Dichloromethane	mg/kg	<0.043	0.1
1,2-dichloropropane	mg/kg	<0.020	NGR
cis-1,3-dichloropropene	mg/kg	<0.020	NGR
trans-1,3-dichloropropene	mg/kg	<0.020	NGR
Methyl methacrylate	mg/kg	<0.040	1.3
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	0.044
Styrene	mg/kg	<0.020	0.68
1,1,1,2-tetrachloroethane	mg/kg	<0.10	NGR
1,1,2,2-tetrachloroethane	mg/kg	<0.050	NGR
Tetrachloroethene	mg/kg	<0.010	0.26
1,2,3-trichlorobenzene	mg/kg	<0.040	0.26
1,2,4-trichlorobenzene	mg/kg	<0.040	0.78
1,3,5-trichlorobenzene	mg/kg	<0.040	1.9
1,1,1-trichloroethane	mg/kg	<0.020	NGR
1,1,2-trichloroethane	mg/kg	<0.020	NGR
Trichloroethene	mg/kg	<0.010	0.054
Trichlorofluoromethane	mg/kg	<0.020	NGR
1,2,4-trimethylbenzene	mg/kg	<0.50	NGR
1,3,5-trimethylbenzene	mg/kg	<0.50	NGR
Vinyl chloride	mg/kg	<0.00030	0.014

Notes:

m bgs - metres below ground surface

mg/kg - milligrams per kilogram

< - Denotes concentration is less than referenced laboratory detection limit indicated

NGR – no guideline calculated for this pathway and/or limited by solubility

FGS - fine-grained soil

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Bold / Underline / Shaded

Indicates the sample concentration exceeds the referenced Tier 1 guideline concentration.

*Alberta Tier 1 Soil and Groundwater Remediation Guidelines, Feb 2016, Table A-5: Surface Soil Remediation Guideline Values for Industrial Land Use - All Exposure Pathways; Fine-Grained Soil.

Table 7

Summary of Soil Analytical Results - Glycols

Sample I.D.		JU2	Tier 1 Guidelines; Industrial Land Use, FGS*
Sample Date (dd-mm-yyyy)		17-May-2016	
Sample Depth (mbgs)		0.2	
Parameter	Units		
Extractable (Water) Ethylene Glycol	mg/kg	<10	60
Extractable (Water) Propylene Glycol	mg/kg	<10	NGR
Extractable (Water) Diethylene Glycol	mg/kg	<10	10
Extractable (Water) Triethylene Glycol	mg/kg	<10	100
Extractable (Water) Tetraethylene Glycol	mg/kg	<10	NGR

Notes:

m bgs - metres below ground surface

mg/kg - milligrams per kilogram

< - Denotes concentration is less than referenced laboratory detection limit indicated

NGR – no guideline calculated for this pathway and/or limited by solubility

FGS - fine-grained soil

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Bold / Underline / Shaded

Indicates the sample concentration exceeds the referenced Tier 1 guideline concentration.

See laboratory report for detection limits, testing protocols and QA/QC procedures.

* Alberta Tier 1 Soil and Groundwater Remediation Guidelines, Feb 2016. Table A-5: Surface Soil Remediation Guideline Values for Industrial Land Use - All Exposure Pathways; Fine-Grained Soil.

Table 8
Summary of Soil Analytical Results - Landfill Suitability

Sample ID	Units	Class II Landfill Acceptance Criteria	CS1
Date (dd-mmm-yyyy)	-	-	17-May-2016
Tervita Landfill Approval & Alberta Environmental Protection; Alberta User Guide for Waste Managers (March 1996)			
Paint Filter Test (Free Liquid)	-	-	PASS
pH	pH	Between 2 and 12.5	6.59
Flash Point	°C	>61	>61
Benzene Leachable	mg/L	0.5	<0.010
Toluene Leachable	mg/L	0.5	<0.010
Ethylbenzene Leachable	mg/L	0.5	<0.010
Xylenes Leachable	mg/L	0.5	<0.020
Antimony (Sb) Leachable	mg/l	500	<1.0
Arsenic (As) Leachable	mg/L	5.0	<0.50
Barium (Ba) Leachable	mg/L	100	<1.0
Beryllium (Be) Leachable	mg/L	5.0	<0.50
Boron (B) Leachable	mg/L	500	<1.0
Cadmium (Cd) Leachable	mg/L	1.0	<0.10
Chromium (Cr) Leachable	mg/L	5.0	<0.50
Cobalt (Co) Leachable	mg/L	100	<1.0
Copper (Cu) Leachable	mg/L	100	<1.0
Iron (Fe) Leachable	mg/L	1000	45
Lead (Pb) Leachable	mg/L	5.0	<0.50
Mercury (Hg) Leachable	mg/L	0.2	<0.020
Nickel (Ni) Leachable	mg/L	5.0	<0.50
Selenium (Se) Leachable	mg/L	1.0	<0.10
Silver (Ag) Leachable	mg/L	5.0	<0.50
Thallium (Tl) Leachable	mg/L	5.0	<0.50
Uranium (U) Leachable	mg/L	2.0	<0.20
Vanadium (V) Leachable	mg/L	100	<1.0
Zinc (Zn) Leachable	mg/L	500	<1.0
Zirconium (Zr) Leachable	mg/L	500	<1.0

Notes

m - metres

mg/L - milligrams per litre

mg/kg - milligrams per kilogram

< - less than analytical detection limit indicated

Bold / Underline/Shaded

Indicates sample exceeds the referenced guideline concentration.

Laboratory analytical reports detail detection limits, testing protocols and QA/QC procedures.

TCLP - Toxicity Characteristic Leaching Procedure

DRAWING

Former TCRS Wabasca
Phase I ESA & Soil Excavation Program
Plan 9821453, Block 3, Lot 3
Wabasca, AB
SLR Project No.: 212.06581.00000

NOTES:

REFERENCED FROM: LEGAL PLAN 9021453, GOOGLE EARTH IMAGERY, DATED SEPTEMBER 27, 2012 AND SITE RECONNAISSANCE INFORMATION.

LEGAL DESCRIPTION:

LOT 3 BLOCK 3 PLAN 9021453

WABASCA, ALBERTA

LEGEND:

- PROPERTY BOUNDARY
- SITE LOCATION
- FENCE - CHAIN LINK
- FORMER FACILITY FEATURE
- AREA OF SURFACE STAINING
- SOIL SAMPLE LOCATION
- SOIL VAPOUR CONCENTRATION (ppmv)
- SOIL SAMPLE SUBMITTED FOR ANALYSIS
- SOIL VAPOUR CONCENTRATION (ppmv)
- LIMITS OF EXCAVATION
- SOIL LABORATORY ANALYSIS RESULTS
- CONCENTRATIONS MEET REFERENCED SOIL GUIDELINES
- CONCENTRATIONS EXCEED REFERENCED SOIL GUIDELINES

0 5 10 20 30 40 m

SCALE 1:750

WHEN PLOTTED CORRECTLY ON A 11 x 17 PAGE LAYOUT

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

FINNING (CANADA)

FORMER THE CAT RENTAL STORE WABASCA

2300 TRANSPORT ROAD

WABASCA, ALBERTA

PHASE I ENVIRONMENTAL SITE ASSESSMENT & SOIL EXCAVATION PROGRAM

SITE PLAN

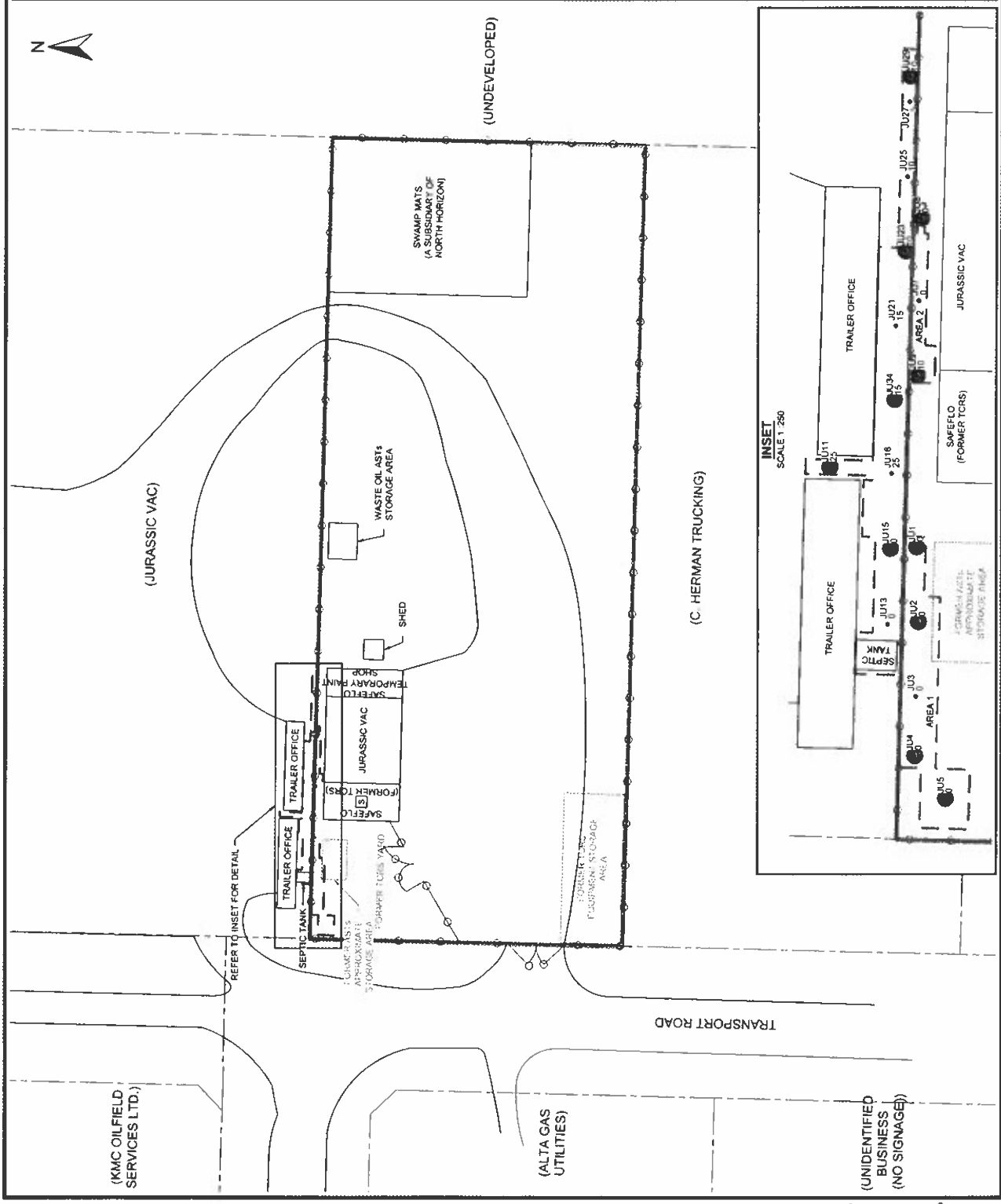
Date: July 15, 2016

Project No. 212.05581.00000

Drawing No. 1

SLR

global environmental solutions



APPENDIX A
Site Photographs

Former TCRS Wabasca
Phase I ESA & Soil Excavation Program
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SLR Project No.: 212.06581.00000



Photo 1: View inside the bay formerly occupied by TCRS facing south.



Photo 2: View inside the bay formerly occupied by TCRS facing northwest.

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SITE PHOTOGRAPHS

Phase I ESA & Soil Excavation Program
Former The CAT Rental Store Wabasca
2300 Transport Road, Wabasca, AB

Project No: 212.06581.00000

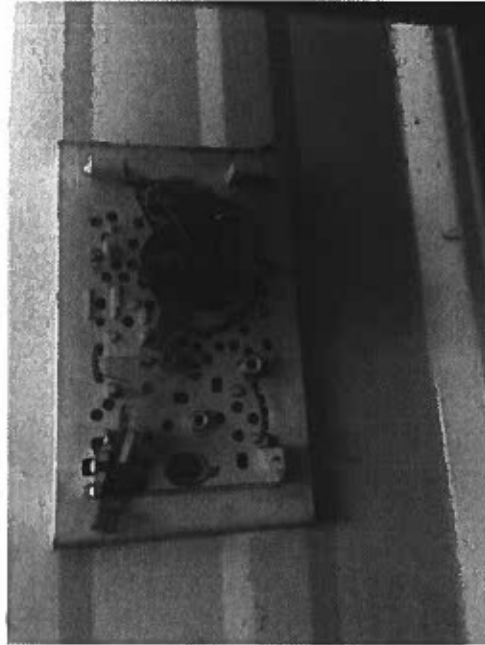


Photo 3: View of thermostat containing mercury.



Photo 4: View of the unopened chemicals stored in the washroom.

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SITE PHOTOGRAPHS

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Photo 5: View of chemicals and jerry cans stored in the shelving.

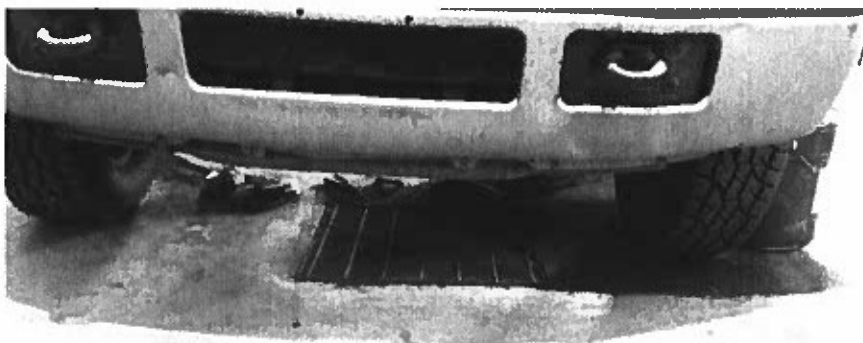


Photo 6: View of the sump underneath service truck.

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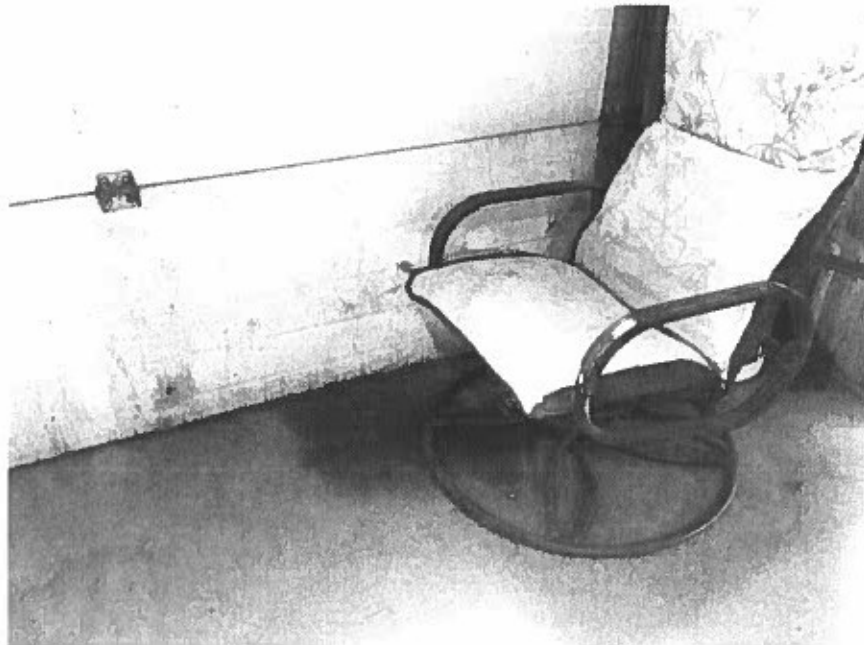


Photo 7: View of minor localized staining in the east portion of the bay.



Photo 8: View of paints and chemicals in the southeast portion of the bay formerly occupied by TCRS.

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Photo 9: View of inside fenced yard immediately west of the site building.



Photo 10: View of across the site facing east.



SITE PHOTOGRAPHS

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Photo 11: View across the site facing west.



Photo 12: View of the midsection of the site facing northwest.

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SITE PHOTOGRAPHS

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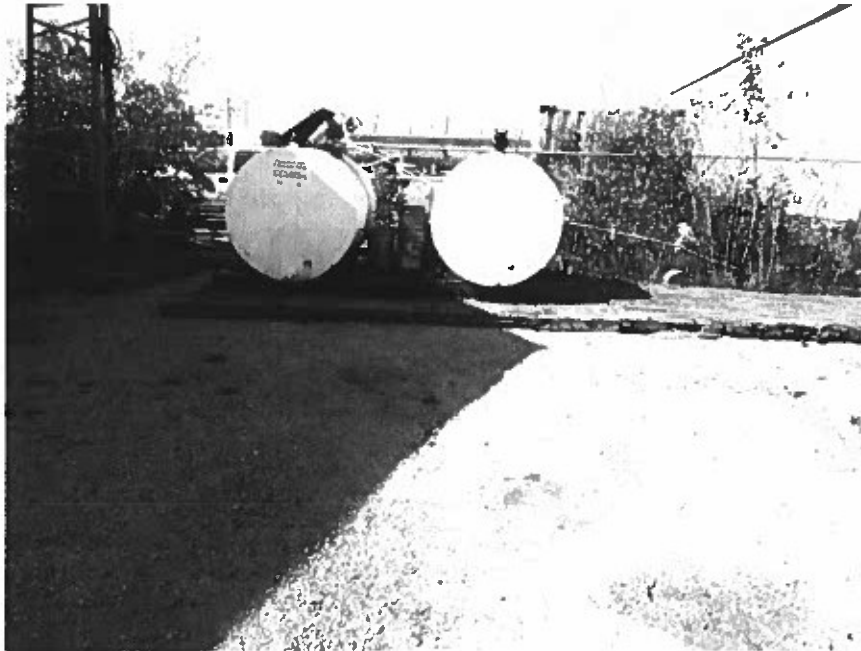


Photo 13: View of the waste oil ASTs located northeast of the site building.



Photo 14: View of the former TCRS equipment storage area in the yard.

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Photo 15: View of the staining in the northwest portion of the fenced yard facing west (Area 1).



Photo 16: View of the staining behind the building facing east (Area 2).

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SITE PHOTOGRAPHS

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Photo 17: View of the excavation extent in the yard facing west.



Photo 18: View of the excavation extent behind the building facing west.

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SITE PHOTOGRAPHS

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Photo 19: View of the yard after backfilling facing west



Photo 20: View of the behind the building after backfilling facing east.

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Photo 21: View of the excavation at JU9 location.



Photo 22: View of after backfilling at JU9 location.

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Photo 23: View of office/staff trailers facing southeast from the north adjacent property.



Photo 24: View of staining in between the trailers.

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Photo 25: View of staining behind the trailers.



Photo 26: View of staining behind the trailers.

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Photo 27: View of staining behind the trailers after vegetation clearance.



Photo 28: View of excavation in between the trailers.

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Photo 29: View of excavation behind the west trailer.



Photo 30: View of excavation behind the east trailer.

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Photo 31: View of the deep excavation at JU34 location.



Photo 32: View of after backfilling between the trailers.

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SITE PHOTOGRAPHS

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Photo 33: View of after backfilling behind the west trailer.



Photo 34: View of after backfilling behind the east trailer.



SITE PHOTOGRAPHS

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APPENDIX B

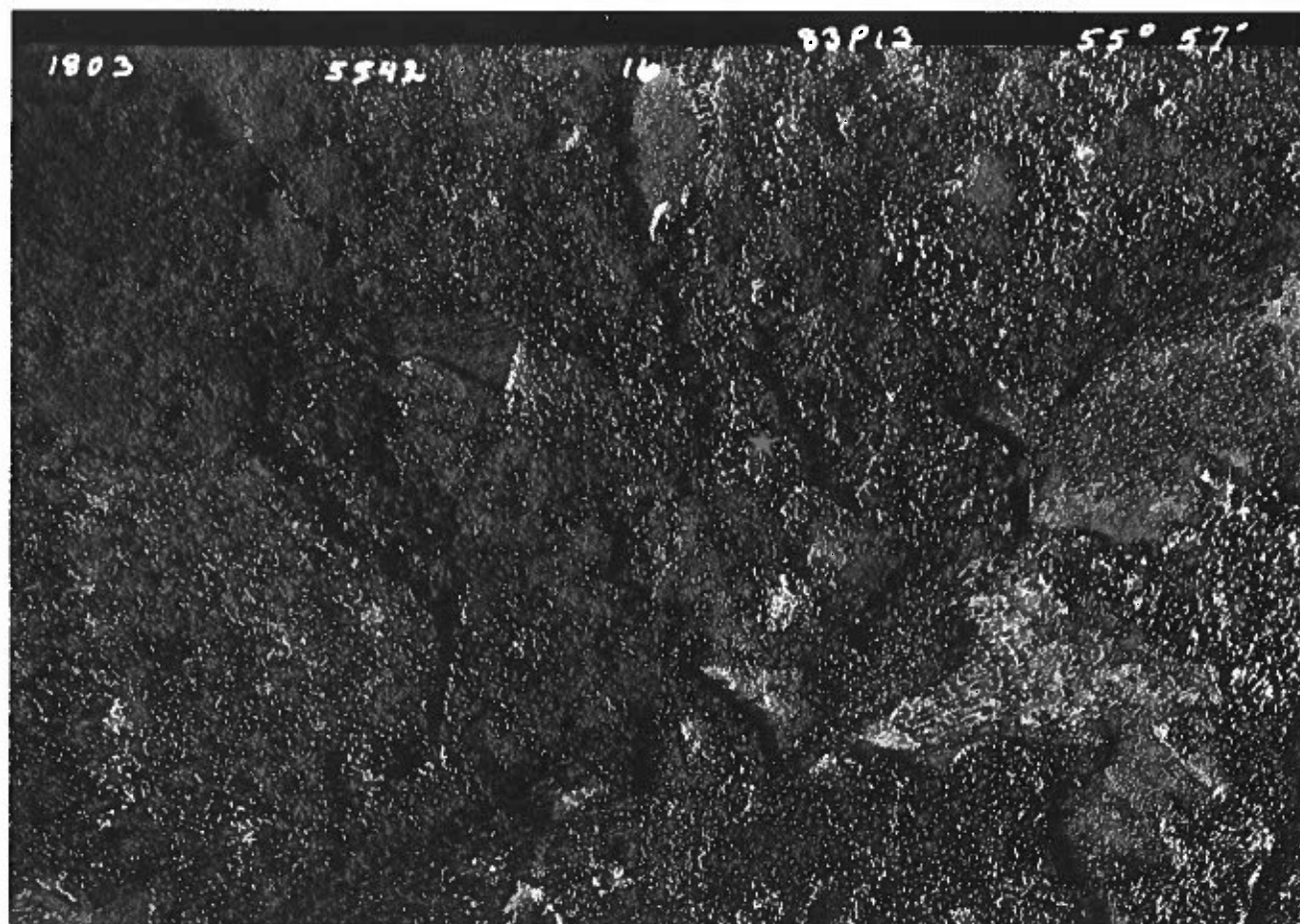
Aerial Photographs

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1949 Aerial Photograph

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1951 Aerial Photograph

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1963 Aerial Photograph

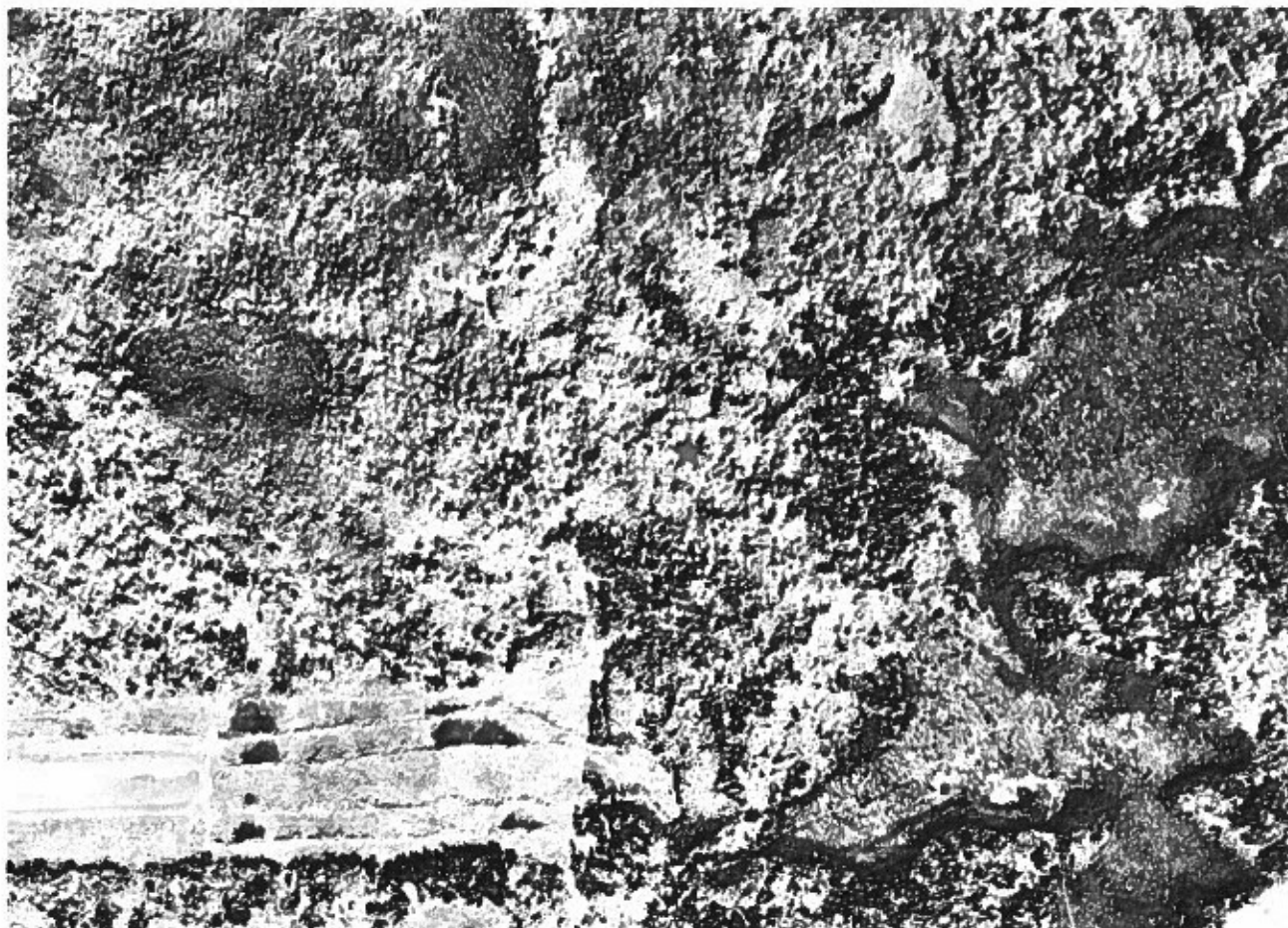


1970 Aerial Photograph

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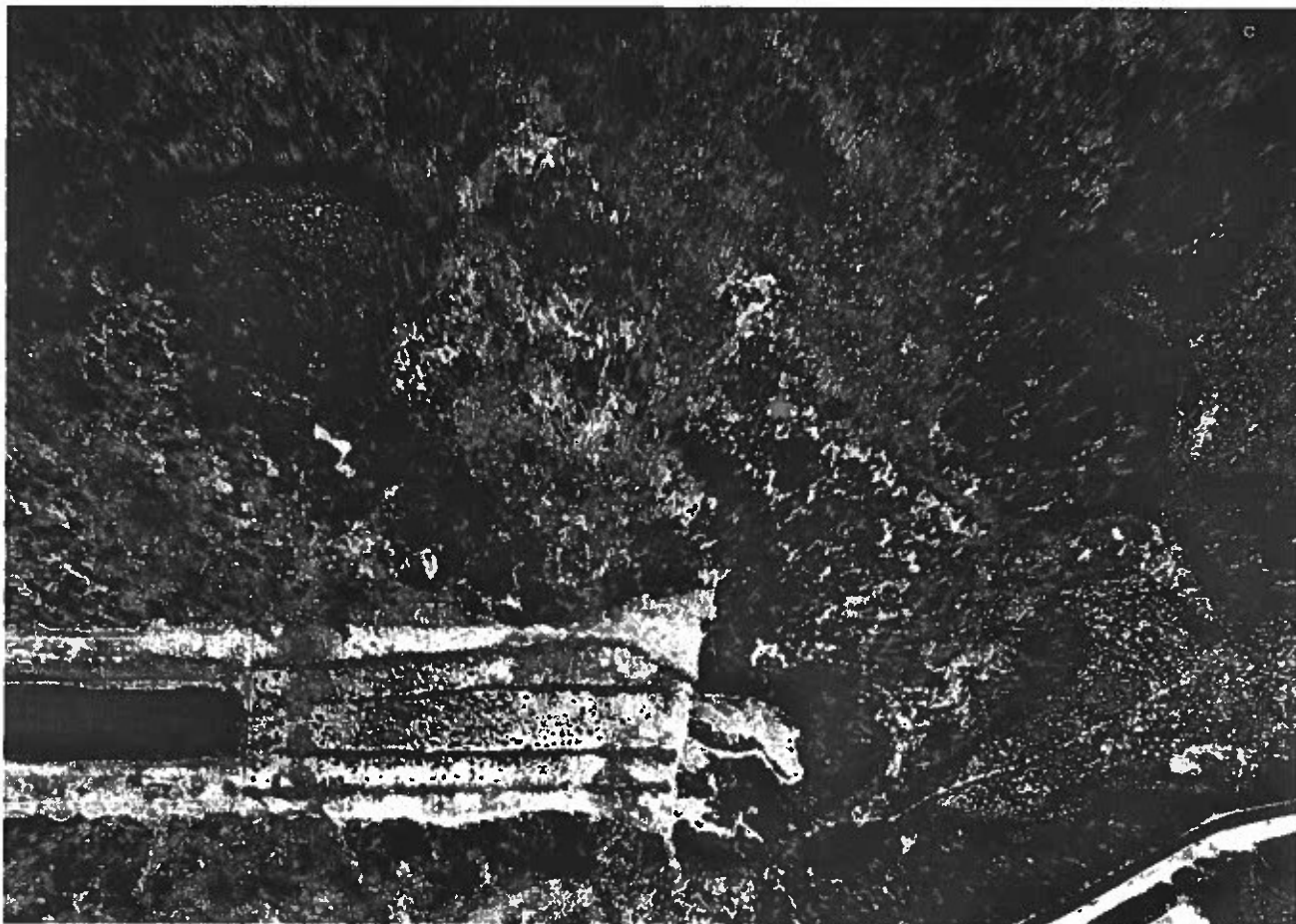
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1978 Aerial Photograph

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1981 Aerial Photograph

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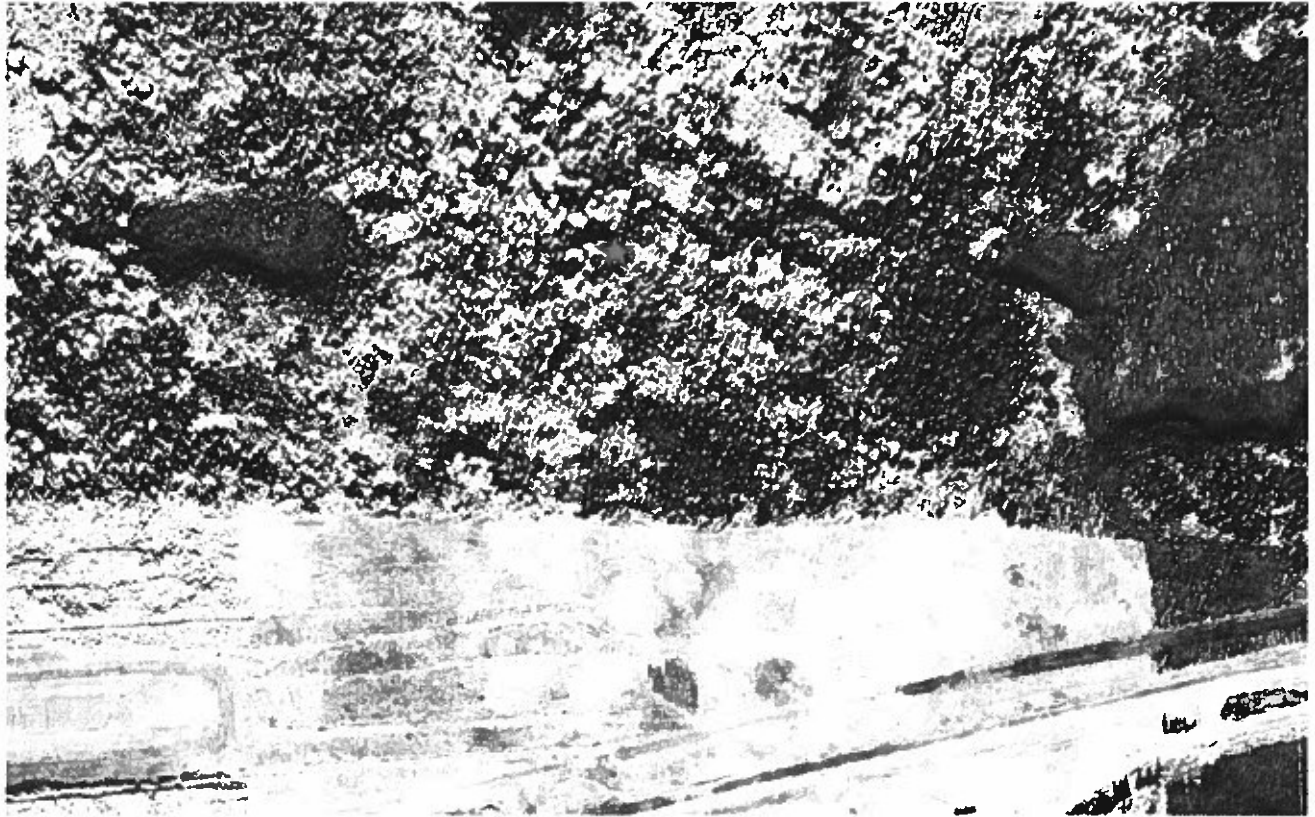
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2300 Transport Road, Wabasca, AB

Project No: 212.06581.00000

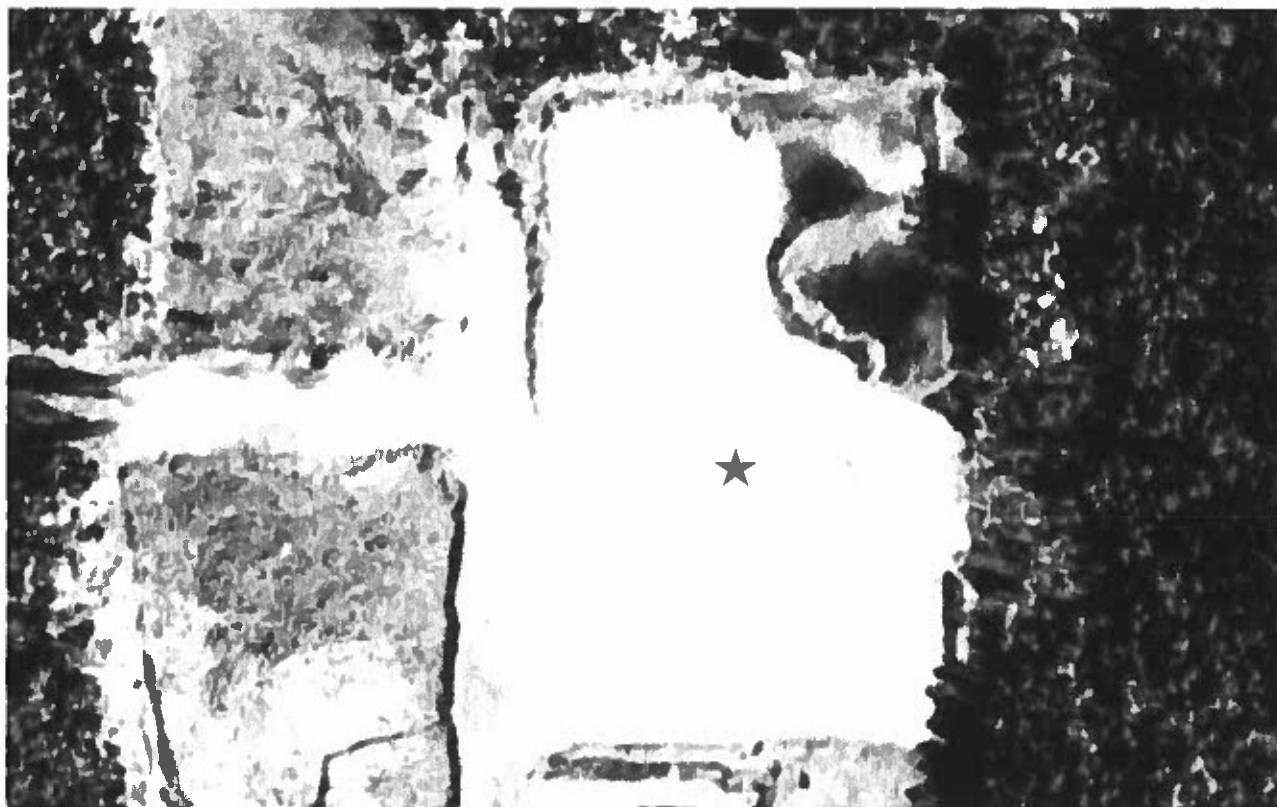


1988 Aerial Photograph

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1995 Aerial Photograph



2000 Aerial Photograph

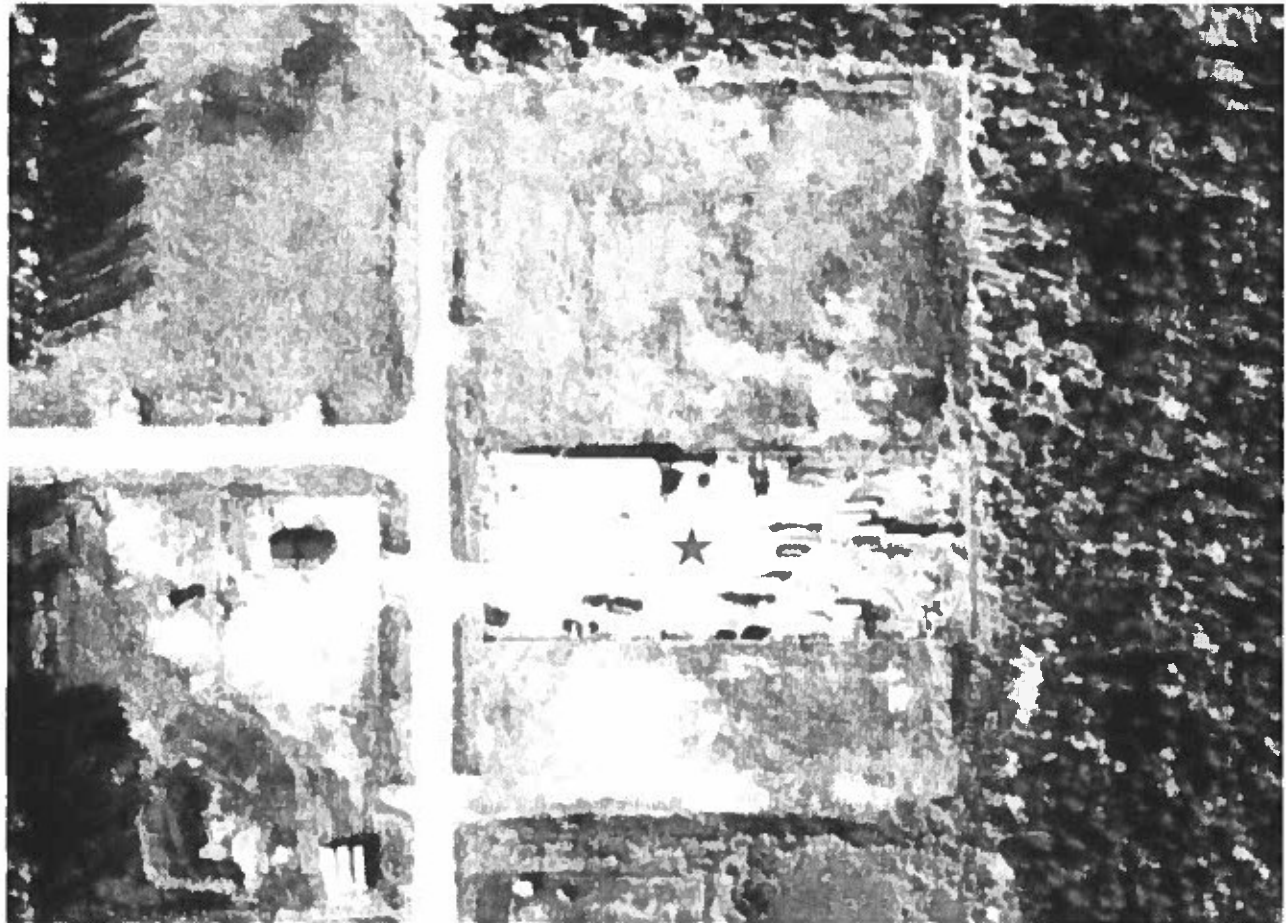
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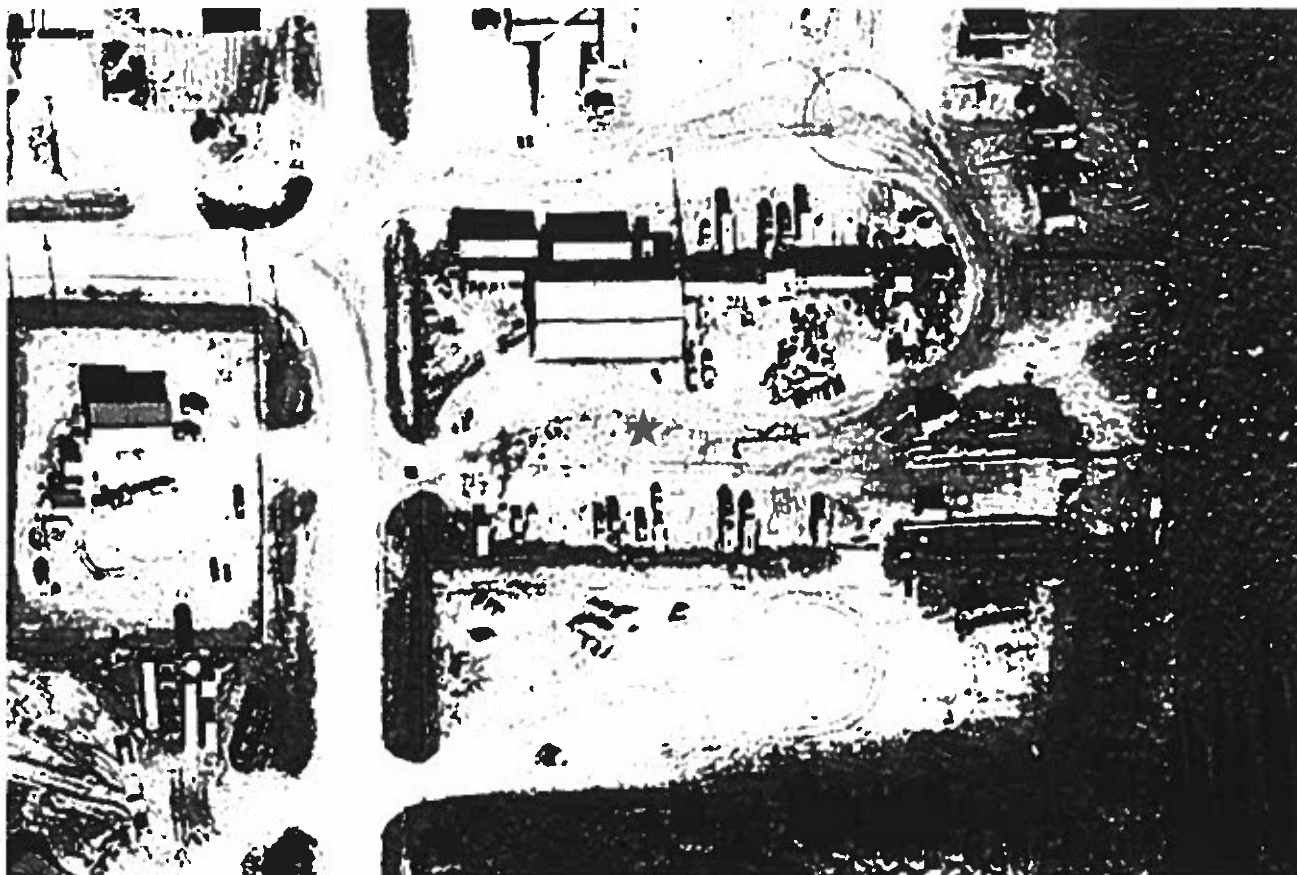
AERIAL
PHOTOGRAPHS

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2005 Google Earth Image



2012 Google Earth Image

SLR AERIAL PHOTOGRAPHS	Phase I ESA & Soil Excavation Program Former The CAT Rental Store Wabasca 2300 Transport Road, Wabasca, AB
	Project No: 212.06581.00000

APPENDIX C
Records Search Results

Former TCRS Wabasca
Phase I ESA & Soil Excavation Program
Plan 9821453, Block 3, Lot 3
Wabasca, AB
SLR Project No.: 212.06581.0000



HISTORICAL LAND TITLE CERTIFICATE
CURRENT TITLE WITH HISTORICAL DATA

S
LINC SHORT LEGAL TITLE NUMBER
0027 429 422 9821453;3;3 142 055 122

LEGAL DESCRIPTION
PLAN 9821453
BLOCK 3
LOT 3
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 1.01 HECTARES (2.5 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE
ATS REFERENCE: 4;25;80;26;NE

MUNICIPALITY: MUNICIPAL DISTRICT OF OPPORTUNITY NO. 17

REFERENCE NUMBER: 012 234 395

REGISTERED OWNER(S)				
REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
142 055 122	20/02/2014	TRANSFER OF LAND		SEE INSTRUMENT

OWNERS

LANDING TRAIL CONSTRUCTION LTD.
OF BOX 1917
ATHABASCA
ALBERTA T9S 2B5

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION		
NUMBER	DATE (D/M/Y)	PARTICULARS
092 444 111	08/12/2009	MORTGAGE MORTGAGEE - ALBERTA TREASURY BRANCHES. 4910-50 STREET ATHABASCA ALBERTA ORIGINAL PRINCIPAL AMOUNT: \$1,600,000
092 444 112	08/12/2009	CAVEAT

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

142 055 122

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		RE : ASSIGNMENT OF RENTS AND LEASES CAVEATOR - ALBERTA TREASURY BRANCHES. 4910 - 50TH STREET ATHABASCA ALBERTA T9S1E3 AGENT - VICTOR L LIRETTE
122 329 818	05/10/2012	EASEMENT "OVER LOT 4 BLOCK 3 PLAN 9821453"
142 055 123	20/02/2014	MORTGAGE MORTGAGEE - ALBERTA TREASURY BRANCHES. 4910 - 50TH STREET ATHABASCA ALBERTA T9S1E3 ORIGINAL PRINCIPAL AMOUNT: \$700,000
142 055 124	20/02/2014	CAVEAT RE : ASSIGNMENT OF RENTS AND LEASES CAVEATOR - ALBERTA TREASURY BRANCHES. 4910 - 50TH STREET ATHABASCA ALBERTA T9S1E3 AGENT - RICHARD A VERHAEGHE
142 074 044	12/03/2014	DISCHARGE OF MORTGAGE 092444111
142 074 045	12/03/2014	DISCHARGE OF CAVEAT 092444112
142 221 067	15/07/2014	AMENDING AGREEMENT AMOUNT: \$950,000 AFFECTS INSTRUMENT: 142055123
162 008 513	12/01/2016	MORTGAGE MORTGAGEE - THE TORONTO DOMINION BANK. 10816 MACLEOD TRAIL SE CALGARY ALBERTA T2J5N8 ORIGINAL PRINCIPAL AMOUNT: \$1,000,000

TOTAL INSTRUMENTS: 009

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 17 DAY OF MAY,
2016 AT 10:34 A.M.

ORDER NUMBER: 30677044

CUSTOMER FILE NUMBER: 7391501



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON FEBRUARY 20, 2014

S
LINC SHORT LEGAL TITLE NUMBER
0027 429 422 9821453;3;3 012 234 395

LEGAL DESCRIPTION
PLAN 9821453
BLOCK 3
LOT 3
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 1.01 HECTARES (2.5 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE
ATS REFERENCE: 4;25;80;26;NE

MUNICIPALITY: MUNICIPAL DISTRICT OF OPPORTUNITY NO. 17

REFERENCE NUMBER: 982 094 318 +7

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
012 234 395	01/08/2001	TRANSFER OF LAND	\$20,000	\$20,000

OWNERS

A.I.M. HOLDINGS INC.
OF BOX 549
BOYLE
ALBERTA T0A 0M0

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION		
NUMBER	DATE (D/M/Y)	PARTICULARS
972 302 229	02/10/1997	UTILITY RIGHT OF WAY GRANTEE - ALTAGAS SERVICES INC. 1700, 355-4 AVENUE SW CALGARY ALBERTA T2P0J1
022 051 938	12/02/2002	TRANSFER OF UTILITY RIGHT OF WAY 972302229 TRANSFEREE - AEC OIL & GAS CO. LTD.

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

012 234 395

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

3900, 421-7 AVE SW
CALGARY
ALBERTA T2P4K9

022 352 723 18/09/2002 MORTGAGE
MORTGAGEE - ALBERTA TREASURY BRANCHES.
BOX 1756
SLAVE LAKE
ALBERTA T0G2A0
ORIGINAL PRINCIPAL AMOUNT: \$1,000,000

022 354 226 19/09/2002 CAVEAT
RE : ASSIGNMENT OF RENTS AND LEASES
CAVEATOR - ALBERTA TREASURY BRANCHES.
ATTEN: RESPONSIBLE ACCOUNT MANAGER
BOX 1756
SLAVE LAKE
ALBERTA T0G2A0
AGENT - DOUGLAS H SHELL

032 125 221 10/04/2003 TRANSFER OF UTILITY RIGHT OF WAY 972302229
TRANSFEREE - ALTAGAS SERVICES INC.
1700, 355-4 AVENUE SW
CALGARY
ALBERTA T2P0J1

032 170 719 16/05/2003 DISCHARGE OF UTILITY RIGHT OF WAY 972302229
AND TRANSFER OF 022051938
AND TRANSFER OF 032125221

082 540 515 12/12/2008 AMENDING AGREEMENT
AMOUNT: \$1,300,000
AFFECTS INSTRUMENT: 022352723

092 444 111 08/12/2009 MORTGAGE
MORTGAGEE - ALBERTA TREASURY BRANCHES.
4910-50 STREET
ATHABASCA
ALBERTA
ORIGINAL PRINCIPAL AMOUNT: \$1,600,000

092 444 112 08/12/2009 CAVEAT
RE : ASSIGNMENT OF RENTS AND LEASES
CAVEATOR - ALBERTA TREASURY BRANCHES.
4910 - 50TH STREET
ATHABASCA
ALBERTA T9S1E3
AGENT - VICTOR L LIRETTE

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3
012 234 395

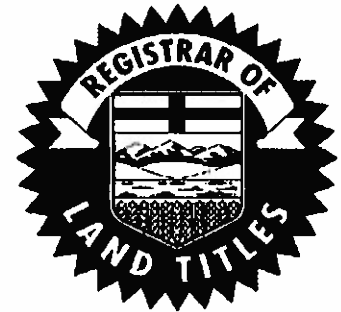
REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
102 005 388	07/01/2010	DISCHARGE OF MORTGAGE 022352723 AND AMENDING AGREEMENT 082540515
102 005 389	07/01/2010	DISCHARGE OF CAVEAT 022354226
122 329 818	05/10/2012	EASEMENT "OVER LOT 4 BLOCK 3 PLAN 9821453"
142 055 122	20/02/2014	TRANSFER OF LAND OWNERS - LANDING TRAIL CONSTRUCTION LTD. BOX 1917 ATHABASCA ALBERTA T9S2B5 NEW TITLE ISSUED

TOTAL INSTRUMENTS: 013

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 17 DAY OF MAY,
2016 AT 10:34 A.M.

ORDER NUMBER: 30677044

CUSTOMER FILE NUMBER: 7391501



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON AUGUST 01, 2001

S
LINC SHORT LEGAL TITLE NUMBER
0027 429 422 9821453;3;3 982 094 318 +7

LEGAL DESCRIPTION
PLAN 9821453
BLOCK 3
LOT 3
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 1.01 HECTARES (2.5 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE
ATS REFERENCE: 4;25;80;26;NE

MUNICIPALITY: MUNICIPAL DISTRICT OF OPPORTUNITY NO. 17

REFERENCE NUMBER: 982 094 317 +7

REGISTERED OWNER(S)				
REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
982 094 318	07/04/1998	TRANSFER OF LAND		SEE TRANSFER

OWNERS

GEMWOOD CONSTRUCTION LTD.
OF BOX 156
ATHABASCA
ALBERTA T9S 2A3

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION		
NUMBER	DATE (D/M/Y)	PARTICULARS
972 302 229	02/10/1997	UTILITY RIGHT OF WAY GRANTEE - AMBER ENERGY INC.
012 234 395	01/08/2001	TRANSFER OF LAND OWNERS - A.I.M. HOLDINGS INC. BOX 549 BOYLE ALBERTA T0A0M0

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

982 094 318 +7

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

NEW TITLE ISSUED

TOTAL INSTRUMENTS: 002

**THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 17 DAY OF MAY,
2016 AT 10:34 A.M.**

ORDER NUMBER: 30677044

CUSTOMER FILE NUMBER: 7391501



END OF CERTIFICATE

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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON APRIL 07, 1998

S
LINC SHORT LEGAL TITLE NUMBER
0027 429 422 9821453;3;3 982 094 317 +7

LEGAL DESCRIPTION
PLAN 9821453
BLOCK 3
LOT 3
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 1.01 HECTARES (2.5 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE
ATS REFERENCE: 4;25;80;26;NE

MUNICIPALITY: MUNICIPAL DISTRICT OF OPPORTUNITY NO. 17

REFERENCE NUMBER: 962 021 416 +28

REGISTERED OWNER(S)				
REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
982 094 317	07/04/1998	SUBDIVISION PLAN		

OWNERS

MUNICIPAL DISTRICT OF OPPORTUNITY NO.17.
OF BOX 60, WABASCA
ALBERTA T0G 2K0

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION		
NUMBER	DATE (D/M/Y)	PARTICULARS
962 021 417	25/01/1996	REQUEST FOR RELEASE OF D.C.T. DCT ISSUED SURRENDERED BY 982094318
972 302 229	02/10/1997	UTILITY RIGHT OF WAY GRANTEE - AMBER ENERGY INC.
982 094 318	07/04/1998	TRANSFER OF LAND OWNERS - GEMWOOD CONSTRUCTION LTD. BOX 156

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

982 094 317 +7

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

ATHABASCA
ALBERTA T9S2A3
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 17 DAY OF MAY,
2016 AT 10:34 A.M.

ORDER NUMBER: 30677044

CUSTOMER FILE NUMBER: 7391501



END OF CERTIFICATE

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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON APRIL 07, 1998

S	LINC	SHORT LEGAL	TITLE NUMBER
	0018 673 012	4;25;80;26;NW	962 021 416 +28
	0018 673 020	4;25;80;26;NE	

LEGAL DESCRIPTION

FIRST
MERIDIAN 4 RANGE 25 TOWNSHIP 80
SECTION 26
QUARTER NORTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

SECOND
MERIDIAN 4 RANGE 25 TOWNSHIP 80
SECTION 26
QUARTER NORTH EAST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: MUNICIPAL DISTRICT OF OPPORTUNITY NO. 17

REFERENCE NUMBER: 882 013 222 D

REGISTERED OWNER(S)				
REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
962 021 416	25/01/1996	ORDER		MINISTER'S ORDER

OWNERS

MUNICIPAL DISTRICT OF OPPORTUNITY NO.17.
OF BOX 60, WABASCA
ALBERTA T0G 2K0

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

962 021 416 +28

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
882 013 223	21/01/1988	REQUEST FOR RELEASE OF D.C.T. DCT ISSUED SURRENDERED BY 982094317
962 021 417	25/01/1996	REQUEST FOR RELEASE OF D.C.T. DCT ISSUED
972 060 948	04/03/1997	BUILDER'S LIEN LIENOR - LASSO CONTRACTING LTD. C/O EMERY JAMIESON 1700, 10235-101 ST EDMONTON ALBERTA T5J3G1 AGENT - DONALD V TOMKINS AMOUNT: \$35,130 AFFECTED LAND: 4;25;80;26;NE PIPELINE RIGHT OF WAY
972 128 091	08/05/1997	DISCHARGE OF BUILDER'S LIEN 972060948 AFFECTED LAND: 4;25;80;26;NE
972 204 940	14/07/1997	CAVEAT RE : SURFACE LEASE UNDER 20 ACRES CAVEATOR - AMBER ENERGY INC. 1100, 321-6TH AVE SW CALGARY ALBERTA T2P3H3 AGENT - TRACY PULLAR AFFECTED LAND: 4;25;80;26;NE
972 302 229	02/10/1997	UTILITY RIGHT OF WAY GRANTEE - AMBER ENERGY INC. AFFECTED LAND: 4;25;80;26;NE
982 022 856	22/01/1998	CAVEAT RE : RIGHT OF WAY AGREEMENT CAVEATOR - AMBER ENERGY INC. 1100, 321-6TH AVE SW CALGARY ALBERTA T2P3H3 AGENT - TRACY PIGEON AFFECTED LAND: 4;25;80;26;NE
982 094 315	07/04/1998	SURVEYS DISCHARGE AFFECTS INSTRUMENT: 972204940 AS TO NEW PLAN
982 094 316	07/04/1998	SURVEYS DISCHARGE AFFECTS INSTRUMENT: 982022856 AS TO NEW PLAN

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

962 021 416 +28

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

982 094 317 07/04/1998 SUBDIVISION PLAN 9821453

AFFECTED LAND: 4;25;80;26;NE CANCELLED AS TO
PART

NEW TITLE ISSUED FOR THE REMAINDER

TOTAL INSTRUMENTS: 010

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 17 DAY OF MAY,
2016 AT 10:34 A.M.

ORDER NUMBER: 30677044

CUSTOMER FILE NUMBER: 7391501



END OF CERTIFICATE

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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON JANUARY 25, 1996

S	LINC	SHORT LEGAL	TITLE NUMBER
	0018 673 012	4;25;80;26;NW	882 013 222 D
	0018 673 020	4;25;80;26;NE	

LEGAL DESCRIPTION

FIRST
MERIDIAN 4 RANGE 25 TOWNSHIP 80
SECTION 26
QUARTER NORTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

SECOND
MERIDIAN 4 RANGE 25 TOWNSHIP 80
SECTION 26
QUARTER NORTH EAST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: MUNICIPAL DISTRICT OF OPPORTUNITY NO. 17

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
882 013 222	21/01/1988			NIL

OWNERS

HER MAJESTY THE QUEEN IN RIGHT OF ALBERTA
OF C/O MINISTER OF MUNICIPAL AFFAIRS AS COUNCIL FOR ID #17
9925 - 107 STREET EDMONTON
ALBERTA T5K 2H9

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

882 013 222 D

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

882 013 223 21/01/1988 REQUEST FOR RELEASE OF D.C.T.
DCT ISSUED

962 021 416 25/01/1996 ORDER
OWNERS - MUNICIPAL DISTRICT OF OPPORTUNITY NO.17.
BOX 60, WABASCA
ALBERTA T0G2K0
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 002

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TITLE REPRESENTED HEREIN THIS 17 DAY OF MAY,
2016 AT 10:33 A.M.

ORDER NUMBER: 30677044

CUSTOMER FILE NUMBER: 7391501



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Certificate of Title

NUMBER 882013222D

REFERENCE

CONSIDERATION NIL

North Alberta Land Registration District

THIS IS TO CERTIFY that HER MAJESTY THE QUEEN, IN RIGHT OF THE PROVINCE OF ALBERTA

C/O MINISTER OF MUNICIPAL AFFAIRS, AS COUNCIL FOR I.D. #17

227-LEGISLATURE BUILDING

EDMONTON, ALBERTA T5K 2B6

9925 - 107 STREET

EDMONTON, ALBERTA T5K 2H9

CHANCE OF ADDRESS #882095842

5-5-88 ADR/JD

is/are now the owner(s) of an estate in fee simple

of and in

THE NORTH HALF OF SECTION TWENTY SIX (26)

TOWNSHIP EIGHTY (80)

RANGE TWENTY FIVE (25)

WEST OF THE FOURTH MERIDIAN,

CONTAINING 64.750 HECTARES (160 ACRES) MORE OR LESS, IN EACH QUARTER SECTION.

EXCEPTING THEREOUT ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME.

CANCELLED
AND CONVERTED

JUN 1 8 1991

in receipt

SUBJECT TO THE ENCUMBRANCES, LIENS AND INTERESTS NOTIFIED BY MEMORANDUM UNDER-
WRITTEN OR ENDORSED HEREON, OR WHICH MAY HEREAFTER BE MADE IN THE REGISTER.

In witness whereof I have subscribed my name and affixed my official seal this

21ST day of JAN. 1988

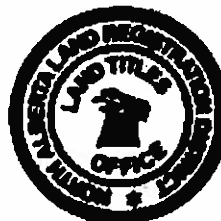
JO

[Signature]
427-5142

A.D. Registrar

AO 1875 (REV. MAR 84)

North Alberta Land Registration District



44-38861-108-56-4

44-38861-108-56-4

SECRET

00000000000000000000

ENCUMBRANCES, DEBTS & INTERESTS					
Page No.	Date of Issue	Particulars	Signature of A.C. Registrar	Date of Registration	Signature of A.D. Registrar
80291723-21	198	Duplicate Certificate of Title Issued	<i>[Signature]</i>	20-11-1991	

NOT RECORDED
 AND CONVERTED
 JUN 19 1991
 E.

**ALBERTA GOVERNMENT SERVICES
LAND TITLES OFFICE**

IMAGE OF DOCUMENT REGISTERED AS:

882013222

ORDER NUMBER: 30677670

ADVISORY

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8820 13222 89 JUN 21

8-12

1007

RECEIVED	1007
RECEIVED	1007

8820 13222



THE PUBLIC LANDS ACT

NOTIFICATION FOR ISSUE OF CERTIFICATE OF TITLE

The Registrar,
North
Alberta Land Registration District
Edmonton
, Alberta

The undersigned is entitled to the issue of a certificate of title in her favour for an estate in fee simple in the following land:

Description: Attached

Name: Her Majesty the Queen in right
of the Province of Alberta

Address: c/o The Minister of Municipal Affairs
227 Legislature Building
EDMONTON, Alberta
T5K 2B6

Nature of grant: Transfer of Administration and Control by
Consideration: Virtue of Order-in-Council No. 677/87 dated
October 22, 1987

Remarks:

Date: Eighth (8) day of December, 19 87

Notification No.: 59937

Assistant Deputy Minister of Public Lands
ACTING

Deputy Minister of Forestry, Lands and Wildlife

DESCRIPTION

Notification No. 59937

All those parcels or tracts of land, situate, lying, and being in the Province of Alberta, and being composed of:

FIRSTLY

In Township 80, Range 25, West of the 4th Meridian.

(1) A) The west half of legal subdivision 15 of section 15, containing 8.094 ha (20.00 ac), more or less, as shown upon a map or plan of survey of the said township approved and confirmed at Ottawa on the 17th day of March, 1916 by E. Deville, Surveyor General of Dominion Lands, and on file in the Department of Forestry, Lands and Wildlife at Edmonton.

(2) B) All that portion of the north east quarter of section 23, which lies without the Wabiskaw Settlement and the adjoining road allowance, as shown upon the said township, containing 23.674 ha (58.50 ac), more or less.

(3) C) All that portion of legal subdivision 5 of section 23, which lies without the said Wabiskaw Settlement, as shown upon the said township, containing 8.450 ha (20.90 ac), more or less.

Saving and Excepting:

<u>Purpose</u>	<u>Plan</u>	<u>Hectares</u>	<u>Acres</u>
Roadway	8421611 (7018 RD)	0.742	1.83

(4) D) All that portion of section 24, which lies to the north and east of the northeasterly limit of a road allowance adjoining the Wabiskaw Settlement and to the west of the westerly limit of a road allowance adjoining Indian Reserve No. 166 A, as shown upon the said township, containing 4.937 ha (12.20 ac), more or less.

(5) E) The north half of section 26, containing 64.750 ha (160.00 ac), more or less, in each quarter section.

(6) F) All that portion of the section 28 lying to the north of the right bank of the Wabiskaw River, as shown upon the said township, containing in:

NE 28 - 59.489 ha (147.00 acres), more or less
NW 28 - 63.333 ha (156.50 acres), more or less
SE 28 - 1.376 ha (3.40 acres), more or less
SW 28 - 1.740 ha (4.30 acres), more or less

Saving and Excepting:

Purpose	Plan	Hectares	Acres
1) Roadway	3190 LX (4300 RD)	0.287	0.71 (WE 1/4)
2) Subdivision	782 2447 (3379 GEN)	0.040	0.10 (NE 1/4)

(7) G) Legal subdivisions 9 and 10 and the north east quarter of legal subdivision 16 of section 29, as shown upon the said township, containing 36.422 ha (90.00 ac), more or less.

(4) H) All those portions of legal subdivisions 6, 7, 8, 11, fractional legal subdivision 13 and west half of legal subdivision 14 of the said section 29, which lie to the north and east of the right bank of the Wabiskaw River, as shown upon the said township, containing in:

Legal subdivision 6 - 0.486 ha (1.20 ac), more or less
 Legal subdivision 7 - 10.805 ha (26.70 ac), more or less
 Legal subdivision 8 - 13.071 ha (32.30 ac), more or less
 Legal subdivision 11 - 6.880 ha (17.00 ac), more or less
 Fractional legal subdivision 13 - 4.168 ha (10.30 ac), more or less
 West half of legal subdivision 14 - 8.053 ha (19.90 ac), more or less

(9) I) All that portion of the south east quarter of legal subdivision 4 of section 32, which lies to the east of the right bank of the Wabiskaw River, as shown upon the said township, containing 3.197 ha (7.90 ac), more or less.

(10) J) All that portion of the south east quarter of section 35, which lies to the west of a line drawn parallel to the east boundary of the said quarter section and perpendicularly distant 402.34 m (1,320.00 feet) measured westerly therefrom, containing 32.375 hectares (80.00 acres), more or less.

(11) K) The south west quarter of section 35, containing 64.750 ha (160.00 ac), more or less.
 L) The north west quarter of section 35, containing 64.750 ha (160.00 ac), more or less.

Saving and Excepting:

All that portion of the said quarter section, which lies to the north of a line drawn parallel to the north boundary thereof and perpendicularly distant 402.34 metres (1,320.00 feet) measured southerly therefrom and to the east of a line drawn parallel to the west boundary thereof and perpendicularly distant 402.34 metres (1,320.00 feet) measured easterly therefrom, containing 16.187 hectares (40.00 acres), more or less.

Reserving unto Her Majesty all mines and minerals and the right to work the same.

SECONDLY

In Township 81, Range 25, West of the 4th Meridian.

- (12) A) The south east quarter of section 3, containing 64.750 ha (160.00 ac), more or less.

Saving and Excepting:

All that portion of the said quarter section, which lies to the north of a line drawn parallel to the north boundary thereof and perpendicularly distant 402.34 metres (1,320.00 feet) measured southerly therefrom and to the east of a line drawn parallel to the east boundary thereof and perpendicularly distant 402.34 metres (1,320.00 feet) measured westerly therefrom, containing 16.187 ha (40.00 ac), more or less.

- (13) B) The north west quarter of section 3, containing 64.750 ha (160.00 ac), more or less.

Saving and Excepting:

All that portion of the said quarter section, which lies to the north of a line drawn parallel to the north boundary thereof and perpendicularly distant 402.34 metres (1,320.00 feet) measured southerly therefrom and to the east of a line drawn parallel to the west boundary thereof and perpendicularly distant 402.34 metres (1,320.00 feet) measured easterly therefrom, containing 16.187 ha (40.00 ac), more or less.

- (14) C) The north half and south east quarter of section 4, containing 64.750 ha (160.00 ac), more or less, in each quarter section.

- (15) D) All that portion of the south east quarter of section 9, which lies to the south of a line drawn parallel to the south boundary thereof and perpendicularly distant 402.34 metres (1,320.00 feet) measured northerly therefrom and to the west of a line drawn parallel to the east boundary thereof and perpendicularly distant 402.187 metres (1,319.51 feet) measured westerly therefrom, containing 16.187 ha (40.00 ac), more or less.

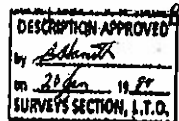
- (16) E) The south west quarter of section 9, containing 64.750 ha (160.00 ac), more or less.

Reserving unto Her Majesty all mines and minerals and the right to work the same.

THIRDLY

(12) All that portion of Lot 5 which lies to the south and west of the road allowance crossing the said lot, as shown upon a plan of survey of the Tabiakaw Settlement, approved and confirmed at Ottawa on the 24th day of December, 1914 by S. Deville, Surveyor General of Dominion Lands, and on file in the Department of Forestry, Lands and Wildlife as No. 41 S, containing 2.242 ha (5.54 ac), more or less.

Reserving unto Her Majesty all mines and minerals and the right to work the same.



Tanya Vieira

From: Raven Cardinal <ravenc@mdopportunity.ab.ca>
Sent: May 25, 2016 11:30 AM
To: Joven Uy
Subject: Re: Request for Information

Good Morning,

After doing some research on the above noted property (plan 98214543, block 3, lot 3) there is no correspondents in regards to the environmental site assessments. If you have any other questions please feel free to contact me at the number below.

Thanks,

Raven Cardinal

Development Officer
MD of Opportunity #17
PO Box 60, Wabasca, AB T0G 2K0
Ph: (780) 891-3778 ext#108
Fax: (780) 891-4283
Email: ravenc@mdopportunity.ab.ca

On Wed, May 25, 2016 at 10:10 AM, Joven Uy <juy@slrconsulting.com> wrote:

Hi Raven,

I'm looking for any environmental records such as environmental site assessment reports, correspondents and/or complaints given to the municipality due to a spill, contamination, etc.

Thanks,

Joven

From: Raven Cardinal [<mailto:ravenc@mdopportunity.ab.ca>]
Sent: May 25, 2016 10:03 AM
To: Joven Uy
Subject: Re: Request for Information

Good Morning,

What exactly are you looking for in regards to the Phase I Environmental Site Assessment? Please let me know so I can minimize the search.

Thanks,

Raven Cardinal

Development Officer
MD of Opportunity #17
PO Box 60, Wabasca, AB T0G 2K0
Ph: (780) 891-3778 ext#108
Fax: (780) 891-4283
Email: ravenc@mdopportunity.ab.ca

On Thu, May 19, 2016 at 10:17 AM, Joven Uy <juy@slrconsulting.com> wrote:

Hi Katelyn and Raven,

SLR Consulting (Canada) Ltd. has been retained to perform a Phase I Environmental Site Assessment on a property located at:

- **2300 Transport Road, Wabasca, Alberta**

Please inform us of any documentation on file in regard to this site. If you have any questions please feel free to contact me at 780-690-9295.

Thanks,

Joven

Joven Uy, E.I.T

Intermediate Engineer

SLR Consulting (Canada) Ltd.

Cell: 780-690-9295
Office: 780-490-7893
Fax: 780-490-7819
Email: juy@slrconsulting.com

6940 Roper Road, Edmonton, AB, T6B 3H9, Canada

www.slrconsulting.com



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Joven Uy, E.I.T

Intermediate Engineer

SLR Consulting (Canada) Ltd.

Cell: 780-690-9295
Office: 780-490-7893
Fax: 780-490-7819
Email: juy@slrconsulting.com

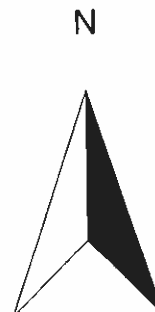
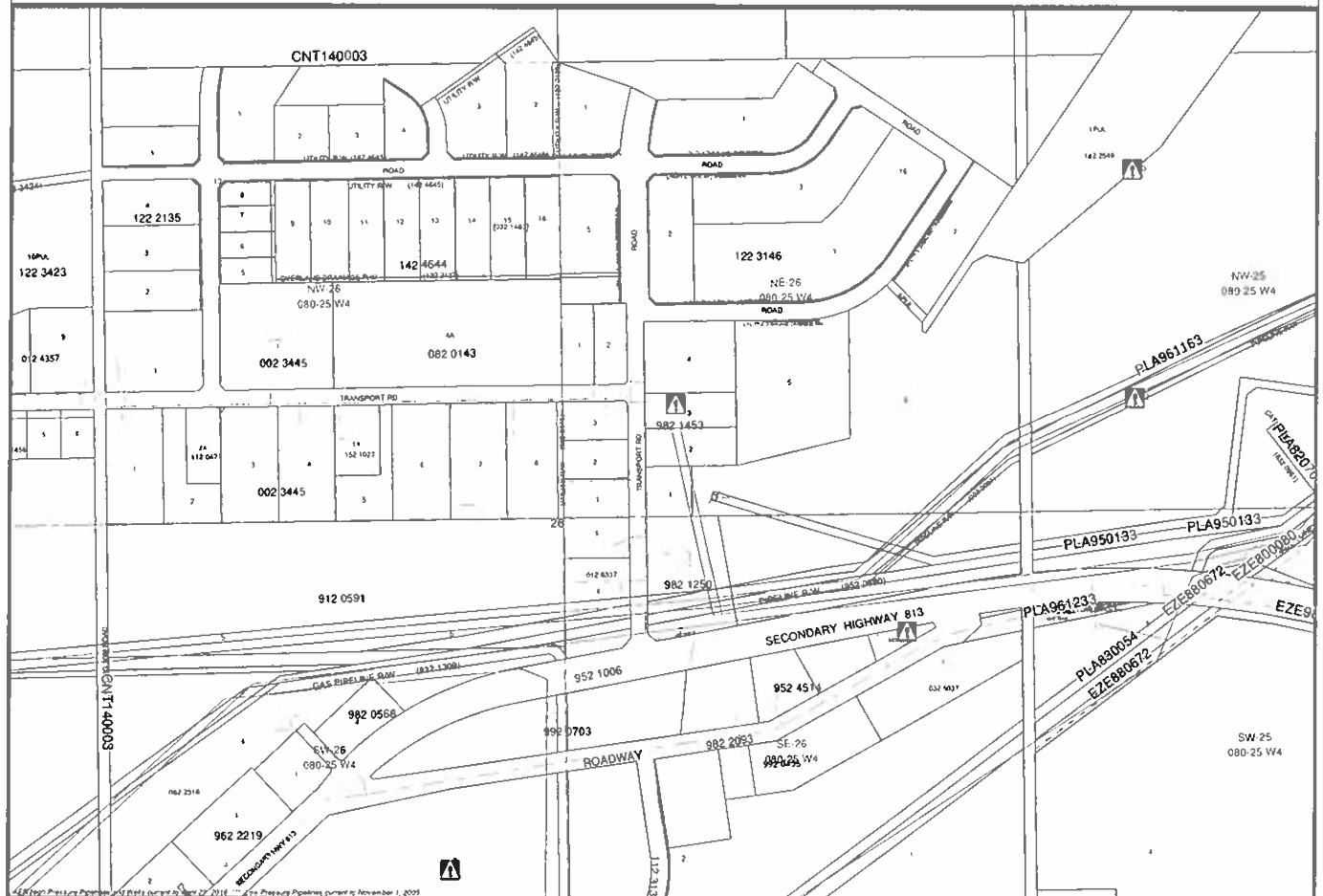
6940 Roper Road, Edmonton, AB, T6B 3H9, Canada



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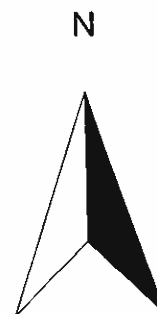
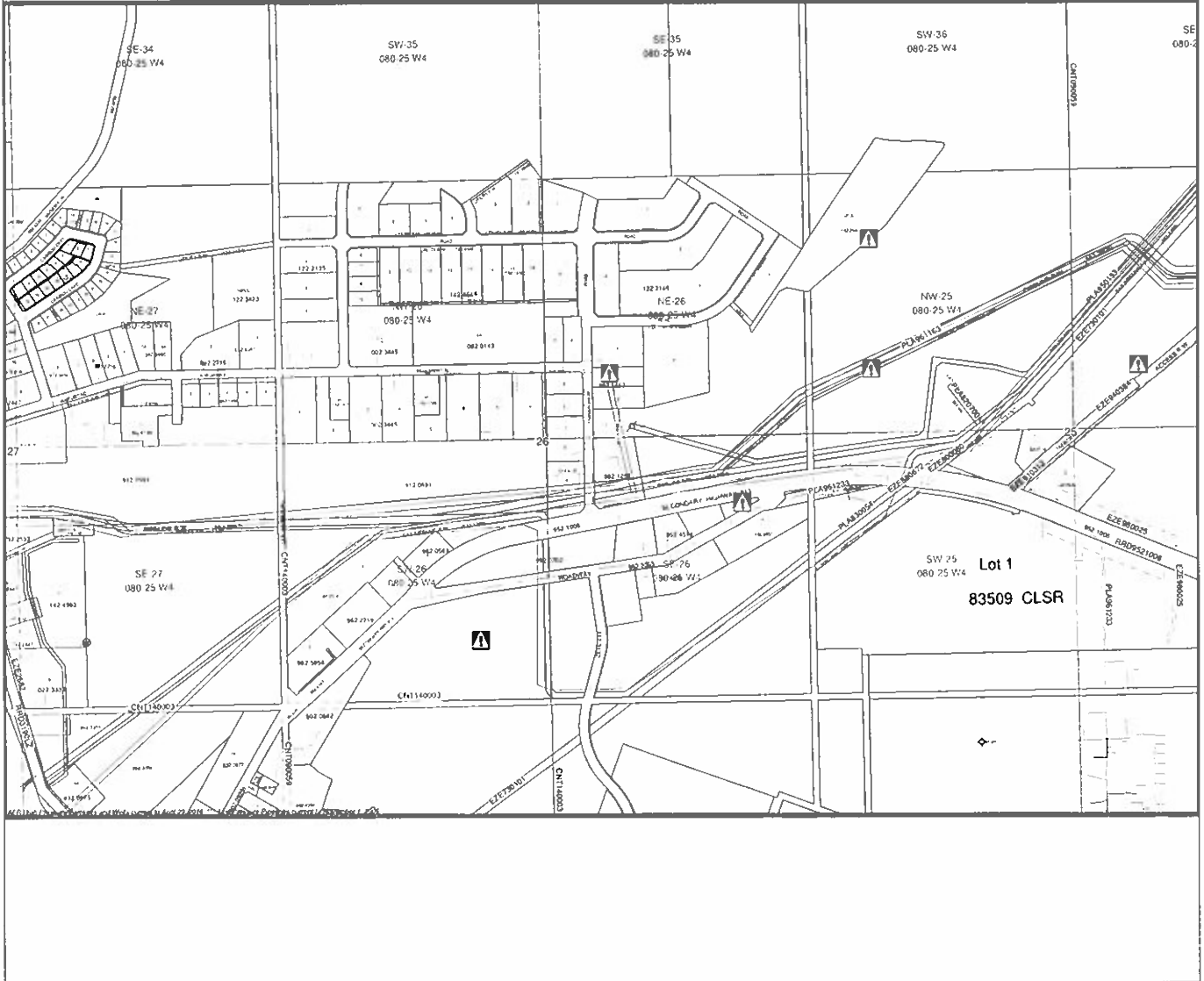
Finning Wabasca 212.06581.00000



Wellheads

- Abandoned Wellhead
 - Suspended Gas Wellhead
 - Suspended Oil Wellhead
 - ✱ Flowing Gas Wellhead
 - Location Wellhead
 - Flowing Oil Wellhead
 - ✱ Miscellaneous Wellhead
 - ✱ Water Wellhead
 - Well Downhole Location
 - Newly Licenced Well
 - Newly Spudded Well
- High Pressure Pipelines
- Gas Pipeline
 - Oil Pipeline
 - Water Pipeline
 - LVP/MVP Pipeline
 - Foreign Pipeline
- (Only when a company is specified)
- Low Pressure Pipelines
- Gas Co-op Pipeline

Finning Wabasca 212.06581.00000 v2



Wellheads

- Abandoned Wellhead
- Suspended Gas Wellhead
- Suspended Oil Wellhead
- ⊗ Flowing Gas Wellhead
- Location Wellhead
- Flowing Oil Wellhead
- ⊗ Miscellaneous Wellhead
- ⊗ Water Wellhead
- ⊗ Well Downhole Location

Newly Licensed Well

Newly Spudded Well

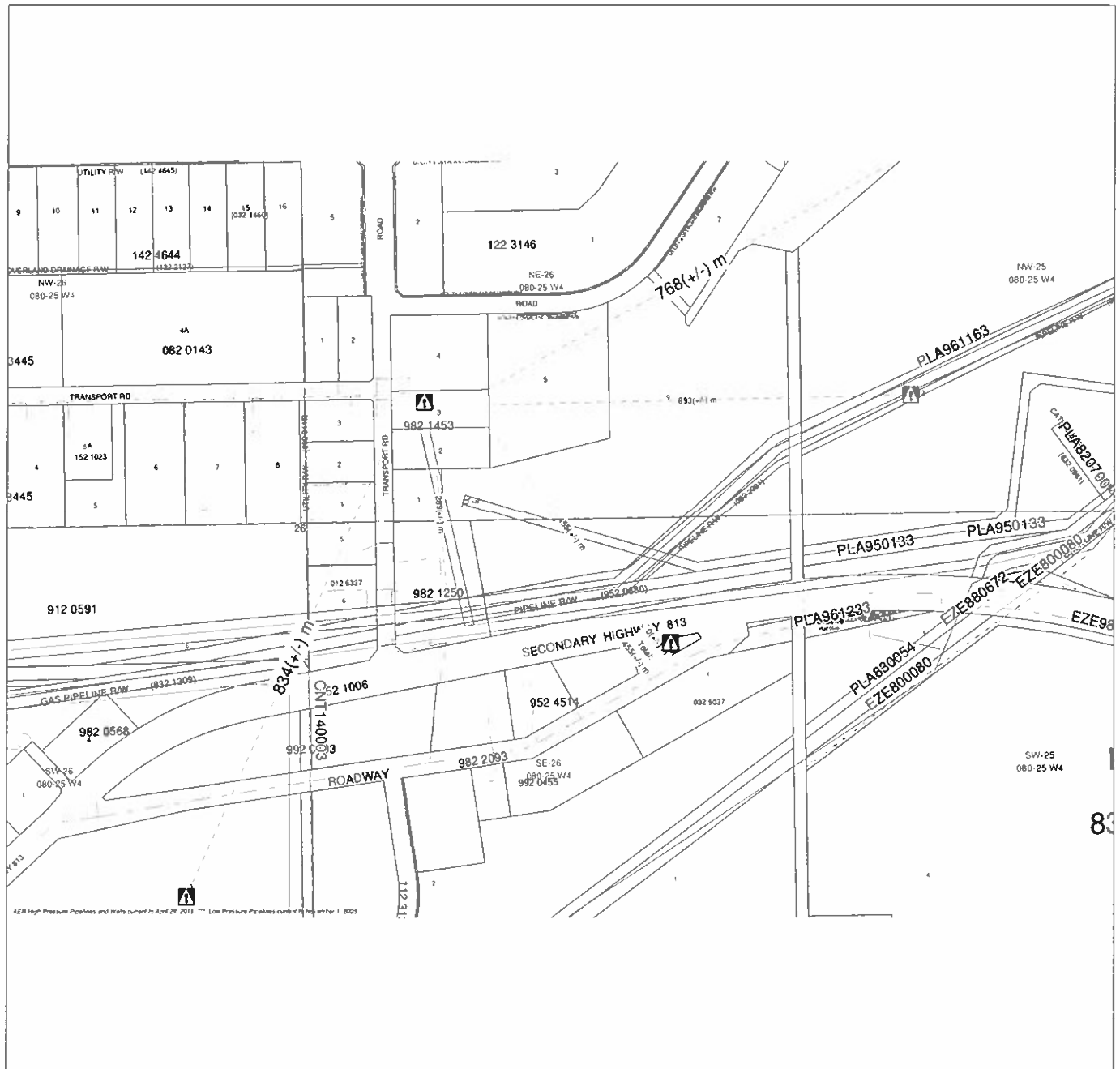
High Pressure Pipelines

- Gas Pipeline
- Oil Pipeline
- Water Pipeline
- LVP/HVP Pipeline
- Foreign Pipeline
- (Only when a company is specified)

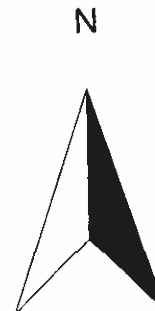
Low Pressure Pipelines

- Gas Co-op Pipeline

Finning Wabasca 212.06581.00000 v3



AER High Pressure Pipelines and Wells Current to April 29, 2011. Low Pressure Pipelines current to September 1, 2005.



Wellheads

- Abandoned Wellhead
- Suspended Gas Wellhead
- Suspended Oil Wellhead
- ⊗ Flowing Gas Wellhead
- Location Wellhead
- Flowing Oil Wellhead
- ⊗ Miscellaneous Wellhead
- ⊗ Water Wellhead
- ⊗ Well Downhole Location
- Newly Licensed Well
- Newly Spudded Well

High Pressure Pipelines

- Gas Pipeline
- Oil Pipeline
- Water Pipeline
- LVP/HVP Pipeline
- Foreign Pipeline (Only when a company is specified)

Low Pressure Pipelines

- Gas Co-op Pipeline

AER SPILL / COMPLAINT INCIDENTS FOR 10-26-080-25W4M			
SPILL - MARCH 30, 2006 - INCIDENT NUMBER: 20060839			
AER NOTIFIED:	MARCH 30, 2006	INCIDENT COMPLETE:	MAY 3, 2006
LICENCE #:	19467 - 28 (Pipeline Licence)		
LICENCEE:	ALTAGAS LTD.		
SOURCE:	NATURAL GAS PIPELINE		
PIPELINE DAMAGE:	HIT	PRESSURE TEST FAILURE?	
PIPELINE OD:	114.3	PIPELINE WT:	3.2
PIPELINE GRADE:	2901		
CAUSE:	EXTERNAL - THIRD PARTY DAMAGE		
FAILURE TYPE:	DAMAGE BY OTHERS		
JURISDICTION:			
STRIKE AREA:	HOOLE	FIELD CENTRE:	BONNYVILLE
# OF INJURIES:		# OF DEATHS:	
SPILL OFFSITE?		SENSITIVE AREA?	
PUBLIC AFFECTED:			
WILDLIFE AFFECTED:			
AREA AFFECTED:			
ENVIRONMENT AFFECTED:			
# EVACUATED:		CLEANUP DATE:	
SUBSTANCES SPILLED:			
SPILL - AUGUST 22, 1999 - INCIDENT NUMBER: 19991935			
AER NOTIFIED:	AUGUST 22, 1999	INCIDENT COMPLETE:	AUGUST 22, 1999
LICENCE #:	19467 - 28 (Pipeline Licence)		
LICENCEE:	AMBER ENERGY INC.		
SOURCE:	NATURAL GAS PIPELINE		
PIPELINE DAMAGE:	LEAK	PRESSURE TEST FAILURE?	NO
PIPELINE OD:	114.3	PIPELINE WT:	3.2
PIPELINE GRADE:	2901		
CAUSE:	CONVERSION		
FAILURE TYPE:	CORROSION INTERNAL		
JURISDICTION:			
STRIKE AREA:	DESMAR	FIELD CENTRE:	BONNYVILLE
# OF INJURIES:	0	# OF DEATHS:	0
SPILL OFFSITE?	YES	SENSITIVE AREA?	NO
PUBLIC AFFECTED:	CONVERSION FROM ENV SYSTEM		
WILDLIFE AFFECTED:	CONVERSION FROM ENV SYSTEM		
AREA AFFECTED:	CONVERSION FROM ENV SYSTEM		
ENVIRONMENT AFFECTED:	AIR/LAND		
# EVACUATED:		CLEANUP DATE:	AUGUST 22, 1999
SUBSTANCES SPILLED:	3 m3 SALT/PRODUCED WATER (3 m3 RECOVERED)		
SPILL - AUGUST 22, 1999 - INCIDENT NUMBER: 19991945			
AER NOTIFIED:	AUGUST 22, 1999	INCIDENT COMPLETE:	AUGUST 22, 1999
LICENCE #:	19467 - 28 (Pipeline Licence)		
LICENCEE:	AMBER ENERGY INC.		
SOURCE:	NATURAL GAS PIPELINE		
PIPELINE DAMAGE:	LEAK	PRESSURE TEST FAILURE?	NO
PIPELINE OD:	114.3	PIPELINE WT:	3.2
PIPELINE GRADE:	2901		
CAUSE:	CONVERSION		

OPTIONS

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FAILURE TYPE:	CORROSION INTERNAL		
JURISDICTION:			
STRIKE AREA:	DESMAR	FIELD CENTRE:	BONNYVILLE
# OF INJURIES:	0	# OF DEATHS:	0
SPILL OFFSITE?	NO	SENSITIVE AREA?	NO
PUBLIC AFFECTED:	CONVERSION FROM ENV SYSTEM		
WILDLIFE AFFECTED:	CONVERSION FROM ENV SYSTEM		
AREA AFFECTED:	CONVERSION FROM ENV SYSTEM		
ENVIRONMENT AFFECTED:	AIR/LAND		
# EVACUATED:		CLEANUP DATE:	AUGUST 22, 1999
SUBSTANCES SPILLED:	10 (1000m ³) GAS PRODUCTION (RAW) 0 (1000m ³) RECOVERED		

AER SPILL / COMPLAINT INCIDENTS FOR 08-26-080-25W4M			
SPILL - MARCH 14, 2000 - INCIDENT NUMBER: 20000819			
AER NOTIFIED:	MARCH 14, 2000	INCIDENT COMPLETE:	MARCH 14, 2000
LICENCE #:	19467 - 28 (Pipeline Licence)		
LICENCEE:	AMBER ENERGY INC.		
SOURCE:	NATURAL GAS PIPELINE		
PIPELINE DAMAGE:	LEAK	PRESSURE TEST FAILURE?	NO
PIPELINE OD:	114.3	PIPELINE WT:	3.2
PIPELINE GRADE:	2901		
CAUSE:	CONVERSION		
FAILURE TYPE:	CORROSION INTERNAL		
JURISDICTION:			
STRIKE AREA:	DESMAR	FIELD CENTRE:	BONNYVILLE
# OF INJURIES:	0	# OF DEATHS:	0
SPILL OFFSITE?	YES	SENSITIVE AREA?	NO
PUBLIC AFFECTED:	CONVERSION FROM ENV SYSTEM		
WILDLIFE AFFECTED:	CONVERSION FROM ENV SYSTEM		
AREA AFFECTED:	CONVERSION FROM ENV SYSTEM		
ENVIRONMENT AFFECTED:	AIR/LAND		
# EVACUATED:		CLEANUP DATE:	MARCH 14, 2000
SUBSTANCES SPILLED:	1 (1000m ³) GAS PRODUCTION (RAW) (0 (1000m ³) RECOVERED) 0.5 m3 SALT/PRODUCED WATER (0 m3 RECOVERED)		

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5/11/2016

AER DATA		ATTACHED FILES		Close Screen	
AER PIPELINE INFORMATION CURRENT TO APRIL 29, 2016					
LICENCE/LINE #:	34341 - 3	PERMIT DATE:	FEBRUARY 15, 2008		
ABACUS #:	123341	LICENCE DATE:			
COMPANY:	CANADIAN NATURAL RESOURCES LIMITED				
FROM LOCATION:	07-11-080-01 W5M BE	TO LOCATION:	07-26-080-25 W4M BE		
LENGTH:	16.86 kms	10.48 mi	STATUS:	D	
SUBSTANCE:	NG	H2S:	0 mol/kmol	0 ppm	
OD:	114.3 mm	4.50 "	WT:	4 mm	0.16 "
MATERIAL:	S	TYPE:	Z245.1		
GRADE:	3591	MOP:	0 kPa	0 psi	
JOINTS:	W	INTL COATING:	U		
STRESS LEVEL:	0 %	ENVIRONMENT:	RC		
ORIGINAL PERMIT DATE:		CONST. DATE:			
ORIGINAL LICENCE/LINE #:	0 - 0	NEB REG:	No		
OPTIONS					
View Company Info					
View Installation Info					
View Entire Licence					
View Licence Ticket					
View Spill Incidents					
Highlight Line					
Highlight Entire Licence					
Print Screen					

AER DATA

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AER PIPELINE INFORMATION
CURRENT TO APRIL 29, 2016

LICENCE/LINE #:	29734 - 3		PERMIT DATE:	JUNE 8, 2015	
ABACUS #:	53522		LICENCE DATE:	APRIL 20, 1998	
COMPANY:	CANADIAN NATURAL RESOURCES LIMITED				
FROM LOCATION:	09-02-081-23 W4M PS		TO LOCATION:	14-02-080-08 W5M PT	
LENGTH:	110 kms	68.35 mi	STATUS:	O	
SUBSTANCE:	CO		H2S:	0 mol/kmol	0 ppm
OD:	508 mm	20.00 "	WT:	9.5 mm	0.37 "
MATERIAL:	S		TYPE:	Z245.1	
GRADE:	4141		MOP:	9930 kPa	1440 psi
JOINTS:	W		INTL COATING:	U	
STRESS LEVEL:	64 %		ENVIRONMENT:	RC	
ORIGINAL PERMIT DATE:	OCTOBER 20, 1997		CONST. DATE:		
ORIGINAL LICENCE/LINE #:	29734 - 3		NEB REG:	No	

OPTIONS

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AER DATA	ATTACHED FILES		Close Screen																																																														
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<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 25%;">LICENCE/LINE #:</td><td style="width: 25%;">19467 - 28</td><td style="width: 25%;">PERMIT DATE:</td><td style="width: 25%;">NOVEMBER 14, 2012</td></tr><tr><td>ABACUS #:</td><td></td><td>LICENCE DATE:</td><td>JUNE 12, 1997</td></tr><tr><td>COMPANY:</td><td colspan="3">ALTAGAS LTD.</td></tr><tr><td>FROM LOCATION:</td><td>10-26-080-25 W4M BE</td><td>TO LOCATION:</td><td>11-31-080-24 W4M BE</td></tr><tr><td>LENGTH:</td><td>3.05 kms</td><td>1.90 mi</td><td>STATUS:</td><td>D</td></tr><tr><td>SUBSTANCE:</td><td>NG</td><td>H2S:</td><td>0.4 mol/kmol</td><td>400 ppm</td></tr><tr><td>OD:</td><td>114.3 mm</td><td>4.50 "</td><td>WT:</td><td>3.2 mm</td><td>0.13 "</td></tr><tr><td>MATERIAL:</td><td>S</td><td>TYPE:</td><td colspan="2">Z245.1</td></tr><tr><td>GRADE:</td><td>2901</td><td>MOP:</td><td>0 kPa</td><td>0 psi</td></tr><tr><td>JOINTS:</td><td>W</td><td>INTL COATING:</td><td colspan="2">U</td></tr><tr><td>STRESS LEVEL:</td><td>0 %</td><td>ENVIRONMENT:</td><td colspan="2"></td></tr><tr><td>ORIGINAL PERMIT DATE:</td><td>DECEMBER 12, 1996</td><td>CONST. DATE:</td><td colspan="2"></td></tr><tr><td>ORIGINAL LICENCE/LINE #:</td><td>19467 - 28</td><td>NEB REG:</td><td colspan="2">No</td></tr></table>				LICENCE/LINE #:	19467 - 28	PERMIT DATE:	NOVEMBER 14, 2012	ABACUS #:		LICENCE DATE:	JUNE 12, 1997	COMPANY:	ALTAGAS LTD.			FROM LOCATION:	10-26-080-25 W4M BE	TO LOCATION:	11-31-080-24 W4M BE	LENGTH:	3.05 kms	1.90 mi	STATUS:	D	SUBSTANCE:	NG	H2S:	0.4 mol/kmol	400 ppm	OD:	114.3 mm	4.50 "	WT:	3.2 mm	0.13 "	MATERIAL:	S	TYPE:	Z245.1		GRADE:	2901	MOP:	0 kPa	0 psi	JOINTS:	W	INTL COATING:	U		STRESS LEVEL:	0 %	ENVIRONMENT:			ORIGINAL PERMIT DATE:	DECEMBER 12, 1996	CONST. DATE:			ORIGINAL LICENCE/LINE #:	19467 - 28	NEB REG:	No	
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This pipeline falls under NEB regulations. The graphics were originally supplied by the AER however, they are no longer maintaining the data. In order to provide the most accurate product possible, AbaData is attempting to maintain these NEB regulated pipelines. If you notice an error or omission, please email abadata@abacusdatagraphics.com and we will rectify the data.

**AER PIPELINE INFORMATION
CURRENT TO APRIL 29, 2016**

LICENCE/LINE #:	80479 - 18	PERMIT DATE:	
ABACUS #:		LICENCE DATE:	JUNE 3, 2009
COMPANY:	NOVA GAS TRANSMISSION LTD.		
FROM LOCATION:	16-36-080-25 W4M MS	TO LOCATION:	12-09-080-25 W4M PL
LENGTH:	10.38 kms 6.45 mi	STATUS:	O
SUBSTANCE:	NG	H2S:	0 mol/kmol 0 ppm
OD:	273.1 mm 10.75 "	WT:	4.8 mm 0.19 "
MATERIAL:	S	TYPE:	Z245.1
GRADE:	3592	MOP:	8450 kPa 1226 psi
JOINTS:	W	INTL COATING:	U
STRESS LEVEL:	67 %	ENVIRONMENT:	
ORIGINAL PERMIT DATE:		CONST. DATE:	
ORIGINAL LICENCE/LINE #:	0 - 0	NEB REG:	Yes

AER DATA		ATTACHED FILES		Close Screen	
AER PIPELINE INFORMATION CURRENT TO APRIL 29, 2016					
LICENCE/LINE #:		19467 - 45		PERMIT DATE: MARCH 27, 2000	
ABACUS #:				LICENCE DATE: SEPTEMBER 27, 2000	
COMPANY:		ALTAGAS LTD.			
FROM LOCATION:		10-26-080-25 W4M WE		TO LOCATION: 07-26-080-25 W4M PL	
LENGTH:		0.3 kms 0.19 mi		STATUS: O	
SUBSTANCE:		NG		H2S: 0.4 mol/kmol 400 ppm	
OD:		114.3 mm 4.50 "		WT: 3.2 mm 0.13 "	
MATERIAL:		S		TYPE: Z245.1	
GRADE:		2901		MOP: 9930 kPa 1440 psi	
JOINTS:		W		INTL COATING: U	
STRESS LEVEL:		61 %		ENVIRONMENT:	
ORIGINAL PERMIT DATE:		MARCH 27, 2000		CONST. DATE:	
ORIGINAL LICENCE/LINE #:		19467 - 45		NEB REG: No	
OPTIONS View Company Info View Installation Info View Entire Licence View Licence Ticket View Spill Incidents Highlight Line Highlight Entire Licence Print Screen					

AER DATA		ATTACHED FILES		Close Screen																																																																															
AER PIPELINE INFORMATION CURRENT TO APRIL 29, 2016 <table border="1"><tr><td>LICENCE/LINE #:</td><td>19467 - 28</td><td>PERMIT DATE:</td><td colspan="3">NOVEMBER 14, 2012</td></tr><tr><td>ABACUS #:</td><td></td><td>LICENCE DATE:</td><td colspan="3">JUNE 12, 1997</td></tr><tr><td>COMPANY:</td><td colspan="5">ALTAGAS LTD.</td></tr><tr><td>FROM LOCATION:</td><td>10-26-080-25 W4M BE</td><td>TO LOCATION:</td><td colspan="3">11-31-080-24 W4M BE</td></tr><tr><td>LENGTH:</td><td>3.05 kms</td><td>1.90 mi</td><td>STATUS:</td><td colspan="2">D</td></tr><tr><td>SUBSTANCE:</td><td>NG</td><td>H2S:</td><td>0.4 mol/kmol</td><td colspan="2">400 ppm</td></tr><tr><td>OD:</td><td>114.3 mm</td><td>4.50 "</td><td>WT:</td><td>3.2 mm</td><td>0.13 "</td></tr><tr><td>MATERIAL:</td><td>S</td><td>TYPE:</td><td colspan="3">Z245.1</td></tr><tr><td>GRADE:</td><td>2901</td><td>MOP:</td><td>0 kPa</td><td colspan="2">0 psi</td></tr><tr><td>JOINTS:</td><td>W</td><td>INTL COATING:</td><td colspan="3">U</td></tr><tr><td>STRESS LEVEL:</td><td>0 %</td><td>ENVIRONMENT:</td><td colspan="3"></td></tr><tr><td>ORIGINAL PERMIT DATE:</td><td>DECEMBER 12, 1996</td><td>CONST. DATE:</td><td colspan="3"></td></tr><tr><td>ORIGINAL LICENCE/LINE #:</td><td>19467 - 28</td><td>NEB REG:</td><td colspan="3">No</td></tr></table>						LICENCE/LINE #:	19467 - 28	PERMIT DATE:	NOVEMBER 14, 2012			ABACUS #:		LICENCE DATE:	JUNE 12, 1997			COMPANY:	ALTAGAS LTD.					FROM LOCATION:	10-26-080-25 W4M BE	TO LOCATION:	11-31-080-24 W4M BE			LENGTH:	3.05 kms	1.90 mi	STATUS:	D		SUBSTANCE:	NG	H2S:	0.4 mol/kmol	400 ppm		OD:	114.3 mm	4.50 "	WT:	3.2 mm	0.13 "	MATERIAL:	S	TYPE:	Z245.1			GRADE:	2901	MOP:	0 kPa	0 psi		JOINTS:	W	INTL COATING:	U			STRESS LEVEL:	0 %	ENVIRONMENT:				ORIGINAL PERMIT DATE:	DECEMBER 12, 1996	CONST. DATE:				ORIGINAL LICENCE/LINE #:	19467 - 28	NEB REG:	No		
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ORIGINAL PERMIT DATE:	DECEMBER 12, 1996	CONST. DATE:																																																																																	
ORIGINAL LICENCE/LINE #:	19467 - 28	NEB REG:	No																																																																																
OPTIONS View Company Info View Installation Info View Entire Licence View Licence Ticket View Spill Incidents Highlight Line Highlight Entire Licence Print Screen																																																																																			

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**Authorization Viewer -
Search Results****The Search Used the Following Values:**

Legal Land Location:	26-080-25-W4
Act / Document Type:	Water Act, EPEA
Show Inactive Authorizations:	Yes

The resulting Authorizations based on the search criteria will be displayed below. A  will appear next to the Authorization when documentation is available for viewing or downloading. Please click [Viewer Help](#) if you encounter problems viewing the Authorization document.

4 Result(s)

	Document 00279281-00-00 WABASCA STORM DRAINAGE SYSTEM - 40 LOTS RESIDENTIAL SUBDIVISION is held by Municipal District of Opportunity No. 17, under the provisions of the <i>Environmental Protection & Enhancement Act</i> . This Registration is currently issued as of Feb. 16, 2011 and does not expire.
	Document 00279281-00-01 WABASCA STORM DRAINAGE SYSTEM - DOWNTOWN 2011 CONSTRUCTION/DEVELOPMENT is held by Municipal District of Opportunity No. 17, under the provisions of the <i>Environmental Protection & Enhancement Act</i> . This Registration is currently issued as of Jun. 06, 2011 and does not expire.
	Document 00279281-00-02 WABASCA STORM DRAINAGE SYSTEM - INDUSTRIAL SUBDIVISION - STAGE 1 is held by Municipal District of Opportunity No. 17, under the provisions of the <i>Environmental Protection & Enhancement Act</i> . This Registration is currently issued as of Oct. 06, 2011 and does not expire.
	Document 00279281-00-03 WABASCA STORM DRAINAGE SYSTEM - JR INDUSTRIAL PARK - PHASE I is held by Municipal District of Opportunity No. 17, under the provisions of the <i>Environmental Protection & Enhancement Act</i> . This Registration is currently issued as of Oct. 06, 2011 and does not expire.

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DATABASE REPORT

Project Property: *Finning Former TCRS Wabasca
2300 Transport Road
Wabasca AB
212.06381.00000.0000*

Project No: *212.06381.00000.0000*

Report Type: *Standard Report*

Order No: *20160518263*

Requested by: *SLR Consulting (Canada) Ltd.*

Date Completed: *May 25, 2016*

Ecolog ERIS Ltd.
Environmental Risk Information
Service Ltd. (ERIS)
A division of Glacier Media Inc.
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Executive Summary

Property Information:

Project Property: *Finning Former TCRS Wabasca
2300 Transport Road Wabasca AB*

Project No: *212.06381.00000.0000*

Coordinates:

Latitude: *55.964272*
Longitude: *-113.800379*
UTM Northing: *6,205,644.05*
UTM Easting: *325,211.39*
UTM Zone: *UTM Zone 12U*

Elevation: *1,824 FT
556.00 M*

Order Information:

Order No: *20160518263*
Date Requested: *May 18, 2016*
Requested by: *SLR Consulting (Canada) Ltd.*
Report Type: *Standard Report*

Additional Products:

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Within 0.25 km	Total
AGR	Agriculture and Fisheries - Certificates of Approval	Y	0	0	0
AOGW	Alberta Oil and Gas Wells	Y	0	3	3
AUWR	Automobile Wrecking & Supplies	Y	0	0	0
CAWD	Waste Management Facilities - Certificates of Approval	Y	0	0	0
CFO	Confined Feeding Operations	Y	0	0	0
CHEM	Chemical Processing Operations - Certificates of Approval	Y	0	0	0
CONV	Compliance and Convictions	Y	0	0	0
EAS	Enforcement Action Summary	Y	0	0	0
EEM	Environmental Effects Monitoring	Y	0	0	0
EHS	ERIS Historical Searches	Y	0	2	2
EIIS	Environmental Issues Inventory System	Y	0	0	0
ESAR	Environmental Site Assessment Repository	Y	0	0	0
FAC	Facility List	Y	0	0	0
FCON	Federal Convictions	Y	0	0	0
FCS	Waste Generators Summary	Y	0	0	0
FIS	Field Inspection Incident Report	Y	0	3	3
FOOD	Food Processing Operations - Certificates of Approval	Y	0	0	0
FST	PTMAA Fuel Storage Tanks	Y	0	0	0
GEN	Waste Generators Summary	Y	0	0	0
GHG	Greenhouse Gas Emissions from Large Facilities	Y	0	0	0
GPP	Gas Processing Plants	Y	0	0	0
HELP	Alberta Environment's H.E.L.P. (Help End Landfill Pollution) Program Database	Y	0	0	0
HORW	Horizontal Wells	Y	0	0	0
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
LDS	Identification and Verification of Active and Inactive Land Disposal Sites	Y	0	0	0
LDSI	Land Disposal Sites on Indian Reserves	Y	0	0	0
LUM	Lumber Related Operations - Certificates of Approval	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MMB	Metals, Minerals and Building Materials Operations - Certificates of Approval	Y	0	0	0
MNR	Mineral Occurrences	Y	0	0	0
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBW	National Energy Board Wells	Y	0	0	0

Database	Name	Searched	Project Property	Within 0.25 km	Total
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OAM	Operating and Abandoned Mines	Y	0	0	0
OGW	Oil and Gas Wells	Y	0	1	1
ORP	Alberta Orphan Wells	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PCG	Petrochemical, Coal and Gas Operations - Certificates of Approval	Y	0	0	0
PES	Pesticide Register	Y	0	0	0
PITS	Conglomerate and Waste Management Facilities	Y	0	0	0
PSP	Alberta Private Sewage Disposal Permits	Y	0	0	0
REC	Hazardous Waste Receivers Summary	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	0	0
SPEC	Special Operation Classifications - Certificates of Approval	Y	0	0	0
WDS	Inventory of Waste Disposal Sites	Y	0	0	0
WSTE	Wastewater Operations	Y	0	0	0
WWIS	Water Well Information System	Y	0	0	0
Total:			0	9	9

Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev diff (m)</i>	<i>Page Number</i>
--------------------	-----------	--------------------------	----------------	---------------------	--------------------------	------------------------

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
<u>1</u>	EHS		2290 Pelican Road Wabasca AB	NNW/59.1	0.00	<u>12</u>
<u>2</u>	AOGW		AB	E/83.0	2.00	<u>12</u>
<u>2</u>	AOGW		AB	E/83.0	2.00	<u>12</u>
<u>2</u>	AOGW		AB	E/83.0	2.00	<u>12</u>
<u>2</u>	FIS		AB	E/83.0	2.00	<u>13</u>
<u>2</u>	FIS		AB	E/83.0	2.00	<u>13</u>
<u>2</u>	FIS		AB	E/83.0	2.00	<u>13</u>
<u>2</u>	OGWW	AMBER ENERGY INC.	AB	E/83.0	2.00	<u>14</u>
<u>3</u>	EHS		2300 Pelican Drive Wabasca AB	SW/177.9	-2.00	<u>14</u>

Executive Summary: Summary By Data Source

AOGW - Alberta Oil and Gas Wells

A search of the AOGW database, dated 1883-Sept 2003* has found that there are 3 AOGW site(s) within approximately 0.25 kilometers of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (m)</u>	<u>Map Key</u>
	AB	E	83.02	<u>2</u>
	AB	E	83.02	<u>2</u>
	AB	E	83.02	<u>2</u>

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (m)</u>	<u>Map Key</u>
-------------------------------	-----------------------	-------------------------	----------------------------	-----------------------

EHS - ERIS Historical Searches

A search of the EHS database, dated 1999-Aug 2014 has found that there are 2 EHS site(s) within approximately 0.25 kilometers of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (m)</u>	<u>Map Key</u>
	2290 Pelican Road Wabasca AB	NNW	59.09	<u>1</u>

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (m)</u>	<u>Map Key</u>
	2300 Pelican Drive Wabasca AB	SW	177.89	<u>3</u>

FIS - Field Inspection Incident Report

A search of the FIS database, dated 1975-2015 has found that there are 3 FIS site(s) within approximately 0.25 kilometers of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (m)</u>	<u>Map Key</u>
	AB	E	83.02	<u>2</u>
	AB	E	83.02	<u>2</u>
	AB	E	83.02	<u>2</u>

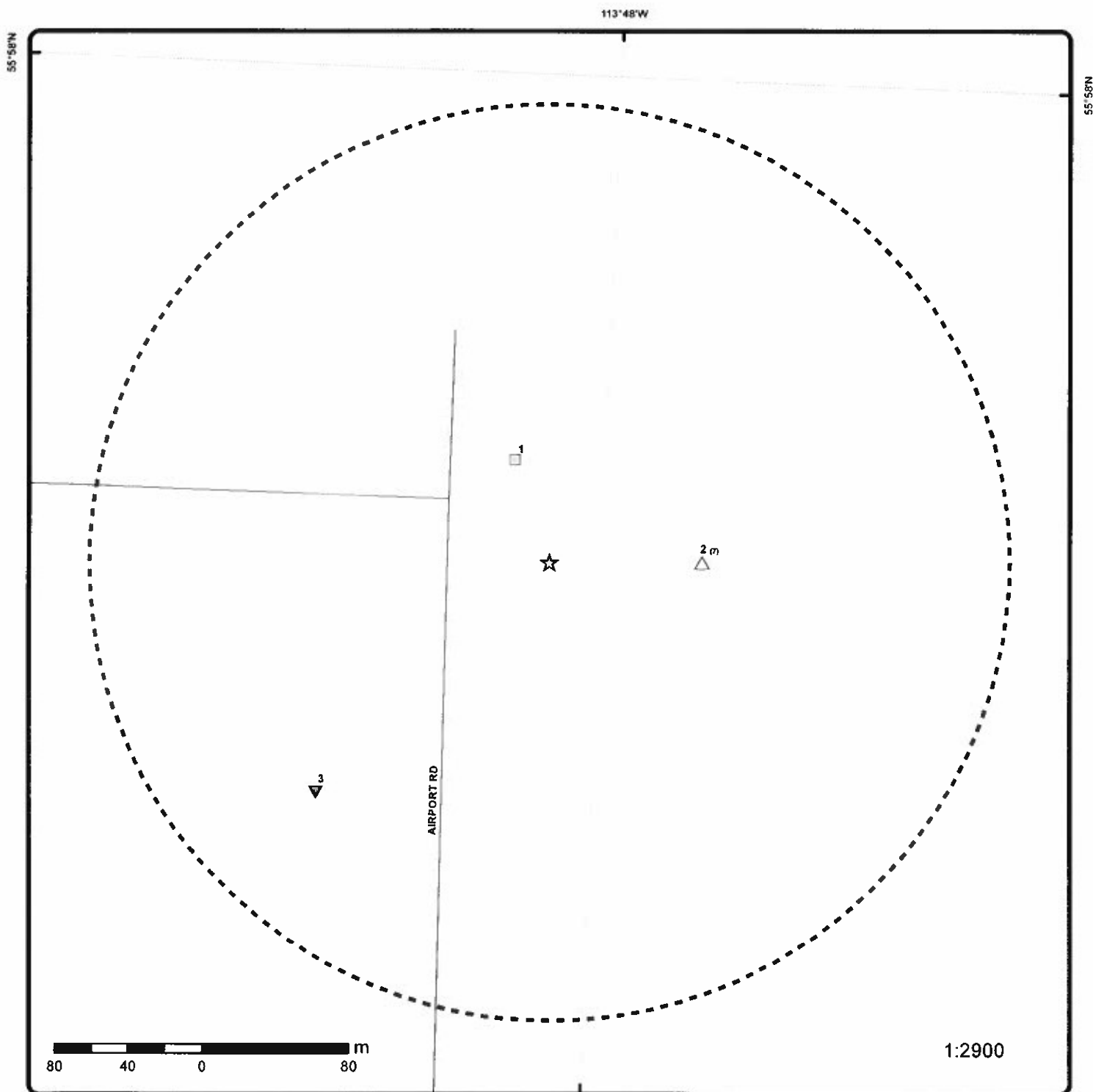
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (m)</u>	<u>Map Key</u>
------------------------	----------------	------------------	---------------------	----------------

OGW - Oil and Gas Wells

A search of the OGW database, dated 1988-2015 has found that there are 1 OGW site(s) within approximately 0.25 kilometers of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (m)</u>	<u>Map Key</u>
AMBER ENERGY INC.	AB	E	83.02	<u>2</u>

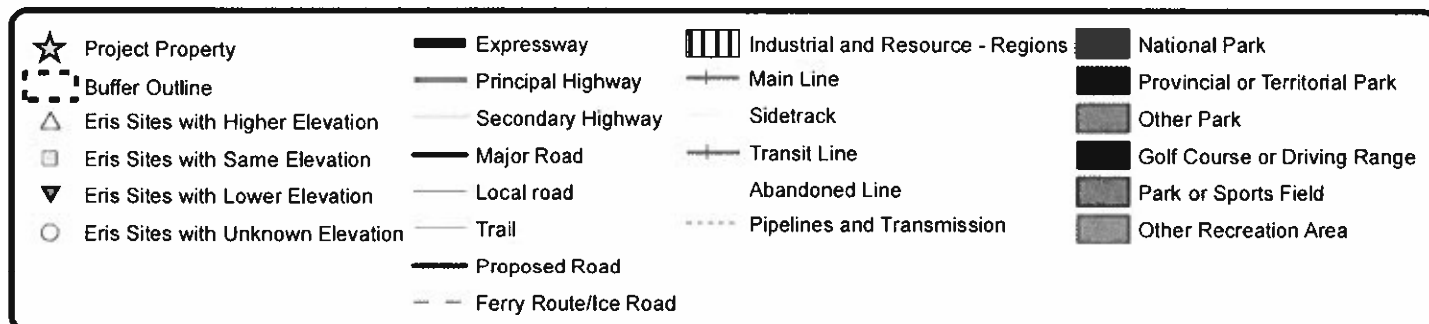
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (m)</u>	<u>Map Key</u>
------------------------	----------------	------------------	---------------------	----------------



Map

Order No: 20160518263

Address: 2300 Transport Road, Wabasca, AB



113°48'W



Aerial

Order No: 20160518263

Address: 2300 Transport Road, Wabasca, AB

Source: ESRI World Imagery, Updated October 2014

© Ecolog ERIS Ltd

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
<u>1</u>	1 of 1	NNW/59.1	556.0	2290 Pelican Road Wabasca AB	EHS
Addit. Info Ordered: Order No.: 20120312011 Report Date: 3/21/2012 12:12:41 PM Report Type: Standard Report Search Radius (km): 0.25					
<u>2</u>	1 of 7	E/83.0	558.0	AB	AOGW
Licence NO: 0191976 Licence Date: 19961002 Mode: ABANDONED ZONE Well Status Date: 19971208 Total Depth (m): 0462.00 Final Drill Date: 19961009 Well Name: AECOG DESMARAIS 10-26-80-25 Licencee Address: P.O. Box 2850, 2900, 421 - 7 Avenue SW Calgary, AB T2P 4K9					
ATS Coordinates: 10-26-80-25-4 Structure: Type: Fluid: Licencee: Encana Oil & Gas Co. Ltd.					
<u>2</u>	2 of 7	E/83.0	558.0	AB	AOGW
Licence NO: 0191976 Licence Date: 19961002 Mode: FLOWING Well Status Date: 19971214 Total Depth (m): 0462.00 Final Drill Date: 19961009 Well Name: AECOG DESMARAIS 10-26-80-25 Licencee Address: P.O. Box 2850, 2900, 421 - 7 Avenue SW Calgary, AB T2P 4K9					
ATS Coordinates: 10-26-80-25-4 Structure: Type: Fluid: GAS Licencee: Encana Oil & Gas Co. Ltd.					
<u>2</u>	3 of 7	E/83.0	558.0	AB	AOGW
Licence NO: 0191976 Licence Date: 19961002 Mode: DRILLED & CASED Well Status Date: 19961010 Total Depth (m): 0462.00 Final Drill Date: 19961009 Well Name: AECOG DESMARAIS 10-26-80-25 Licencee Address: P.O. Box 2850, 2900, 421 - 7 Avenue SW Calgary, AB T2P 4K9					
ATS Coordinates: 10-26-80-25-4 Structure: Type: Fluid: Licencee: Encana Oil & Gas Co. Ltd.					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
<u>2</u>	4 of 7	E/83.0	558.0	AB	FIS
Incident NO: 19991935 Incident Type: Release Licence NO: 19467 Licence Type: Pipeline Licence Source: Natural Gas Pipeline Cause Category: Cause Type: Failure Type: Corrosion Internal Field Centre: Bonnyville Licencee ID: OPN2 Injury Count: 0 Fatality Count: 0 Jurisdiction: Location: 10-26-080-25W4 Licencee Name: Amber Energy Inc. Source In Compliance: n/a Substances Released: (1)Salt/Produced Water - Amt Released: 3 m3, Amt Recovered: 3 m3 Wildlife Affected: Area Affected: Public Evacuated: Cleanup Date: 22 Aug 1999 Pipeline Licen NO: 28 Pipe Damage: Leak Concern Type: n/a Incident Date: 22 Aug 1999 Notification Date: 22 Aug 1999 Release Offsite: Yes Sensitive Area: No Public Affected: Environ Affected: Air/Land					
<u>2</u>	5 of 7	E/83.0	558.0	AB	FIS
Incident NO: 19991945 Incident Type: Release Licence NO: 19467 Licence Type: Pipeline Licence Source: Natural Gas Pipeline Cause Category: Cause Type: Failure Type: Corrosion Internal Field Centre: Bonnyville Licencee ID: OPN2 Injury Count: 0 Fatality Count: 0 Jurisdiction: Location: 10-26-080-25W4 Licencee Name: Amber Energy Inc. Source In Compliance: n/a Substances Released: (1)Gas Production (Raw) - Amt Released: 10 103m3, Amt Recovered: 0 103m3 Wildlife Affected: Area Affected: Public Evacuated: Cleanup Date: 22 Aug 1999 Pipeline Licen NO: 28 Pipe Damage: Leak Concern Type: n/a Incident Date: 22 Aug 1999 Notification Date: 22 Aug 1999 Release Offsite: No Sensitive Area: No Public Affected: Environ Affected: Air/Land					
<u>2</u>	6 of 7	E/83.0	558.0	AB	FIS
Incident NO: 20060839 Incident Type: Release Licence NO: 19467 Licence Type: Pipeline Licence Source: Natural Gas Pipeline Cause Category: External Cause Type: Third party damage Failure Type: Damage By Others Wildlife Affected: Area Affected: Public Evacuated: Cleanup Date: Pipeline Licen NO: 28 Pipe Damage: Hit Concern Type: n/a Incident Date: 30 Mar 2006					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Field Centre: Bonnyville Licencee ID: A0TK Injury Count: Fatality Count: Jurisdiction: Location: 10-26-080-25W4 Licencee Name: AltaGas Ltd. Source In Compliance: n/a Substances Released:					
Notification Date: 30 Mar 2006 Release Offsite: Sensitive Area: Public Affected: Environ Affected:					
<u>2</u>	7 of 7	E/83.0	558.0	AMBER ENERGY INC.	OGWW
AB					
Area ID: DESMARAIS Well Name: AMBER DESMARAIS 10-26-80-25 Licence ID: 191976 Well Class: DEVELOPMENT WELL Drill Date: 96/10/07 Type: Total Depth (ft): 431.00 Well Status: gas well					
<u>3</u>	1 of 1	SW/177.9	554.0	2300 Pelican Drive Wabasca AB	EHS
Addit. Info Ordered: Fire Insur. Maps And /or Site Plans Order No.: 20080620015 Report Date: 7/2/2008 Report Type: Complete Report Search Radius (km): 0.25					

Unplottable Summary

Total: 2 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
SPEC	Amber Energy Inc.		Municipal District of Opportunity AB	T2P 3H3
SPEC	Amber Energy Inc.		Municipal District of Opportunity AB	T2P 3H3

Unplottable Report

Site: *Amber Energy Inc.*
Municipal District of Opportunity AB T2P 3H3

Database:
SPEC

Certificate NO: 00047407 00 00
Status: Operating
Status Date: 10/25/97
Effective Date: 8/25/97
Expiry Date:
Description: Exploration Operations
Facility Name: AMBER ENERGY INC. PELICAN OIL SANDS EXPLORATION PROGRAM
Operator: Amber Energy Inc.
Mailing Address: 1100 321 6 AVE SW, Calgary, AB, T2P 3H3

Approval Type:
DLS: -83-19-4
Lot:
Block:
Plan:

Site: *Amber Energy Inc.*
Municipal District of Opportunity AB T2P 3H3

Database:
SPEC

Certificate NO: 00020399 00 00
Status: Operating
Status Date: 11/27/96
Effective Date: 11/27/96
Expiry Date:
Description: Exploration Operations
Facility Name: AMBER ENERGY INC. PELICAN LAKE OIL SANDS EXPLORATION PROGRAM
Operator: Amber Energy Inc.
Mailing Address: 1100 321 6 AVE SW, Calgary, AB, T2P 3H3

Approval Type:
DLS: -81-22-4
Lot:
Block:
Plan:

Appendix: Database Descriptions

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

Agriculture and Fisheries - Certificates of Approval:

Provincial AGR

This database contains approvals for processes pertaining to drying of alfalfa/forage/peat, feedlots, fish farms and feed/seed mills. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Alberta Oil and Gas Wells:

Provincial AOGW

The Alberta Energy Utilities Board - now the Alberta Energy Regulator (AER) - maintained a database of all oil and gas wells drilled in the province of Alberta. The database contains information on well name, licensee name, license number, location, status, total well depth and date of final drilling. Please note that this database will not be updated, information on wells drilled after September 2003 can be found in the Oil and Gas Wells (OGW) database under the 'Private Source Database' section.

*Government Publication Date: 1883-Sept 2003**

Automobile Wrecking & Supplies:

Private AUWR

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

Government Publication Date: 2001-Jul 2014

Waste Management Facilities - Certificates of Approval:

Provincial CAWD

This database contains approvals for processes pertaining to waste management facilities (hazardous waste manifesting, waste disposal/incineration/open burning/processing/storage/treatment). Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Confined Feeding Operations:

Provincial CFO

In 1991, the Natural Resources Conservation Board (NRCB) was created to review applications for approval of major natural resource development projects in Alberta. In January 2002, the NRCB was given the responsibility to regulate the Confined Feeding Operation industry. The Agricultural Operation Practices Act defines a confined feeding operation to be: "an activity on land that is fenced or enclosed or within buildings where livestock are confined for the purpose of growing, sustaining, finishing or breeding by means other than grazing, but does not include seasonal feeding and bedding sites." Under the AOPA regulations, all new or expanding confined feeding operations (CFOs) or manure storage facilities are required to make an application for Approval, Registration or Authorization to the NRCB before construction or expansion commences. Geographic coordinates were provided in DLS (Dominion Land Survey) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the Quarter section only.

Government Publication Date: 2002-Jun 2013

Chemical Processing Operations - Certificates of Approval:

Provincial CHEM

This database contains approvals for processes pertaining to the manufacturing and use of chemical products and pesticides. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Compliance and Convictions:

Provincial CONV

This database summarizes the penalties and convictions handed down by the Alberta courts. This database identifies companies and/or individuals that have been found guilty of environmental offenses under Alberta's Environmental Protection Legislation. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Unfortunately, from state of the data, the location that the address pertains to cannot be confirmed.

Government Publication Date: 1993-Sep 2015

Enforcement Action Summary:

Provincial EAS

This database maintained by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB) - summarizes high risk enforcement action 1, high risk enforcement action 2 (persistent noncompliance), high risk enforcement action 3 (failure to comply or demonstrated disregard), low risk enforcement action - global REFER and legislative/regulatory enforcement action. Fields will include licensee/company name, non-compliance event, date of enforcement, location, etc.

Government Publication Date: 2007-Nov 2015

Environmental Effects Monitoring:

Federal EEM

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

Government Publication Date: 1992-2007*

ERIS Historical Searches:

Private EHS

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

Government Publication Date: 1999-Aug 2014

Environmental Issues Inventory System:

Federal EIIS

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

Government Publication Date: 1992-2001*

Environmental Site Assessment Repository:

Provincial ESAR

Environmental site assessments determine the quality of soil and groundwater of a site, particularly at retail gas stations and other commercial and industrial sites. A site assessment does not necessarily mean a site is, or ever was, contaminated. Alberta's Environmental Site Assessment Repository (ESAR) is an online, searchable database that provides scientific and technical information about assessed and/or reclaimed sites throughout Alberta. Search Alberta's ESAR using meridian, range, township, and section values at <http://www.esar.alberta.ca/esarmain.aspx> to gain access to reclamation certificates and/or associated files (applications, reports).

Government Publication Date: 1960-Sep 2015

Facility List:

Provincial FAC

This database contains a complete list of new, active and suspended facilities in Alberta including batteries, gas plants, meter stations, and other facilities. Information provided includes: facility id, facility name, operator name, sub type description, location, facility license no, and operational status; now includes EDCT (Energy Development Category Type) type and description. Made available by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB).

Government Publication Date: Up to Sep 2015

Federal Convictions:

Federal FCON

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

*Government Publication Date: 1988-Jun 2007**

Waste Generators Summary:

Federal FCS

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government.

Government Publication Date: June 2000-Oct 2015

Field Inspection Incident Report:

Provincial FIS

Received from the Alberta Energy Regulator (AER) - formerly the ERCB (Energy Resources Conservation Board) and EUB (Energy Utilities Board) - this database, which used to be called EISL (Environmental Information System Listing), contains reported environmental incidents beginning in 1975. Descriptions include noise infractions, air quality emissions, oil spills and failures for pipelines, wells, plants, and batteries. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1975-2015

Food Processing Operations - Certificates of Approval:

Provincial FOOD

This database contains approvals for processes pertaining to the manufacturing of food products. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

PTMAA Fuel Storage Tanks:

Provincial FST

Information in this database was collected according to Alberta Regulation AR 291/95 Storage Tank System Management and to AR 52/98 Fire Code which was formerly The Alberta Fire Code Regulation, 1992 (AR 204/92). This information was received from the Petroleum Tank Management Association of Alberta (PTMAA) which has regulated Storage Tanks since 1994.

Government Publication Date: 1985-Feb 2015

Waste Generators Summary:

Provincial GEN

Under Alberta's Waste Control Regulation, Alta. Reg. 192/96, a generator is a person who consigns hazardous waste for storage, transport, treatment or disposal. As of 2007, Alberta Environment no longer provides detailed information on each waste generator, such as approval number, class, and class description.

Government Publication Date: 1993-Feb 2015

Greenhouse Gas Emissions from Large Facilities:

Federal GHG

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO₂ eq).

Government Publication Date: Dec 31, 2013

Gas Processing Plants:

Provincial GPP

The Alberta Energy Regulator (AER) - formerly the ERCB (Energy Resources Conservation Board) - has an inventory of all Gas Processing Plants in Alberta, with information such as location, names of plant, facility type, operator name, facility license, design capacities, etc.

Government Publication Date: Up to May 2015

Alberta Environment's H.E.L.P. (Help End Landfill Pollution) Program Database:

Provincial HELP

The H.E.L.P. Data Tracking and Management Control System was created to provide tracking and management capabilities of industrial landfills in Alberta for the Department of Environment. Detailed information including company name, location, type of landfill, priority, score, status, use and much more is included in this database.

Government Publication Date: June 1988*

Horizontal Wells:

Provincial HORW

Defined as drilling directionally at a wellbore inclination angle exceeding 85 degrees, horizontal drilling can help increase resource recovery while minimizing surface impact. Recent improvements in the technology have made it possible to combine horizontal drilling with hydraulic fracturing to help coax oil and natural gas out of tight rock. Today, more than half of western Canada's wells are being drilled horizontally. Data includes: well locations (LE,LS,SE,TWP,RG,M,E), licence numbers, well names, Business Associate (BA) codes, licensee abbreviations, spud dates, final drilling dates, total depth, true vertical depth, and last updated dates. Made available by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB).

Government Publication Date: Up to Oct 2015

Indian & Northern Affairs Fuel Tanks:

Federal IAFT

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

Government Publication Date: 1950-Aug 2003*

Identification and Verification of Active and Inactive Land Disposal Sites:

Provincial LDS

In late 1981, Environment Canada and Alberta Environment initiated a project to identify and verify land disposal sites in the province of Alberta. A point scoring system was used to classify the sites into potential priority 1, priority 2 or priority 3 groups on the basis of the type of waste received at the sites and the site environment. Sites that, according to available information, may pose a hazard to public health and safety or the environment are classified as potential priority 1 sites.

Government Publication Date: Oct 1982*

Land Disposal Sites on Indian Reserves:

Provincial LDSI

In late 1981, Environment Canada and Alberta Environment initiated a project to identify and verify land disposal sites in the province of Alberta. This database specifically identifies land disposal sites on Indian Reserves. Information on each site is limited to: location, band, size and general comments.

Government Publication Date: Oct 1982*

Lumber Related Operations - Certificates of Approval:

Provincial LUM

This database contains approvals for processes pertaining to the manufacturing of wood products, pulp and paper including the associated water treatment processes. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Canadian Mine Locations:

Private

MINE

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

*Government Publication Date: 1998-2009**

Metals, Minerals and Building Materials Operations - Certificates of Approval:

Provincial

MMB

This database contains approvals for processes pertaining to the manufacturing of building materials, metals, and mineral products. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Mineral Occurrences:

Provincial

MNR

The AMDO (Alberta Mineral Deposits and Occurrences) application was created by the Minerals and Coal Geoscience Section of the Alberta Geological Survey as a database for mineral deposits in Alberta in the early 1990s. This is a one time inventory and will not be updated.

*Government Publication Date: 1993-2003**

National Analysis of Trends in Emergencies System (NATES):

Federal

NATE

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

*Government Publication Date: 1974-1994**

National Defense & Canadian Forces Fuel Tanks:

Federal

NDFT

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

*Government Publication Date: Up to May 2001**

National Defense & Canadian Forces Spills:

Federal

NDSP

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

Government Publication Date: Mar 1999-Aug 2010

National Defence & Canadian Forces Waste Disposal Sites:

Federal

NDWD

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

*Government Publication Date: 2001-Apr 2007**

National Energy Board Wells:

Federal

NEBW

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

*Government Publication Date: 1920-Feb 2003**

National Environmental Emergencies System (NEES):

Federal NEES

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

*Government Publication Date: 1974-2003**

National PCB Inventory:

Federal NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

*Government Publication Date: 1988-2008**

National Pollutant Release Inventory:

Federal NPRI

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

Government Publication Date: 1993-2013

Operating and Abandoned Mines:

Provincial OAM

This data is based on the 2001 edition (revised in 2003), published by the Alberta Energy and Utilities Board (EUB) now the Alberta Energy Regulator (AER). It was a one time inventory of Operating and Abandoned Coal Mines in Alberta. In 1905, Alberta began to catalogue coal mines by assigning a unique number to each operation. This database will provide information on location, mine #, mine name, mine company, life span, amount of coal produced, depth, thickness and other important information concerning the mine.

*Government Publication Date: 2001, 2003**

Oil and Gas Wells:

Private OGW

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

Government Publication Date: 1988-2015

Alberta Orphan Wells:

Provincial ORP

Orphan wells are wells that have not been properly abandoned and whose operators are defunct or insolvent. In Alberta, orphan wells fall under the responsibility of the Orphan Well Association, which works under the the delegated authority of the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB). The data includes Location, Well ID, License Name and License Number.

Government Publication Date: Up to Oct 2015

Canadian Pulp and Paper:

Private

PAP

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

Government Publication Date: 1999, 2002, 2004, 2005, 2009

Parks Canada Fuel Storage Tanks:

Federal

PCFT

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

*Government Publication Date: 1920-Jan 2005**

Petrochemical, Coal and Gas Operations - Certificates of Approval:

Provincial

PCG

This database contains approvals for processes pertaining to petroleum, coal, and oil and gas processing. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Pesticide Register:

Provincial

PES

This is a list of all Registered Pesticide Vendors in Alberta (retail and wholesale). The pesticide vendor list is comprised of vendors who have both audited AWSA pesticide storage facilities as part of their operation, and those vendors that do not have an audited AWSA pesticide storage facilities. Non-audited retail and wholesale vendors may be selling products that are not covered by the AWSA program, or may be utilizing external AWSA pesticide warehouses. Registration numbers and expiry dates are identified for each operation. If a registration number is not present, the operation's vendor registration is in the process of renewal.

Government Publication Date: 1998-Aug 2015

Conglomerate and Waste Management Facilities:

Provincial

PITS

This database contains approvals for processes pertaining to the use of gravel pits, sand pits, and clay pits. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Alberta Private Sewage Disposal Permits:

Provincial

PSP

These permits are private sewage disposal permits that have been issued to owners and contractors. They would include various types of installations including holding tanks, septic tanks, packaged treatment plants, sand filters, fields, mounds, lagoons and open discharges. In 2003 Alberta Municipal Affairs started collecting information and issuing permits using an electronic permitting system. These records include all private sewage disposal permits within the jurisdiction of Alberta Municipal Affairs.

Government Publication Date: 2003-2013

Hazardous Waste Receivers Summary:

Provincial

REC

A waste receiving location is any site or facility to which waste is transferred through a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents receivers of regulated wastes under Alberta's Waste Control Regulation, Alta. Reg. 192/96. As of 2007, Alberta Environment no longer provides detailed information on each waste receiver, such as approval number, class, and class description.

Government Publication Date: 1993-Feb 2015

Retail Fuel Storage Tanks:

Private

RST

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

Government Publication Date: 1999-Jul 2014

Scott's Manufacturing Directory:

Private

SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

*Government Publication Date: 1992-Mar 2011**

Special Operation Classifications - Certificates of Approval:

Provincial

SPEC

This database contains approvals for processes pertaining to classifications listed as special operations (i.e. locations owned/operated by municipalities, operations that involve the presence of pesticides). Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Inventory of Waste Disposal Sites:

Private

WDS

This one time inventory is a compilation of information collected from each region and pertains to active, regulated waste disposal sites within the province of Alberta. In the past, waste disposal sites were registered with both regional and health offices. That process was dissolved and regional landfills were developed. There is no central source of this information. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

*Government Publication Date: 1998**

Wastewater Operations:

Provincial

WSTE

This database contains approvals for processes pertaining to wastewater treatment systems. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Water Well Information System:

Provincial

WWIS

This database was collected from the Groundwater Information Center of the Natural Resource Service and contains over 387,000 records. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1880-Mar 2015

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries". All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and were included as reference.

APPENDIX D
Laboratory Results

Former TCRS Wabasca
Phase I ESA & Soil Excavation Program
Plan 9821453, Block 3, Lot 3
Wabasca, AB
SLR Project No.: 212.06581.00000

Your P.O. #: EDM2970
Your Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your C.O.C. #: A153554

Attention: IAN YOUNG

SLR CONSULTING (CANADA) LTD
6940 ROPER ROAD
EDMONTON, AB
CANADA T6B 3H9

Report Date: 2016/05/26
Report #: R2186547
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: 8638375

Received: 2016/05/18, 11:27

Sample Matrix: Soil
Samples Received: 1

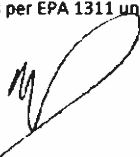
Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX in Leachates by HS GC/MS/FID (1)	1	2016/05/20	2016/05/21	AB SOP-00039	EPA 8260C m
Flash Point	1	N/A	2016/05/19	AB SOP-00062	ASTM D3828-12A/A m
ICPMS Metals on TCLP Leachate (1)	1	2016/05/20	2016/05/21	AB SOP-00015 / AB SOP-00043	EPA 200.8 R5.4 m
Free Liquid (Paint filter)	1	N/A	2016/05/19	AB SOP-00047	EPA 9095B R2 m
TCLP pH Measurements	1	2016/05/20	2016/05/21	AB SOP-00015 / AB SOP-00006	SM 22 4500 H+B m
pH @25C (1:1 extract, solid waste)	1	2016/05/21	2016/05/21	AB SOP-00033 / AB SOP-00006	SM 22 4500-H B m

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

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

(1) Samples were extracted as per EPA 1311 unless otherwise noted in the report.

Encryption Key



Alexander Dobbie
Project Manager
26 May 2016 15:41:16 -06:00

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

Alexander Dobbie, Project Manager

Email: ADobbie@maxxam.ca

Phone# (780)577-7116

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

Maxxam Job #: B638375
Report Date: 2016/05/26

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

BASIC CLASS II LANDFILL PACKAGE (SOIL)

Maxxam ID		OQ6732		
Sampling Date		2016/05/17 12:00		
COC Number		A153554		
	UNITS	CS1	RDL	QC Batch
Soluble Parameters				
Soluble (1:1) pH	pH	6.59	N/A	8276517
Physical Properties				
Free Liquid	N/A	PASS	N/A	8274280
Volatiles				
Leachable (ZH) Benzene	mg/L	<0.010	0.010	8276329
Leachable (ZH) Toluene	mg/L	<0.010	0.010	8276329
Leachable (ZH) Ethylbenzene	mg/L	<0.010	0.010	8276329
Leachable (ZH) o-Xylene	mg/L	<0.010	0.010	8276329
Leachable (ZH) m & p-Xylene	mg/L	<0.020	0.020	8276329
Leachable (ZH) Xylenes (Total)	mg/L	<0.020	0.020	8276329
Surrogate Recovery (%)				
Leachable (ZH) 1,4-Difluorobenzene (sur.)	%	103	N/A	8276329
Leachable (ZH) 4-BROMOFLUOROBENZENE (sur.)	%	99	N/A	8276329
Leachable (ZH) D4-1,2-DICHLOROETHANE (sur.)	%	111	N/A	8276329
RDL = Reportable Detection Limit N/A = Not Applicable				

Maxxam Job #: B638375
Report Date: 2016/05/26

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		OQ6732	
Sampling Date		2016/05/17 12:00	
COC Number		A153554	
	UNITS	CS1	QC Batch
Misc. Inorganics			
Leachable Initial pH of Sample	pH	7.03	8276072
Leachable pH after HCl	pH	1.87	8276072
Leachable Final pH of Leachate	pH	4.93	8276072
Physical Properties			
Closed Cup Flash Point	deg. C	>61	8274274

Maxxam Job #: B638375
Report Date: 2016/05/26

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		OQ6732		
Sampling Date		2016/05/17 12:00		
COC Number		A153554		
	UNITS	CS1	RDL	QC Batch
Elements				
Leachable Antimony (Sb)	mg/L	<1.0	1.0	8276574
Leachable Arsenic (As)	mg/L	<0.50	0.50	8276574
Leachable Barium (Ba)	mg/L	<1.0	1.0	8276574
Leachable Beryllium (Be)	mg/L	<0.50	0.50	8276574
Leachable Boron (B)	mg/L	<1.0	1.0	8276574
Leachable Cadmium (Cd)	mg/L	<0.10	0.10	8276574
Leachable Chromium (Cr)	mg/L	<0.50	0.50	8276574
Leachable Cobalt (Co)	mg/L	<1.0	1.0	8276574
Leachable Copper (Cu)	mg/L	<1.0	1.0	8276574
Leachable Iron (Fe)	mg/L	45	1.0	8276574
Leachable Lead (Pb)	mg/L	<0.50	0.50	8276574
Leachable Mercury (Hg)	mg/L	<0.020	0.020	8276574
Leachable Nickel (Ni)	mg/L	<0.50	0.50	8276574
Leachable Selenium (Se)	mg/L	<0.10	0.10	8276574
Leachable Silver (Ag)	mg/L	<0.50	0.50	8276574
Leachable Thallium (Tl)	mg/L	<0.50	0.50	8276574
Leachable Uranium (U)	mg/L	<0.20	0.20	8276574
Leachable Vanadium (V)	mg/L	<1.0	1.0	8276574
Leachable Zinc (Zn)	mg/L	<1.0	1.0	8276574
Leachable Zirconium (Zr)	mg/L	<1.0	1.0	8276574
RDL = Reportable Detection Limit				

Maxxam Job #: B638375
Report Date: 2016/05/26

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

GENERAL COMMENTS

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

Package 1	5.0°C
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Sample QQ6732-01 : Modified EPA 1311 zero headspace method used for extraction.

Results relate only to the items tested.

Maxxam Job #: B638375
Report Date: 2016/05/26

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8274274	JB9	RPD	Closed Cup Flash Point	2016/05/19	NC		%	35
8276072	JLO	Spiked Blank	Leachable Initial pH of Sample	2016/05/21		100	%	97 - 103
			Leachable pH after HCl	2016/05/21		100	%	97 - 103
			Leachable Final pH of Leachate	2016/05/21		100	%	97 - 103
8276072	JLO	Method Blank	Leachable Initial pH of Sample	2016/05/21	4.92		pH	
			Leachable Final pH of Leachate	2016/05/21	4.91		pH	
8276072	JLO	RPD	Leachable Initial pH of Sample	2016/05/21	2.1		%	N/A
			Leachable Final pH of Leachate	2016/05/21	0.43		%	N/A
8276329	PS7	Matrix Spike	Leachable (ZH) 1,4-Difluorobenzene (sur.)	2016/05/21		100	%	70 - 130
			Leachable (ZH) 4-BROMOFLUOROBENZENE (s	2016/05/21		102	%	70 - 130
			Leachable (ZH) D4-1,2-DICHLOROETHANE (su	2016/05/21		108	%	70 - 130
			Leachable (ZH) Benzene	2016/05/21		95	%	70 - 130
			Leachable (ZH) Toluene	2016/05/21		83	%	70 - 130
			Leachable (ZH) Ethylbenzene	2016/05/21		93	%	70 - 130
			Leachable (ZH) o-Xylene	2016/05/21		92	%	70 - 130
			Leachable (ZH) m & p-Xylene	2016/05/21		90	%	70 - 130
8276329	PS7	Spiked Blank	Leachable (ZH) 1,4-Difluorobenzene (sur.)	2016/05/21		102	%	70 - 130
			Leachable (ZH) 4-BROMOFLUOROBENZENE (s	2016/05/21		101	%	70 - 130
			Leachable (ZH) D4-1,2-DICHLOROETHANE (su	2016/05/21		110	%	70 - 130
			Leachable (ZH) Benzene	2016/05/21		96	%	70 - 130
			Leachable (ZH) Toluene	2016/05/21		86	%	70 - 130
			Leachable (ZH) Ethylbenzene	2016/05/21		95	%	70 - 130
			Leachable (ZH) o-Xylene	2016/05/21		94	%	70 - 130
			Leachable (ZH) m & p-Xylene	2016/05/21		89	%	70 - 130
8276329	PS7	Method Blank	Leachable (ZH) 1,4-Difluorobenzene (sur.)	2016/05/21		105	%	70 - 130
			Leachable (ZH) 4-BROMOFLUOROBENZENE (s	2016/05/21		101	%	70 - 130
			Leachable (ZH) D4-1,2-DICHLOROETHANE (su	2016/05/21		107	%	70 - 130
			Leachable (ZH) Benzene	2016/05/21	<0.010		mg/L	
			Leachable (ZH) Toluene	2016/05/21	<0.010		mg/L	
			Leachable (ZH) Ethylbenzene	2016/05/21	<0.010		mg/L	
			Leachable (ZH) o-Xylene	2016/05/21	<0.010		mg/L	
			Leachable (ZH) m & p-Xylene	2016/05/21	<0.020		mg/L	
			Leachable (ZH) Xylenes (Total)	2016/05/21	<0.020		mg/L	
8276329	PS7	RPD	Leachable (ZH) Benzene	2016/05/21	NC		%	50
			Leachable (ZH) Toluene	2016/05/21	NC		%	50
			Leachable (ZH) Ethylbenzene	2016/05/21	NC		%	50
			Leachable (ZH) o-Xylene	2016/05/21	NC		%	50
			Leachable (ZH) m & p-Xylene	2016/05/21	NC		%	50
			Leachable (ZH) Xylenes (Total)	2016/05/21	NC		%	50
8276517	CH7	QC Standard	Soluble (1:1) pH	2016/05/21		99	%	97 - 103
8276517	CH7	Spiked Blank	Soluble (1:1) pH	2016/05/21		100	%	99 - 101
8276517	CH7	RPD	Soluble (1:1) pH	2016/05/21	0.77		%	N/A
8276574	APY	Matrix Spike	Leachable Antimony (Sb)	2016/05/21		105	%	75 - 125
			Leachable Arsenic (As)	2016/05/21		104	%	75 - 125
			Leachable Barium (Ba)	2016/05/21		97	%	75 - 125
			Leachable Beryllium (Be)	2016/05/21		102	%	75 - 125
			Leachable Boron (B)	2016/05/21		100	%	75 - 125
			Leachable Cadmium (Cd)	2016/05/21		102	%	75 - 125
			Leachable Chromium (Cr)	2016/05/21		99	%	75 - 125
			Leachable Cobalt (Co)	2016/05/21		98	%	75 - 125
			Leachable Copper (Cu)	2016/05/21		95	%	75 - 125

Maxxam Job #: 8638375
Report Date: 2016/05/26

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8276574	APY	Spiked Blank	Leachable Iron (Fe)	2016/05/21		98	%	75 - 125	
			Leachable Lead (Pb)	2016/05/21		99	%	75 - 125	
			Leachable Mercury (Hg)	2016/05/21		98	%	75 - 125	
			Leachable Nickel (Ni)	2016/05/21		96	%	75 - 125	
			Leachable Selenium (Se)	2016/05/21		100	%	75 - 125	
			Leachable Silver (Ag)	2016/05/21		98	%	75 - 125	
			Leachable Thallium (Tl)	2016/05/21		96	%	75 - 125	
			Leachable Uranium (U)	2016/05/21		101	%	75 - 125	
			Leachable Vanadium (V)	2016/05/21		103	%	75 - 125	
			Leachable Zinc (Zn)	2016/05/21		97	%	75 - 125	
			Leachable Zirconium (Zr)	2016/05/21		108	%	75 - 125	
			Leachable Antimony (Sb)	2016/05/21		102	%	80 - 120	
			Leachable Arsenic (As)	2016/05/21		102	%	80 - 120	
			Leachable Barium (Ba)	2016/05/21		99	%	80 - 120	
			Leachable Beryllium (Be)	2016/05/21		102	%	80 - 120	
			Leachable Boron (B)	2016/05/21		99	%	80 - 120	
			Leachable Cadmium (Cd)	2016/05/21		100	%	80 - 120	
			Leachable Chromium (Cr)	2016/05/21		97	%	80 - 120	
			Leachable Cobalt (Co)	2016/05/21		95	%	80 - 120	
			Leachable Copper (Cu)	2016/05/21		94	%	80 - 120	
			Leachable Iron (Fe)	2016/05/21		98	%	80 - 120	
			Leachable Lead (Pb)	2016/05/21		98	%	80 - 120	
			Leachable Mercury (Hg)	2016/05/21		99	%	80 - 120	
			Leachable Nickel (Ni)	2016/05/21		95	%	80 - 120	
			Leachable Selenium (Se)	2016/05/21		99	%	80 - 120	
			Leachable Silver (Ag)	2016/05/21		96	%	80 - 120	
			Leachable Thallium (Tl)	2016/05/21		97	%	80 - 120	
			Leachable Uranium (U)	2016/05/21		101	%	80 - 120	
			Leachable Vanadium (V)	2016/05/21		101	%	80 - 120	
			Leachable Zinc (Zn)	2016/05/21		97	%	80 - 120	
			Leachable Zirconium (Zr)	2016/05/21		104	%	80 - 120	
8276574	APY	Method Blank	Leachable Antimony (Sb)	2016/05/21	<1.0		mg/L		
			Leachable Arsenic (As)	2016/05/21	<0.50		mg/L		
			Leachable Barium (Ba)	2016/05/21	<1.0		mg/L		
			Leachable Beryllium (Be)	2016/05/21	<0.50		mg/L		
			Leachable Boron (B)	2016/05/21	<1.0		mg/L		
			Leachable Cadmium (Cd)	2016/05/21	<0.10		mg/L		
			Leachable Chromium (Cr)	2016/05/21	<0.50		mg/L		
			Leachable Cobalt (Co)	2016/05/21	<1.0		mg/L		
			Leachable Copper (Cu)	2016/05/21	<1.0		mg/L		
			Leachable Iron (Fe)	2016/05/21	<1.0		mg/L		
			Leachable Lead (Pb)	2016/05/21	<0.50		mg/L		
			Leachable Mercury (Hg)	2016/05/21	<0.020		mg/L		
			Leachable Nickel (Ni)	2016/05/21	<0.50		mg/L		
			Leachable Selenium (Se)	2016/05/21	<0.10		mg/L		
			Leachable Silver (Ag)	2016/05/21	<0.50		mg/L		
			Leachable Thallium (Tl)	2016/05/21	<0.50		mg/L		
			Leachable Uranium (U)	2016/05/21	<0.20		mg/L		
			Leachable Vanadium (V)	2016/05/21	<1.0		mg/L		
			Leachable Zinc (Zn)	2016/05/21	<1.0		mg/L		
			Leachable Zirconium (Zr)	2016/05/21	<1.0		mg/L		

Maxxam Job #: B638375
Report Date: 2016/05/26

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC				Date				
Batch	Init	QC Type	Parameter	Analyzed	Value	Recovery	UNITS	QC Limits
8276574	APY	RPD	Leachable Antimony (Sb)	2016/05/21	NC		%	35
			Leachable Arsenic (As)	2016/05/21	NC		%	35
			Leachable Barium (Ba)	2016/05/21	NC		%	35
			Leachable Beryllium (Be)	2016/05/21	NC		%	35
			Leachable Boron (B)	2016/05/21	NC		%	35
			Leachable Cadmium (Cd)	2016/05/21	NC		%	35
			Leachable Chromium (Cr)	2016/05/21	NC		%	35
			Leachable Cobalt (Co)	2016/05/21	NC		%	35
			Leachable Copper (Cu)	2016/05/21	NC		%	35
			Leachable Iron (Fe)	2016/05/21	NC		%	35
			Leachable Lead (Pb)	2016/05/21	NC		%	35
			Leachable Mercury (Hg)	2016/05/21	NC		%	35
			Leachable Nickel (Ni)	2016/05/21	NC		%	35
			Leachable Selenium (Se)	2016/05/21	NC		%	35
			Leachable Silver (Ag)	2016/05/21	NC		%	35
			Leachable Thallium (Tl)	2016/05/21	NC		%	35
			Leachable Uranium (U)	2016/05/21	NC		%	35
			Leachable Vanadium (V)	2016/05/21	NC		%	35
			Leachable Zinc (Zn)	2016/05/21	NC		%	35
			Leachable Zirconium (Zr)	2016/05/21	NC		%	35

N/A = Not Applicable

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

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

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Job #: B638375
Report Date: 2016/05/26

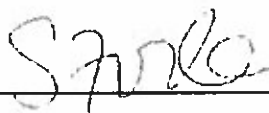
SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

VALIDATION SIGNATURE PAGE

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



Poonam Sharma, cCT, Organics Senior Analyst



Suwan Fock, B.Sc., QP, Inorganics Senior Analyst

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

Company: SLB Consulting (Canada) Ltd.
Contact: Tina Young
Address: 6540 River Road, Edmonton, AB T6B 3H9
Contact #s: (403) 490-7893 Fax: (403) 490-8864

Report To: [] Same as Invoice
Report Distribution (E-Mail): tjyoung@slbconsulting.com
 jyoung@slbconsulting.com

REGULATORY GUIDELINES:
☐ AT1
☐ CCME
☐ Regulated Drinking Water
☐ Other:

PO #: EDM2470
Project # / Name: 212.0551.0000.0002
Site Location: Webasin, AB
Quote #:
Sampled By: Treally
SERVICE REQUESTED:
☐ RUSH (Contact lab to reserve)
☒ REGULAR (5 to 7 Days)

SOIL				WATER				Other Analysis			
Sample ID	Depth (unit)	Matrix GW / SW / Soil	Date/Time Sampled YY/MM/DD HH:MM	BTEX F1-F4	Sieve (75 micron)	Regulated Metals (CCME / AT1)	Salinity 4	Assessment (CP Metals)	Basic Class II Landfill	Other Analysis	# of Containers Submitted
1	CS1	Soil	16/05/18 12:00						X		1
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

Relinquished By (Signature/Print): [Signature]
Date (YY/MM/DD): 16/05/18
Time (24:00): 11:00
Relinquished By (Signature/Print): [Signature]
Date (YY/MM/DD): 20/06/18
Time (24:00): 11:00
of Jars Used & Not Submitted: 2/6/7

Received By: [Signature]
Date: 16/05/18
Time: 11:00
Maximum Job #: 8638375
Custody Seal: [Signature]
Temperature: 26.7
Ice: yes

Your P.O. #: EDM2970
Your Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your C.O.C. #: A153553

Attention: IAN YOUNG

SLR CONSULTING (CANADA) LTD
6940 ROPER ROAD
EDMONTON, AB
CANADA T6B 3H9

Report Date: 2016/06/02
Report #: R2190697
Version: 5 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B638377

Received: 2016/05/18, 11:27

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1)	3	2016/05/19	2016/05/20	AB SOP-00039	CCME CWS/EPA 8260c m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1)	3	2016/05/19	2016/05/21	AB SOP-00039	CCME CWS/EPA 8260c m
CCME (F2-F4 in soil) - OCBO (2, 3)	1	2016/05/27	2016/06/01	AB SOP-00040 AB SOP-00036	CCME PHC-CWS
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	3	2016/05/19	2016/05/20	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	1	2016/05/19	2016/05/24	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	2	2016/05/19	2016/05/26	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS
Glycol in Soil by GC/FID	1	2016/05/19	2016/05/20	CAL SOP-00093	EPA 8015D R4 m
Moisture (1)	6	N/A	2016/05/20	AB SOP-00002	CCME PHC-CWS
Lead (1)	1	2016/05/20	2016/05/20	AB SOP-00001 / AB SOP-00043	EPA 200.8 R5.4 m
Particle Size by Sieve (75 micron) (1)	1	N/A	2016/05/25	EENV SOP-00077	Carter 2nd ed 55.4 m
VOCs in Soil by HS GC/MS (Std List)	1	2016/05/19	2016/05/20	AB SOP-00056	EPA 5021a/8260c m
VOCs in Soil by HS GC/MS Low (Std List)	1	2016/05/19	2016/05/19	AB SOP-00056	EPA 5021a/8260c m

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

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

(1) This test was performed by Maxxam Edmonton Environmental

(2) Capric Acid is a reverse surrogate and a measure of the column efficiency. The more efficient the column the lower the Capric Acid Recovery.

(3) OCBO - Optimized Cleanup of Biogenic Organics, includes Silica Column Cleanup

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

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

Attention: IAN YOUNG

SLR CONSULTING (CANADA) LTD
6940 ROPER ROAD
EDMONTON, AB
CANADA T6B 3H9

Your P.O. #: EDM2970
Your Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your C.O.C. #: A153553

Report Date: 2016/06/02
Report #: R2190697
Version: 5 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B638377

Received: 2016/05/18, 11:27

Encryption Key



Wendy Sears
Project manager
02 Jun 2016 17:27:26 -06:00

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

Carmen McKay, Project Manager

Email: CMcKay@maxxam.ca

Phone# (403)219-3683

=====

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

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		OQ6753	OQ6753		OQ6754	OQ6755	OQ6756		
Sampling Date		2016/05/17 10:15	2016/05/17 10:15		2016/05/17 10:20	2016/05/17 10:25	2016/05/17 10:30		
COC Number		A153553	A153553		A153553	A153553	A153553		
	UNITS	JU1	JU1 Lab-Dup	QC Batch	JU2	JU4	JU5	RDL	QC Batch
Physical Properties									
Moisture	%	15	15	8274405	16	18	8.7	0.30	8274127
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	8275464	20	<10	<10	10	8275114
F3 (C16-C34 Hydrocarbons)	mg/kg	1800	1700	8275464	1700	480	97	50	8275114
F4 (C34-C50 Hydrocarbons)	mg/kg	69	66	8275464	72	<50	<50	50	8275114
Reached Baseline at C50	mg/kg	Yes	Yes	8275464	Yes	Yes	Yes	N/A	8275114
Volatiles									
Benzene	mg/kg	<0.0050	<0.0050	8275395	<0.0050	<0.0050	<0.0050	0.0050	8275404
Toluene	mg/kg	0.028	0.027	8275395	<0.020	<0.020	<0.020	0.020	8275404
Ethylbenzene	mg/kg	<0.010	<0.010	8275395	<0.010	<0.010	<0.010	0.010	8275404
Xylenes (Total)	mg/kg	<0.040	<0.040	8275395	<0.040	<0.040	<0.040	0.040	8275404
m & p-Xylene	mg/kg	<0.040	<0.040	8275395	<0.040	<0.040	<0.040	0.040	8275404
o-Xylene	mg/kg	<0.020	<0.020	8275395	<0.020	<0.020	<0.020	0.020	8275404
F1 (C6-C10) - BTEX	mg/kg	<12	<12	8275395	<12	<12	<12	12	8275404
F1 (C6-C10)	mg/kg	<12	<12	8275395	<12	<12	<12	12	8275404
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	95	102	8275395	100	101	100	N/A	8275404
4-Bromofluorobenzene (sur.)	%	102	98	8275395	98	99	98	N/A	8275404
D10-ETHYLBENZENE (sur.)	%	116	108	8275395	110	106	104	N/A	8275404
D4-1,2-Dichloroethane (sur.)	%	130	100	8275395	102	99	99	N/A	8275404
O-TERPHENYL (sur.)	%	121	137 (1)	8275464	92	90	99	N/A	8275114
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.									

Maxxam Job #: B638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		OQ6757	OQ6758		
Sampling Date		2016/05/17 11:30	2016/05/17 11:35		
COC Number		A153553	A153553		
	UNITS	JU6	JU8	RDL	QC Batch
Physical Properties					
Moisture	%	14	22	0.30	8274405
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/kg	30	<10	10	8275464
F3 (C16-C34 Hydrocarbons)	mg/kg	6700	57	50	8275464
F4 (C34-C50 Hydrocarbons)	mg/kg	200	<50	50	8275464
Reached Baseline at C50	mg/kg	N/A	Yes	N/A	8275464
Volatiles					
Benzene	mg/kg	<0.0050	<0.0050	0.0050	8275395
Toluene	mg/kg	<0.020	0.029	0.020	8275395
Ethylbenzene	mg/kg	<0.010	<0.010	0.010	8275395
Xylenes (Total)	mg/kg	<0.040	<0.040	0.040	8275395
m & p-Xylene	mg/kg	<0.040	<0.040	0.040	8275395
o-Xylene	mg/kg	<0.020	<0.020	0.020	8275395
F1 (C6-C10) - BTEX	mg/kg	<12	<12	12	8275395
F1 (C6-C10)	mg/kg	<12	<12	12	8275395
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	105	103	N/A	8275395
4-Bromofluorobenzene (sur.)	%	99	101	N/A	8275395
D10-ETHYLBENZENE (sur.)	%	119	116	N/A	8275395
D4-1,2-Dichloroethane (sur.)	%	98	99	N/A	8275395
O-TERPHENYL (sur.)	%	N/A	128	N/A	8275464
RDL = Reportable Detection Limit					
N/A = Not Applicable					

Maxxam Job #: B638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		OQ6753		
Sampling Date		2016/05/17 10:15		
COC Number		A153553		
	UNITS	JU1	RDL	QC Batch
Physical Properties				
Sieve - Pan	%	66	0.20	8278222
Sieve - #200 (>0.075mm)	%	34	0.20	8278222
Grain Size	%	FINE	0.20	8278222
RDL = Reportable Detection Limit				

Maxxam Job #: B638377
Report Date: 2016/06/02

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GLYCOLS BY GC-FID (SOIL)

Maxxam ID		OQ6754		
Sampling Date		2016/05/17 10:20		
COC Number		A153553		
	UNITS	JU2	RDL	QC Batch
Glycols				
Extractable (Water) Ethylene Glycol	mg/kg	<10	10	8274421
Extractable (Water) Diethylene Glycol	mg/kg	<10	10	8274421
Extractable (Water) Triethylene Glycol	mg/kg	<10	10	8274421
Extractable (Water) Tetraethylene Glycol	mg/kg	<10	10	8274421
Extractable (Water) Propylene Glycol	mg/kg	<10	10	8274421
Surrogate Recovery (%)				
Extractable (Water) Methyl Sulfone (sur.)	%	92	N/A	8274421
RDL = Reportable Detection Limit				
N/A = Not Applicable				

SLR CONSULTING (CANADA) LTD
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PETROLEUM HYDROCARBONS (CCME) - OCBO

Maxxam ID		OQ6757		
Sampling Date		2016/05/17 11:30		
COC Number		A153553		
	UNITS	JU6	RDL	QC Batch
Ext. Pet. Hydrocarbon				
Silica Gel F3 (C16-C34 Hydrocarbons)	mg/kg	3600	50	8277965
Surrogate Recovery (%)				
Silica Gel O-TERPHENYL (sur.)	%	107	N/A	8277965
RDL = Reportable Detection Limit				
N/A = Not Applicable				

Maxxam Job #: B638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
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Sampler Initials: JU

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		OQ6754		
Sampling Date		2016/05/17 10:20		
COC Number		A153553		
	UNITS	JU2	RDL	QC Batch
Elements				
Total Lead (Pb)	mg/kg	9.4	0.50	8275004
RDL = Reportable Detection Limit				

SLR CONSULTING (CANADA) LTD
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VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		OQ6754		
Sampling Date		2016/05/17 10:20		
COC Number		A153553		
	UNITS	JU2	RDL	QC Batch
Volatiles				
Bromodichloromethane	mg/kg	<0.030	0.030	8273886
Bromoform	mg/kg	<0.050	0.050	8273886
Bromomethane	mg/kg	<0.020	0.020	8273886
Carbon tetrachloride	mg/kg	<0.00050	0.00050	8274230
Chlorobenzene	mg/kg	<0.0010	0.0010	8274230
Chlorodibromomethane	mg/kg	<0.020	0.020	8273886
Chloroethane	mg/kg	<0.020	0.020	8273886
Chloroform	mg/kg	<0.00080	0.00080	8274230
Chloromethane	mg/kg	<0.030	0.030	8273886
1,2-dibromoethane	mg/kg	<0.0020	0.0020	8274230
1,2-dichlorobenzene	mg/kg	<0.020	0.020	8273886
1,3-dichlorobenzene	mg/kg	<0.020	0.020	8273886
1,4-dichlorobenzene	mg/kg	<0.020	0.020	8273886
1,1-dichloroethane	mg/kg	<0.020	0.020	8273886
1,2-dichloroethane	mg/kg	<0.0020	0.0020	8274230
1,1-dichloroethene	mg/kg	<0.020	0.020	8273886
cis-1,2-dichloroethene	mg/kg	<0.020	0.020	8273886
trans-1,2-dichloroethene	mg/kg	<0.020	0.020	8273886
Dichloromethane	mg/kg	<0.043 (1)	0.043	8273886
1,2-dichloropropane	mg/kg	<0.020	0.020	8273886
cis-1,3-dichloropropene	mg/kg	<0.020	0.020	8273886
trans-1,3-dichloropropene	mg/kg	<0.020	0.020	8273886
Methyl methacrylate	mg/kg	<0.040	0.040	8273886
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	0.030	8273886
Styrene	mg/kg	<0.020	0.020	8273886
1,1,1,2-tetrachloroethane	mg/kg	<0.10	0.10	8273886
1,1,2,2-tetrachloroethane	mg/kg	<0.050	0.050	8273886
Tetrachloroethene	mg/kg	<0.010	0.010	8273886
1,2,3-trichlorobenzene	mg/kg	<0.040	0.040	8273886
1,2,4-trichlorobenzene	mg/kg	<0.040	0.040	8273886
RDL = Reportable Detection Limit				
(1) Detection limit raised due to interferent.				

Maxxam Job #: B638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		OQ6754		
Sampling Date		2016/05/17 10:20		
COC Number		A153553		
	UNITS	JU2	RDL	QC Batch
1,3,5-trichlorobenzene	mg/kg	<0.040	0.040	8273886
1,1,1-trichloroethane	mg/kg	<0.020	0.020	8273886
1,1,2-trichloroethane	mg/kg	<0.020	0.020	8273886
Trichloroethene	mg/kg	<0.010	0.010	8273886
Trichlorofluoromethane	mg/kg	<0.020	0.020	8273886
1,2,4-trimethylbenzene	mg/kg	<0.50	0.50	8273886
1,3,5-trimethylbenzene	mg/kg	<0.50	0.50	8273886
Vinyl chloride	mg/kg	<0.00030	0.00030	8274230
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	100	N/A	8273886
4-Bromofluorobenzene (sur.)	%	97	N/A	8273886
D10-ETHYLBENZENE (sur.)	%	98	N/A	8273886
D4-1,2-Dichloroethane (sur.)	%	103	N/A	8273886
1,4-Difluorobenzene (sur.)	%	99	N/A	8274230
4-Bromofluorobenzene (sur.)	%	108	N/A	8274230
D10-ETHYLBENZENE (sur.)	%	100	N/A	8274230
D4-1,2-Dichloroethane (sur.)	%	98	N/A	8274230
RDL = Reportable Detection Limit				
N/A = Not Applicable				

Maxxam Job #: B638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
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Your P.O. #: EDM2970
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GENERAL COMMENTS

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

Package 1	5.0°C
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As per client request, additional analysis has been completed. 1 x F3 via Column Clean-up. The client request was received 2016/05/27.

Results relate only to the items tested.

Maxxam Job #: B638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

QUALITY ASSURANCE REPORT

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8273886	MZ	Matrix Spike		1,4-Difluorobenzene (sur.)	2016/05/20		100	%	60 - 140
				4-Bromofluorobenzene (sur.)	2016/05/20		105	%	60 - 140
				D10-ETHYLBENZENE (sur.)	2016/05/20		106	%	60 - 130
				D4-1,2-Dichloroethane (sur.)	2016/05/20		105	%	60 - 140
				Bromodichloromethane	2016/05/20		109	%	60 - 140
				Bromoform	2016/05/20		112	%	60 - 140
				Bromomethane	2016/05/20		90	%	60 - 140
				Chlorodibromomethane	2016/05/20		112	%	60 - 140
				Chloroethane	2016/05/20		105	%	60 - 140
				Chloromethane	2016/05/20		83	%	60 - 140
				1,2-dichlorobenzene	2016/05/20		120	%	60 - 140
				1,3-dichlorobenzene	2016/05/20		112	%	60 - 140
				1,4-dichlorobenzene	2016/05/20		113	%	60 - 140
				1,1-dichloroethane	2016/05/20		102	%	60 - 140
				1,1-dichloroethene	2016/05/20		99	%	60 - 140
				cis-1,2-dichloroethene	2016/05/20		105	%	60 - 140
				trans-1,2-dichloroethene	2016/05/20		102	%	60 - 140
				Dichloromethane	2016/05/20		98	%	60 - 140
				1,2-dichloropropane	2016/05/20		105	%	60 - 140
				cis-1,3-dichloropropene	2016/05/20		83	%	60 - 140
				trans-1,3-dichloropropene	2016/05/20		77	%	60 - 140
				Methyl methacrylate	2016/05/20		115	%	60 - 140
				Methyl-tert-butylether (MTBE)	2016/05/20		105	%	60 - 140
				Styrene	2016/05/20		115	%	60 - 140
				1,1,1,2-tetrachloroethane	2016/05/20		114	%	60 - 140
				1,1,1,2-tetrachloroethane	2016/05/20		108	%	60 - 140
				Tetrachloroethene	2016/05/20		111	%	60 - 140
				1,2,3-trichlorobenzene	2016/05/20		119	%	60 - 140
				1,2,4-trichlorobenzene	2016/05/20		114	%	60 - 140
				1,3,5-trichlorobenzene	2016/05/20		110	%	60 - 140
				1,1,1-trichloroethane	2016/05/20		110	%	60 - 140
				1,1,2-trichloroethane	2016/05/20		116	%	60 - 140
				Trichloroethene	2016/05/20		113	%	60 - 140
				Trichlorofluoromethane	2016/05/20		98	%	60 - 140
				1,2,4-trimethylbenzene	2016/05/20		119	%	60 - 140
				1,3,5-trimethylbenzene	2016/05/20		121	%	60 - 140
8273886	MZ	Spiked Blank		1,4-Difluorobenzene (sur.)	2016/05/20		100	%	60 - 140
				4-Bromofluorobenzene (sur.)	2016/05/20		108	%	60 - 140
				D10-ETHYLBENZENE (sur.)	2016/05/20		110	%	60 - 130
				D4-1,2-Dichloroethane (sur.)	2016/05/20		105	%	60 - 140
				Bromodichloromethane	2016/05/20		110	%	60 - 140
				Bromoform	2016/05/20		113	%	60 - 140
				Bromomethane	2016/05/20		94	%	60 - 140
				Chlorodibromomethane	2016/05/20		114	%	60 - 140
				Chloroethane	2016/05/20		109	%	60 - 140
				Chloromethane	2016/05/20		89	%	60 - 140
				1,2-dichlorobenzene	2016/05/20		126	%	60 - 140
				1,3-dichlorobenzene	2016/05/20		99	%	60 - 140
				1,4-dichlorobenzene	2016/05/20		120	%	60 - 140
				1,1-dichloroethane	2016/05/20		104	%	60 - 140
				1,1-dichloroethene	2016/05/20		101	%	60 - 140

Maxxam Job #: B638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
				cis-1,2-dichloroethene	2016/05/20		108	%	60 - 140
				trans-1,2-dichloroethene	2016/05/20		104	%	60 - 140
				Dichloromethane	2016/05/20		102	%	60 - 140
				1,2-dichloropropane	2016/05/20		108	%	60 - 140
				cis-1,3-dichloropropene	2016/05/20		83	%	60 - 140
				trans-1,3-dichloropropene	2016/05/20		79	%	60 - 140
				Methyl methacrylate	2016/05/20		114	%	60 - 140
				Methyl-tert-butylether (MTBE)	2016/05/20		107	%	60 - 140
				Styrene	2016/05/20		116	%	60 - 140
				1,1,1,2-tetrachloroethane	2016/05/20		118	%	60 - 140
				1,1,2,2-tetrachloroethane	2016/05/20		107	%	60 - 140
				Tetrachloroethene	2016/05/20		115	%	60 - 140
				1,2,3-trichlorobenzene	2016/05/20		117	%	60 - 140
				1,2,4-trichlorobenzene	2016/05/20		118	%	60 - 140
				1,3,5-trichlorobenzene	2016/05/20		113	%	60 - 140
				1,1,1-trichloroethane	2016/05/20		111	%	60 - 140
				1,1,2-trichloroethane	2016/05/20		116	%	60 - 140
				Trichloroethene	2016/05/20		114	%	60 - 140
				Trichlorofluoromethane	2016/05/20		100	%	60 - 140
				1,2,4-trimethylbenzene	2016/05/20		124	%	60 - 140
				1,3,5-trimethylbenzene	2016/05/20		128	%	60 - 140
8273886	MZ		Method Blank	1,4-Difluorobenzene (sur.)	2016/05/20		100	%	60 - 140
				4-Bromofluorobenzene (sur.)	2016/05/20		97	%	60 - 140
				D10-ETHYLBENZENE (sur.)	2016/05/20		106	%	60 - 130
				D4-1,2-Dichloroethane (sur.)	2016/05/20		99	%	60 - 140
				Bromodichloromethane	2016/05/20	<0.030		mg/kg	
				Bromoform	2016/05/20	<0.050		mg/kg	
				Bromomethane	2016/05/20	<0.020		mg/kg	
				Chlorodibromomethane	2016/05/20	<0.020		mg/kg	
				Chloroethane	2016/05/20	<0.020		mg/kg	
				Chloromethane	2016/05/20	<0.030		mg/kg	
				1,2-dichlorobenzene	2016/05/20	<0.020		mg/kg	
				1,3-dichlorobenzene	2016/05/20	<0.020		mg/kg	
				1,4-dichlorobenzene	2016/05/20	<0.020		mg/kg	
				1,1-dichloroethane	2016/05/20	<0.020		mg/kg	
				1,1-dichloroethene	2016/05/20	<0.020		mg/kg	
				cis-1,2-dichloroethene	2016/05/20	<0.020		mg/kg	
				trans-1,2-dichloroethene	2016/05/20	<0.020		mg/kg	
				Dichloromethane	2016/05/20	<0.046		mg/kg	
				1,2-dichloropropane	2016/05/20	<0.020		mg/kg	
				cis-1,3-dichloropropene	2016/05/20	<0.020		mg/kg	
				trans-1,3-dichloropropene	2016/05/20	<0.020		mg/kg	
				Methyl methacrylate	2016/05/20	<0.040		mg/kg	
				Methyl-tert-butylether (MTBE)	2016/05/20	<0.030		mg/kg	
				Styrene	2016/05/20	<0.020		mg/kg	
				1,1,1,2-tetrachloroethane	2016/05/20	<0.10		mg/kg	
				1,1,2,2-tetrachloroethane	2016/05/20	<0.050		mg/kg	
				Tetrachloroethene	2016/05/20	<0.010		mg/kg	
				1,2,3-trichlorobenzene	2016/05/20	0.044, RDL=0.040		mg/kg	
				1,2,4-trichlorobenzene	2016/05/20	<0.040		mg/kg	

Maxxam Job #: 8638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
				1,3,5-trichlorobenzene	2016/05/20	<0.040		mg/kg	
				1,1,1-trichloroethane	2016/05/20	<0.020		mg/kg	
				1,1,2-trichloroethane	2016/05/20	<0.020		mg/kg	
				Trichloroethene	2016/05/20	<0.010		mg/kg	
				Trichlorofluoromethane	2016/05/20	<0.020		mg/kg	
				1,2,4-trimethylbenzene	2016/05/20	<0.50		mg/kg	
				1,3,5-trimethylbenzene	2016/05/20	<0.50		mg/kg	
8273886	MZ	RPD		1,1-dichloroethene	2016/05/20	NC		%	50
				Tetrachloroethene	2016/05/20	NC		%	50
				Trichloroethene	2016/05/20	NC		%	50
8274127	HP5	Method Blank		Moisture	2016/05/20	<0.30		%	
8274127	HP5	RPD		Moisture	2016/05/20	0		%	20
8274230	GP4	Matrix Spike		1,4-Difluorobenzene (sur.)	2016/05/19		99	%	60 - 140
				4-Bromofluorobenzene (sur.)	2016/05/19		109	%	60 - 140
				D10-ETHYLBENZENE (sur.)	2016/05/19		105	%	60 - 130
				D4-1,2-Dichloroethane (sur.)	2016/05/19		125	%	60 - 140
				Carbon tetrachloride	2016/05/19		100	%	60 - 140
				Chlorobenzene	2016/05/19		96	%	60 - 140
				Chloroform	2016/05/19		107	%	60 - 140
				1,2-dibromoethane	2016/05/19		101	%	60 - 140
				1,2-dichloroethane	2016/05/19		102	%	60 - 140
				Vinyl chloride	2016/05/19		95	%	60 - 140
8274230	GP4	Spiked Blank		1,4-Difluorobenzene (sur.)	2016/05/19		100	%	60 - 140
				4-Bromofluorobenzene (sur.)	2016/05/19		103	%	60 - 140
				D10-ETHYLBENZENE (sur.)	2016/05/19		100	%	60 - 130
				D4-1,2-Dichloroethane (sur.)	2016/05/19		128	%	60 - 140
				Carbon tetrachloride	2016/05/19		97	%	60 - 140
				Chlorobenzene	2016/05/19		92	%	60 - 140
				Chloroform	2016/05/19		102	%	60 - 140
				1,2-dibromoethane	2016/05/19		98	%	60 - 140
				1,2-dichloroethane	2016/05/19		108	%	60 - 140
				Vinyl chloride	2016/05/19		64	%	60 - 140
8274230	GP4	Method Blank		1,4-Difluorobenzene (sur.)	2016/05/19		99	%	60 - 140
				4-Bromofluorobenzene (sur.)	2016/05/19		104	%	60 - 140
				D10-ETHYLBENZENE (sur.)	2016/05/19		102	%	60 - 130
				D4-1,2-Dichloroethane (sur.)	2016/05/19		97	%	60 - 140
				Carbon tetrachloride	2016/05/19	<0.00050		mg/kg	
				Chlorobenzene	2016/05/19	<0.0010		mg/kg	
				Chloroform	2016/05/19	<0.00080		mg/kg	
				1,2-dibromoethane	2016/05/19	<0.0020		mg/kg	
				1,2-dichloroethane	2016/05/19	<0.0020		mg/kg	
				Vinyl chloride	2016/05/19	<0.00030		mg/kg	
8274230	GP4	RPD		Carbon tetrachloride	2016/05/19	NC		%	50
				Chlorobenzene	2016/05/19	NC		%	50
				Chloroform	2016/05/19	NC		%	50
				1,2-dibromoethane	2016/05/19	NC		%	50
				1,2-dichloroethane	2016/05/19	NC		%	50
				Vinyl chloride	2016/05/19	NC		%	50
8274405	HP5	Method Blank		Moisture	2016/05/20	<0.30		%	
8274405	HP5	RPD [OQ6753-01]		Moisture	2016/05/20	0		%	20
8274421	DO1	Matrix Spike		Extractable (Water) Methyl Sulfone (sur.)	2016/05/19		93	%	50 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8274421	DO1	Spiked Blank	Extractable (Water) Ethylene Glycol	2016/05/19		91	%	30 - 130
			Extractable (Water) Diethylene Glycol	2016/05/19		89	%	30 - 130
			Extractable (Water) Triethylene Glycol	2016/05/19		89	%	30 - 130
			Extractable (Water) Tetraethylene Glycol	2016/05/19		85	%	30 - 130
			Extractable (Water) Propylene Glycol	2016/05/19		91	%	30 - 130
			Extractable (Water) Methyl Sulfone (sur.)	2016/05/19		92	%	50 - 130
			Extractable (Water) Ethylene Glycol	2016/05/19		93	%	30 - 130
			Extractable (Water) Diethylene Glycol	2016/05/19		93	%	30 - 130
			Extractable (Water) Triethylene Glycol	2016/05/19		98	%	30 - 130
			Extractable (Water) Tetraethylene Glycol	2016/05/19		103	%	30 - 130
8274421	DO1	Method Blank	Extractable (Water) Propylene Glycol	2016/05/19		93	%	30 - 130
			Extractable (Water) Methyl Sulfone (sur.)	2016/05/19		89	%	50 - 130
			Extractable (Water) Ethylene Glycol	2016/05/19	<10		mg/kg	
			Extractable (Water) Diethylene Glycol	2016/05/19	<10		mg/kg	
			Extractable (Water) Triethylene Glycol	2016/05/19	<10		mg/kg	
			Extractable (Water) Tetraethylene Glycol	2016/05/19	<10		mg/kg	
			Extractable (Water) Propylene Glycol	2016/05/19	<10		mg/kg	
			Extractable (Water) Ethylene Glycol	2016/05/20	NC		%	50
			Extractable (Water) Diethylene Glycol	2016/05/20	NC		%	50
			Extractable (Water) Triethylene Glycol	2016/05/20	NC		%	50
8275004	APY	RPD	Extractable (Water) Tetraethylene Glycol	2016/05/20	NC		%	50
			Extractable (Water) Propylene Glycol	2016/05/20	NC		%	50
			Total Lead (Pb)	2016/05/20		87	%	75 - 125
			Total Lead (Pb)	2016/05/20		101	%	79 - 121
			Total Lead (Pb)	2016/05/20		96	%	75 - 125
			Total Lead (Pb)	2016/05/20	<0.50		mg/kg	
			Total Lead (Pb)	2016/05/20	0.52		%	35
			O-TERPHENYL (sur.)	2016/05/20		93	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/05/20		95	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2016/05/20		96	%	50 - 130
8275114	JR1	Spiked Blank	F4 (C34-C50 Hydrocarbons)	2016/05/20		94	%	50 - 130
			O-TERPHENYL (sur.)	2016/05/20		104	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/05/20		106	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2016/05/20		107	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2016/05/20		106	%	70 - 130
			O-TERPHENYL (sur.)	2016/05/20		105	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/05/20	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2016/05/20	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2016/05/20	<50		mg/kg	
			F2 (C10-C16 Hydrocarbons)	2016/05/20	NC		%	50
8275114	JR1	Method Blank	F3 (C16-C34 Hydrocarbons)	2016/05/20	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2016/05/20	NC		%	50
			1,4-Difluorobenzene (sur.)	2016/05/24		100	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/05/24		100	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/05/24		108	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/05/24		101	%	60 - 140
			Benzene	2016/05/24		110	%	60 - 140
			Toluene	2016/05/24		103	%	60 - 140
			Ethylbenzene	2016/05/24		107	%	60 - 140
			m & p-Xylene	2016/05/24		109	%	60 - 140

Maxxam Job #: B638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8275395	SES	Spiked Blank	o-Xylene	2016/05/24		108	%	60 - 140
			F1 (C6-C10)	2016/05/24		73	%	60 - 140
			1,4-Difluorobenzene (sur.)	2016/05/21		102	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/05/21		99	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/05/21		112	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/05/21		99	%	60 - 140
			Benzene	2016/05/21		96	%	60 - 140
			Toluene	2016/05/21		90	%	60 - 140
			Ethylbenzene	2016/05/21		99	%	60 - 140
			m & p-Xylene	2016/05/21		99	%	60 - 140
			o-Xylene	2016/05/21		100	%	60 - 140
8275395	SES	Method Blank	F1 (C6-C10)	2016/05/21		85	%	60 - 140
			1,4-Difluorobenzene (sur.)	2016/05/21		100	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/05/21		100	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/05/21		110	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/05/21		108	%	60 - 140
			Benzene	2016/05/21	<0.0050		mg/kg	
			Toluene	2016/05/21	0.026, RDL=0.020		mg/kg	
			Ethylbenzene	2016/05/21	<0.010		mg/kg	
			Xylenes (Total)	2016/05/21	<0.040		mg/kg	
			m & p-Xylene	2016/05/21	<0.040		mg/kg	
			o-Xylene	2016/05/21	<0.020		mg/kg	
8275395	SES	RPD [OQ6753-01]	F1 (C6-C10) - BTEX	2016/05/21	<12		mg/kg	
			F1 (C6-C10)	2016/05/21	<12		mg/kg	
			Benzene	2016/05/21	NC		%	50
			Toluene	2016/05/21	NC		%	50
			Ethylbenzene	2016/05/21	NC		%	50
			Xylenes (Total)	2016/05/21	NC		%	50
			m & p-Xylene	2016/05/21	NC		%	50
			o-Xylene	2016/05/21	NC		%	50
			F1 (C6-C10) - BTEX	2016/05/21	NC		%	50
			F1 (C6-C10)	2016/05/21	NC		%	50
8275404	SES	Matrix Spike	1,4-Difluorobenzene (sur.)	2016/05/20		100	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/05/20		99	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/05/20		101	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/05/20		101	%	60 - 140
			Benzene	2016/05/20		92	%	60 - 140
			Toluene	2016/05/20		89	%	60 - 140
			Ethylbenzene	2016/05/20		93	%	60 - 140
			m & p-Xylene	2016/05/20		94	%	60 - 140
			o-Xylene	2016/05/20		94	%	60 - 140
			F1 (C6-C10)	2016/05/20		96	%	60 - 140
8275404	SES	Spiked Blank	1,4-Difluorobenzene (sur.)	2016/05/20		101	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/05/20		99	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/05/20		99	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/05/20		98	%	60 - 140
			Benzene	2016/05/20		90	%	60 - 140
			Toluene	2016/05/20		87	%	60 - 140
			Ethylbenzene	2016/05/20		91	%	60 - 140
			m & p-Xylene	2016/05/20		93	%	60 - 140

Maxxam Job #: B638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8275404	SES	Method Blank	o-Xylene	2016/05/20		93	%	60 - 140
			F1 (C6-C10)	2016/05/20		92	%	60 - 140
			1,4-Difluorobenzene (sur.)	2016/05/20		102	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/05/20		100	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/05/20		100	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/05/20		99	%	60 - 140
			Benzene	2016/05/20	<0.0050		mg/kg	
			Toluene	2016/05/20	<0.020		mg/kg	
			Ethylbenzene	2016/05/20	<0.010		mg/kg	
			Xylenes (Total)	2016/05/20	<0.040		mg/kg	
8275404	SES	RPD	m & p-Xylene	2016/05/20	<0.040		mg/kg	
			o-Xylene	2016/05/20	<0.020		mg/kg	
			F1 (C6-C10) - BTEX	2016/05/20	<12		mg/kg	
			F1 (C6-C10)	2016/05/20	<12		mg/kg	
			Benzene	2016/05/21	NC		%	50
			Toluene	2016/05/21	NC		%	50
			Ethylbenzene	2016/05/21	NC		%	50
			Xylenes (Total)	2016/05/21	NC		%	50
			m & p-Xylene	2016/05/21	NC		%	50
			o-Xylene	2016/05/21	NC		%	50
8275464	SHM	Matrix Spike [OQ6753-01]	F1 (C6-C10) - BTEX	2016/05/21	NC		%	50
			F1 (C6-C10)	2016/05/21	NC		%	50
			O-TERPHENYL (sur.)	2016/05/26		110	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/05/26		119	%	50 - 130
8275464	SHM	Spiked Blank	F3 (C16-C34 Hydrocarbons)	2016/05/26		NC	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2016/05/26		104	%	50 - 130
			O-TERPHENYL (sur.)	2016/05/24		123	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/05/24		124	%	70 - 130
8275464	SHM	Method Blank	F3 (C16-C34 Hydrocarbons)	2016/05/24		121	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2016/05/24		121	%	70 - 130
			O-TERPHENYL (sur.)	2016/05/26		112	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/05/26	<10		mg/kg	
8275464	SHM	RPD [OQ6753-01]	F3 (C16-C34 Hydrocarbons)	2016/05/26	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2016/05/26	<50		mg/kg	
			F2 (C10-C16 Hydrocarbons)	2016/05/26	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2016/05/26	5.5		%	50
8277965	SHM	Matrix Spike	F4 (C34-C50 Hydrocarbons)	2016/05/26	NC		%	50
			Silica Gel O-TERPHENYL (sur.)	2016/06/01		109	%	50 - 130
			Silica Gel F3 (C16-C34 Hydrocarbons)	2016/06/01		113	%	50 - 130
8277965	SHM	Spiked Blank	Silica Gel O-TERPHENYL (sur.)	2016/05/31		113	%	50 - 130
			Silica Gel F3 (C16-C34 Hydrocarbons)	2016/05/31		109	%	70 - 130
			Silica Gel O-TERPHENYL (sur.)	2016/05/31		134 (1)		50 - 130
8277965	SHM	Method Blank	Silica Gel F3 (C16-C34 Hydrocarbons)	2016/05/31	<50		mg/kg	
			Silica Gel F3 (C16-C34 Hydrocarbons)	2016/05/31	NC		%	50
8278222	JB9	QC Standard	Sieve - Pan	2016/05/25		100	%	91 - 109
			Sieve - #200 (>0.075mm)	2016/05/25		100	%	87 - 113
8278222	JB9	RPD	Sieve - Pan	2016/05/25	2.4		%	35

Maxxam Job #: B638377
Report Date: 2016/06/02

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Sieve - #200 (>0.075mm)	2016/05/25	3.6		%	35
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement. Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference. QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy. Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy. Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination. Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency. NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration). NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL). (1) Surrogate recovery exceeds acceptance criteria (high recovery). As results are non-detect, there is no impact on data quality.								

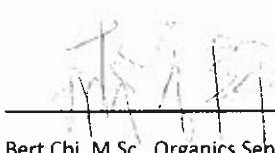
SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Location: WABASCA, AB
Your P.O. #: EDM2970
Sampler Initials: JU

VALIDATION SIGNATURE PAGE

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



Anna Koksharova, M.Sc., Organics Senior Analyst



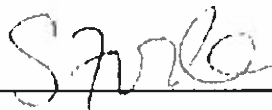
Bert Chi, M.Sc., Organics Senior Analyst



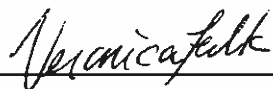
Dennis Ngundu, B.Sc., P.Chem., QP, Supervisor, Organics



Poonam Sharma, cCT, Organics Senior Analyst



Suwan Fock, B.Sc., QP, Inorganics Senior Analyst



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

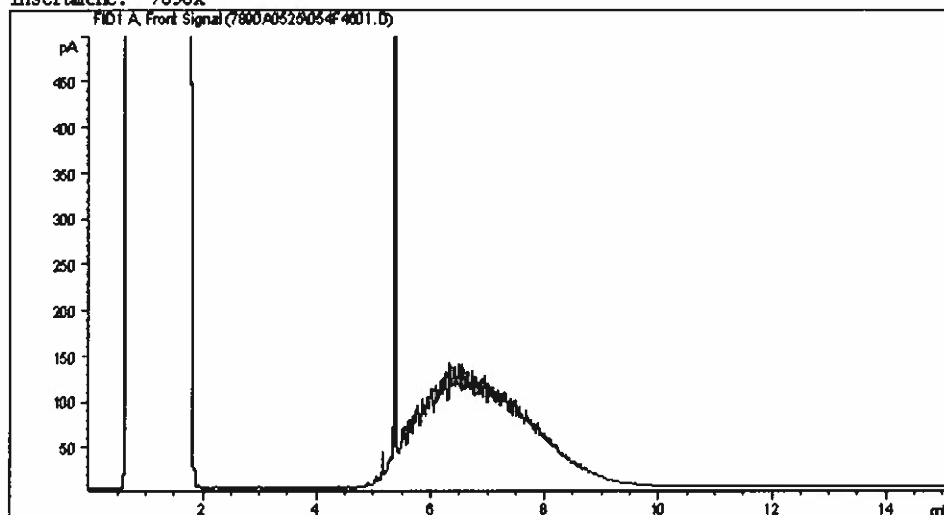
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Maxxam Job #: B638377
 Report Date: 2016/06/02
 Maxxam Sample: OQ6753

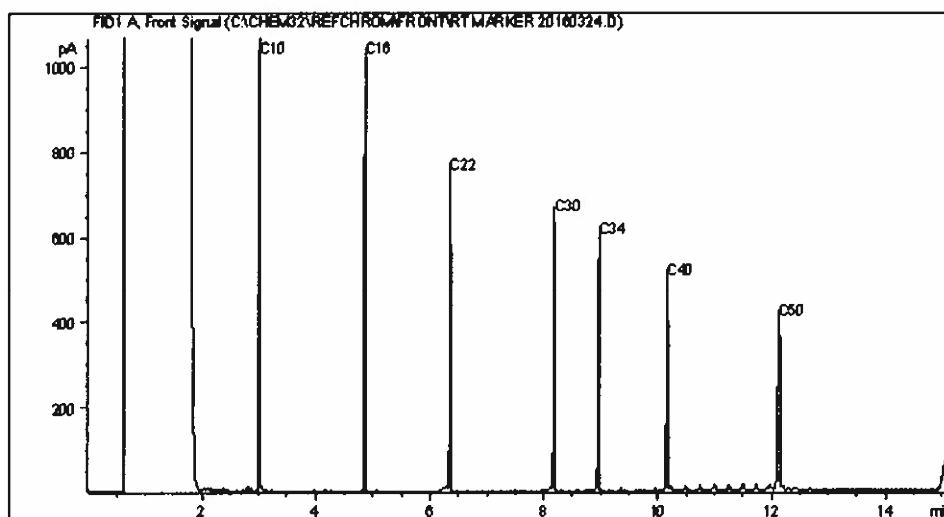
SLR CONSULTING (CANADA) LTD
 Client Project #: 212.06581.00000.002
 Site Reference: WABASCA, AB
 Client ID: JU1

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: 7890A



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

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

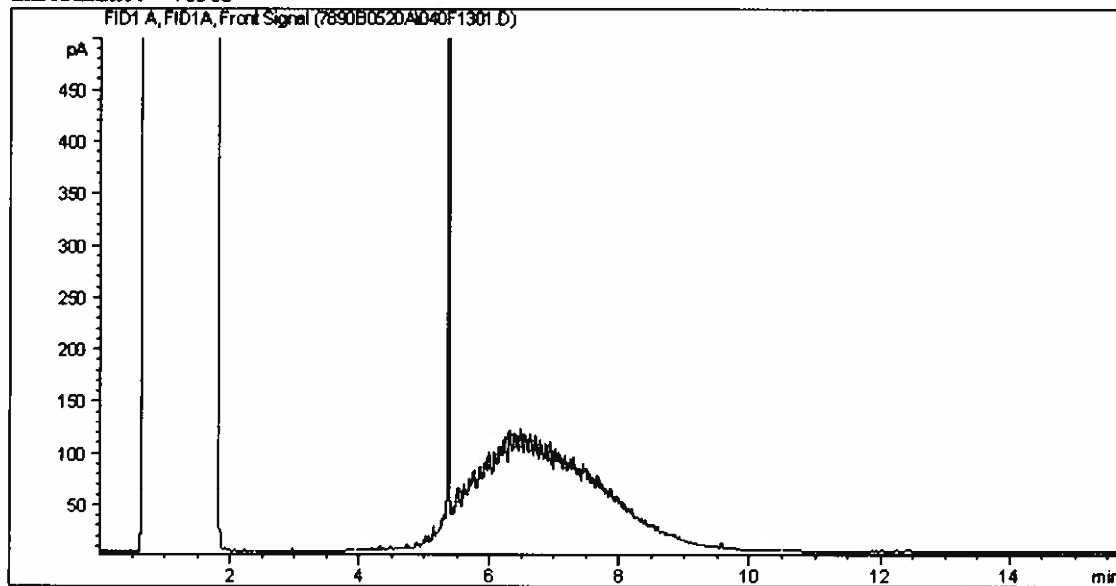
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Maxxam Job #: B638377
Report Date: 2016/06/02
Maxxam Sample: OQ6754

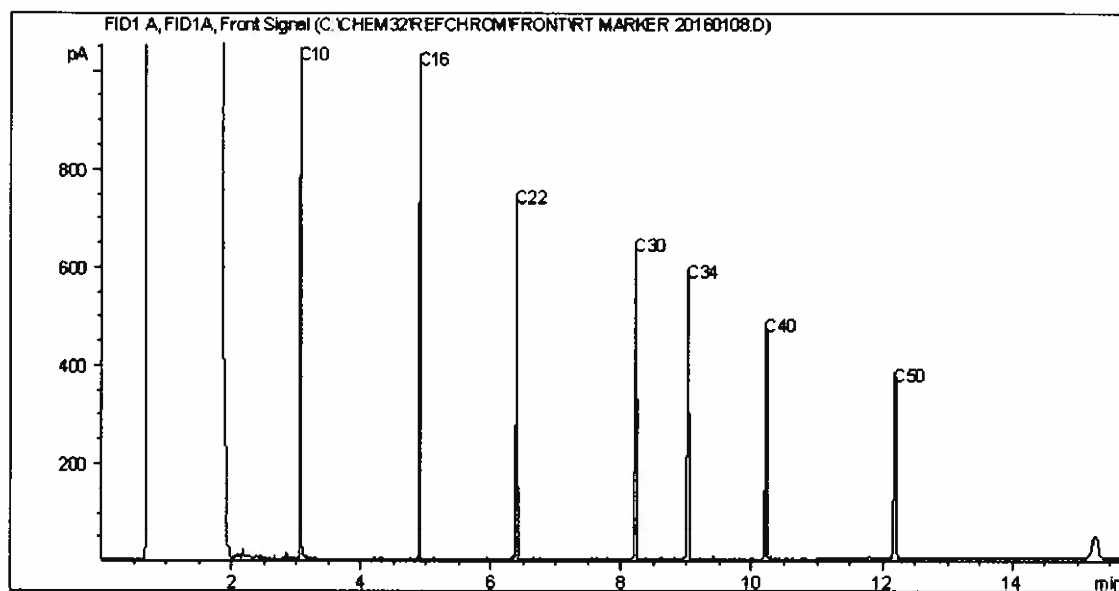
SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Reference: WABASCA, AB
Client ID: JU2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

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

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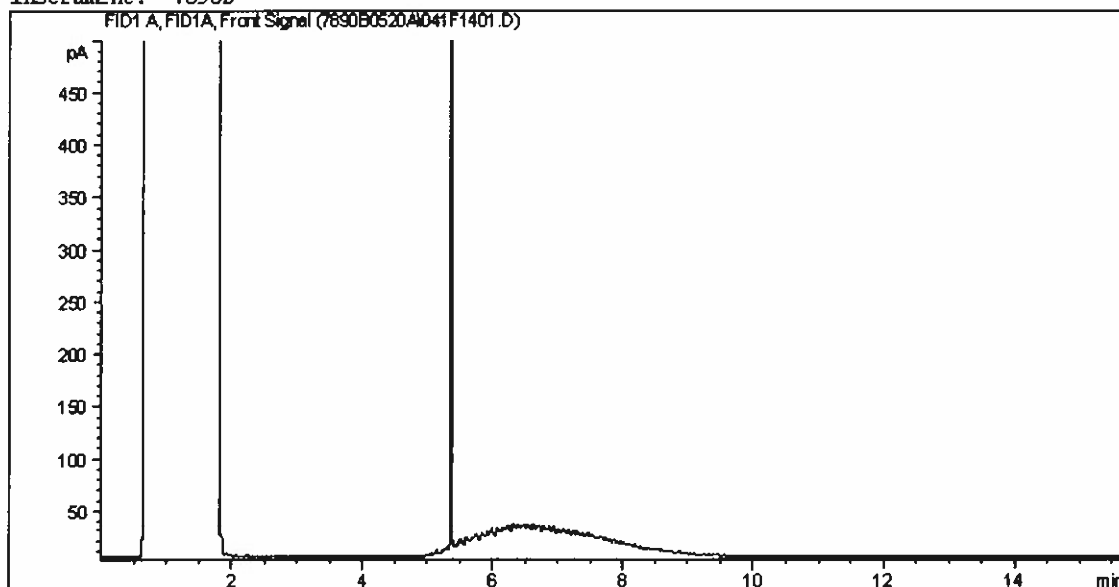
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B638377
Report Date: 2016/06/02
Maxxam Sample: OQ6755

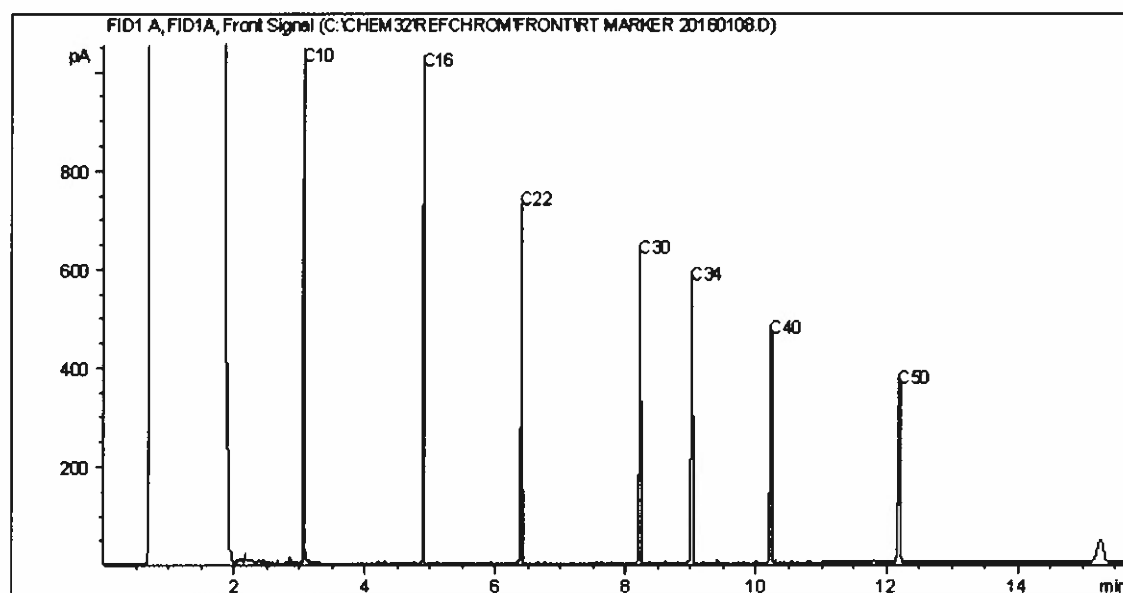
SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Reference: WABASCA, AB
Client ID: JU4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

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

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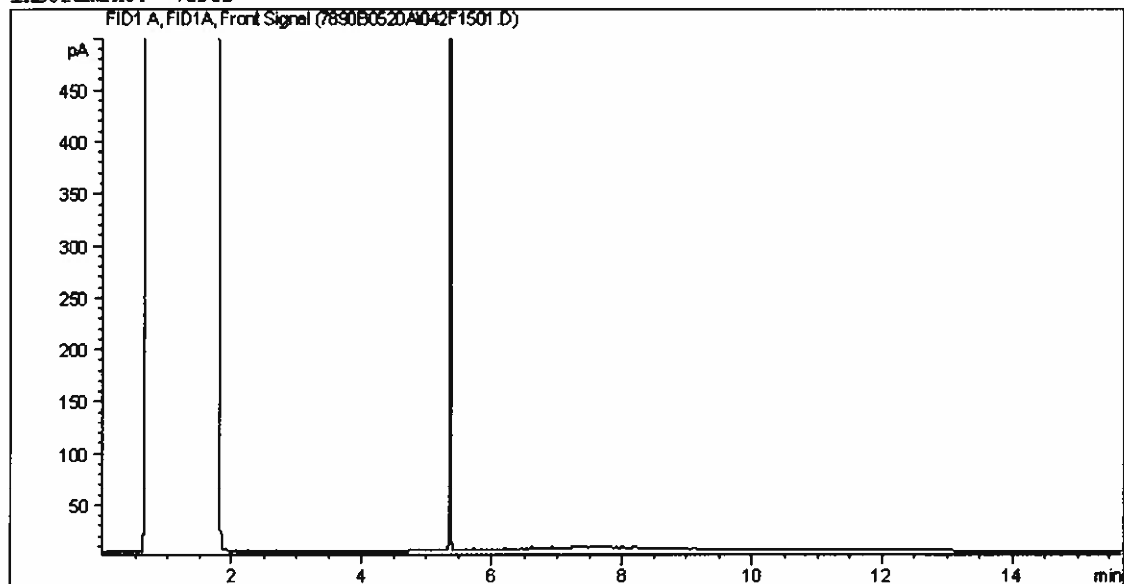
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B638377
 Report Date: 2016/06/02
 Maxxam Sample: OQ6756

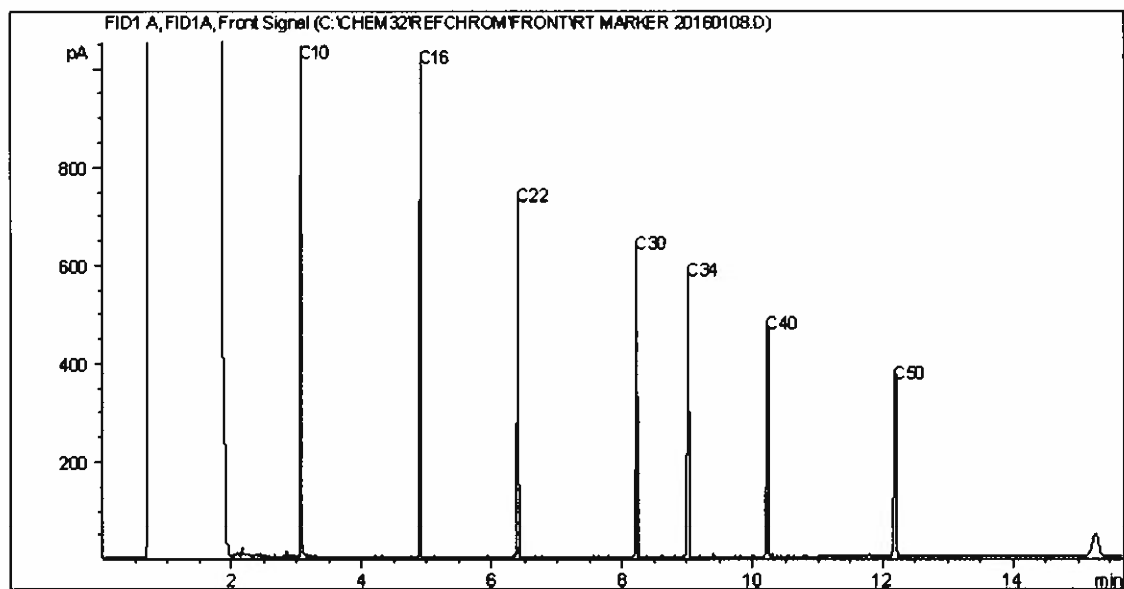
SLR CONSULTING (CANADA) LTD
 Client Project #: 212.06581.00000.002
 Site Reference: WABASCA, AB
 Client ID: JU5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

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

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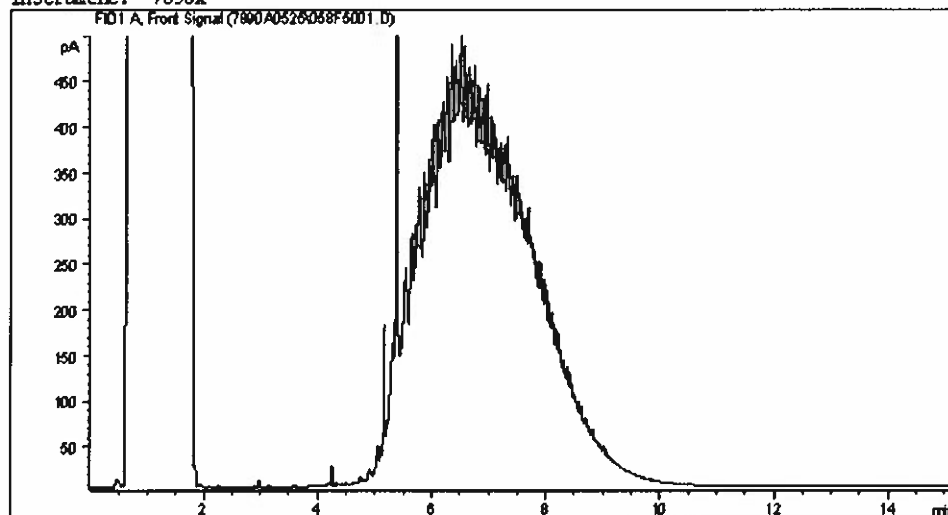
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B638377
Report Date: 2016/06/02
Maxxam Sample: OQ6757

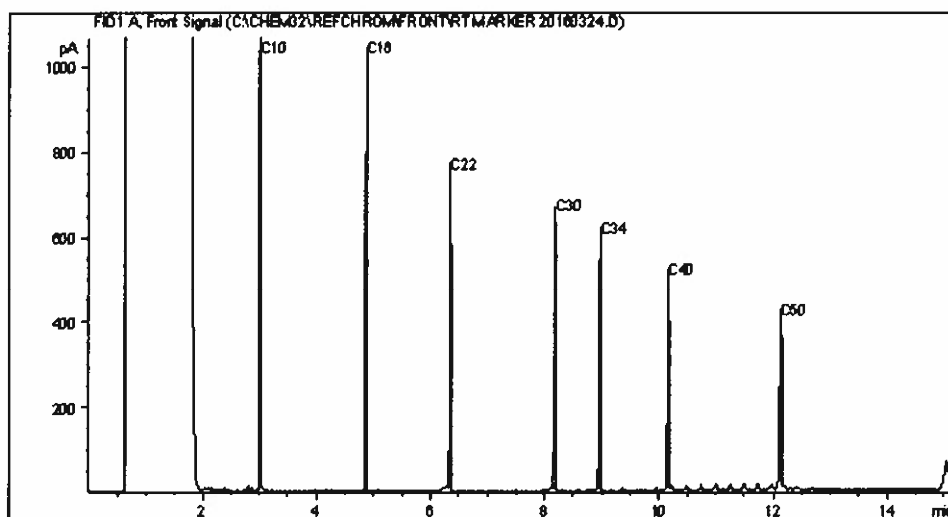
SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00000.002
Site Reference: WABASCA, AB
Client ID: JU6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: 7890A



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

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

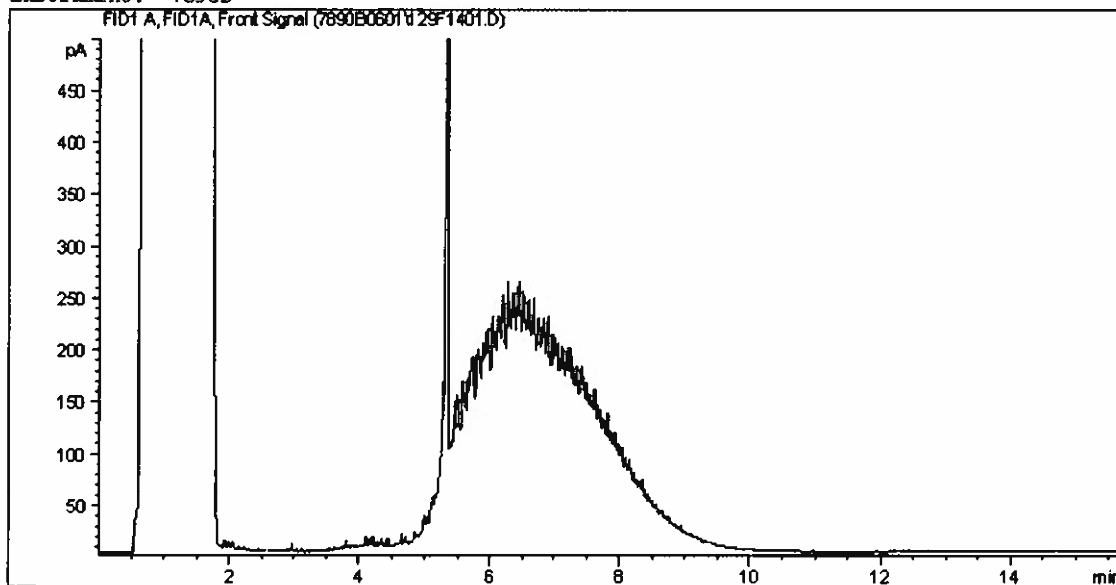
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B638377
Report Date: 2016/06/02
Maxxam Sample: OQ6757

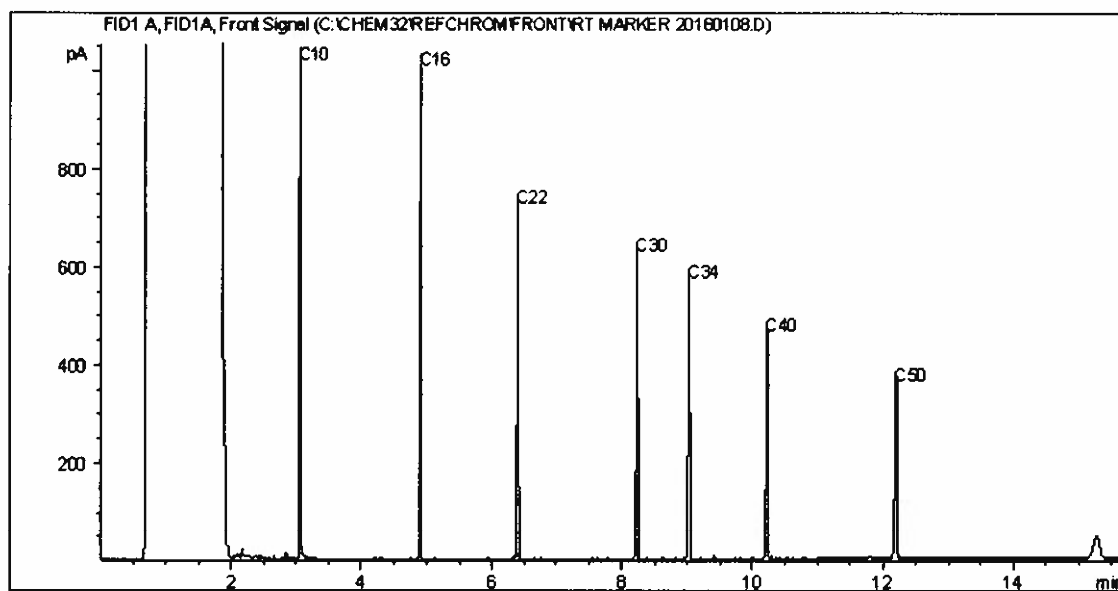
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Client Project #: 212.06581.00000.002
Site Reference: WABASCA, AB
Client ID: JU6

CCME (F2-F4 in soil) - OCBO Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

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

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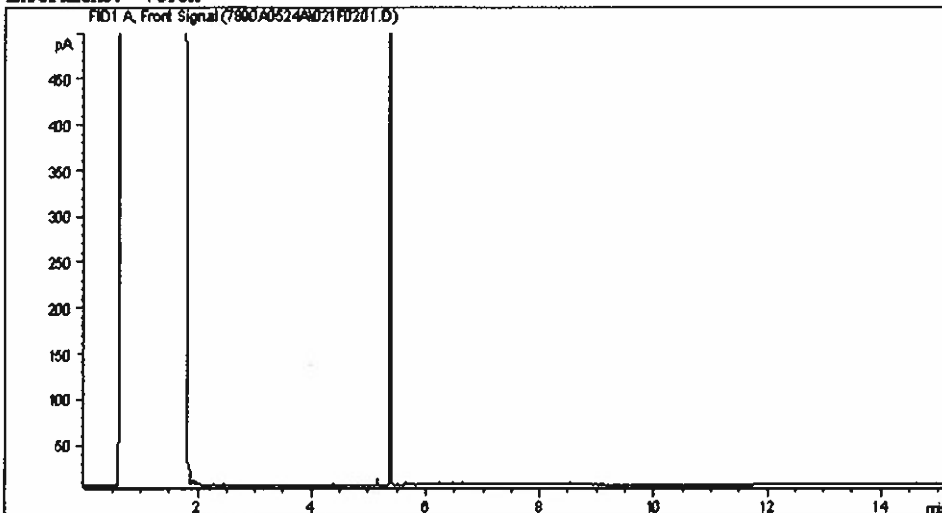
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B638377
 Report Date: 2016/06/02
 Maxxam Sample: OQ6758

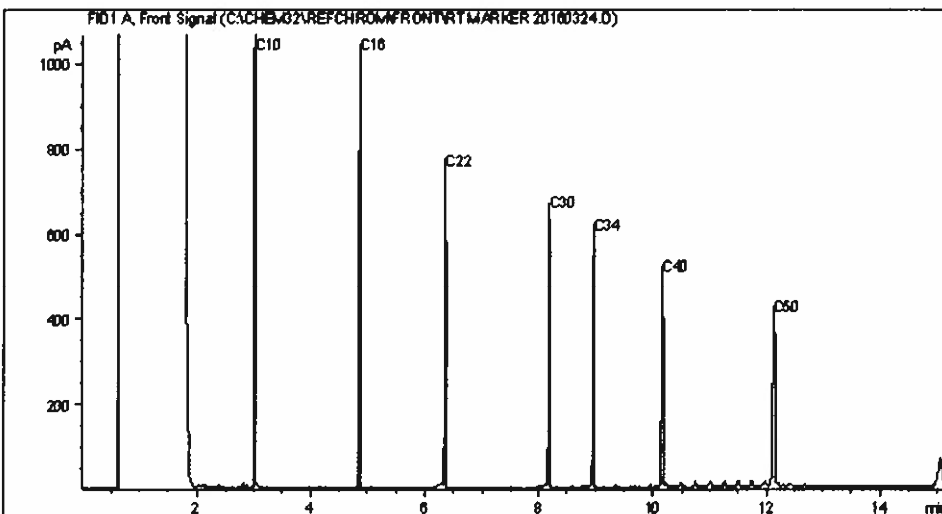
SLR CONSULTING (CANADA) LTD
 Client Project #: 212.06581.00000.002
 Site Reference: WABASCA, AB
 Client ID: JU8

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: 7890A



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C6 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

Your P.O. #: EDM3068
Your Project #: 212.06581.00001
Site Location: WABASCA, AB
Your C.O.C. #: A129159

Attention: IAN YOUNG

SLR CONSULTING (CANADA) LTD
6940 ROPER ROAD
EDMONTON, AB
CANADA T6B 3H9

Report Date: 2016/07/10
Report #: R2212706
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B653400

Received: 2016/06/30, 15:57

Sample Matrix: Soil
Samples Received: 5

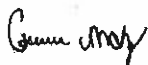
Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS/FID (MeOH extract)	5	2016/07/01	2016/07/08	AB SOP-00039	CCME CWS/EPA 8260c m
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2016/07/01	2016/07/07	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1)	3	2016/07/01	2016/07/08	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2016/07/01	2016/07/09	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS m
Moisture	5	N/A	2016/07/02	AB SOP-00002	CCME PHC-CWS m

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

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

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

Encryption Key



Carmen McKay
Project Manager
11 Jul 2016 11:39:48 -06:00

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

Carmen McKay, Project Manager

Email: CMcKay@maxxam.ca

Phone# (403)219-3683

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

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		OY4698	OY4699	OY4700		OY4701		OY4702		
Sampling Date		2016/06/29 10:30	2016/06/29 11:00	2016/06/29 16:30		2016/06/29 13:00		2016/06/29 14:00		
COC Number		A129159	A129159	A129159		A129159		A129159		
	UNITS	JU11	JU15	JU34	QC Batch	JU23	QC Batch	JU29	RDL	QC Batch

Physical Properties										
Moisture	%	17	14	15	8317025	22	8317025	23	0.30	8317025
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	31	8314185	<10	8318693	<10	10	8314185
F3 (C16-C34 Hydrocarbons)	mg/kg	680	120	81	8314185	1900	8318693	<50	50	8314185
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	63	8314185	63	8318693	<50	50	8314185
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	8314185	Yes	8318693	Yes	N/A	8314185
Volatiles										
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	8322730	<0.0050	8320925	<0.0050	0.0050	8322730
Toluene	mg/kg	<0.020	<0.020	<0.020	8322730	<0.020	8320925	<0.020	0.020	8322730
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	8322730	<0.010	8320925	<0.010	0.010	8322730
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	8322730	<0.040	8320925	<0.040	0.040	8322730
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	8322730	<0.040	8320925	<0.040	0.040	8322730
o-Xylene	mg/kg	<0.020	<0.020	<0.020	8322730	<0.020	8320925	<0.020	0.020	8322730
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	8322730	<12	8320925	<12	12	8322730
F1 (C6-C10)	mg/kg	<12	<12	<12	8322730	<12	8320925	<12	12	8322730
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	102	100	100	8322730	100	8320925	102	N/A	8322730
4-Bromofluorobenzene (sur.)	%	97	95	95	8322730	95	8320925	96	N/A	8322730
D10-ETHYLBENZENE (sur.)	%	108	106	106	8322730	108	8320925	121	N/A	8322730
D4-1,2-Dichloroethane (sur.)	%	88	90	90	8322730	89	8320925	91	N/A	8322730
O-TERPHENYL (sur.)	%	100	103	101	8314185	103	8318693	105	N/A	8314185
RDL = Reportable Detection Limit										
N/A = Not Applicable										

Maxxam Job #: B653400
Report Date: 2016/07/10

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00001
Site Location: WABASCA, AB
Your P.O. #: EDM3068
Sampler Initials: JU

GENERAL COMMENTS

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

Package 1	5.7°C
-----------	-------

Results relate only to the items tested.

Maxxam Job #: B653400
Report Date: 2016/07/10

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00001
Site Location: WABASCA, AB
Your P.O. #: EDM3068
Sampler Initials: JU

QUALITY ASSURANCE REPORT

QA/QC		QC Type	Parameter	Date	Value	Recovery	UNITS	QC Limits
Batch	Init			Analyzed				
8314185	SHM	Matrix Spike	O-TERPHENYL (sur.)	2016/06/30		106	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/06/30		NC	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2016/06/30		NC	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2016/06/30		NC	%	50 - 130
8314185	SHM	Spiked Blank	O-TERPHENYL (sur.)	2016/06/30		105	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/06/30		113	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2016/06/30		113	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2016/06/30		108	%	70 - 130
8314185	SHM	Method Blank	O-TERPHENYL (sur.)	2016/06/30		118	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/06/30	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2016/06/30	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2016/06/30	<50		mg/kg	
8314185	SHM	RPD	F2 (C10-C16 Hydrocarbons)	2016/06/30	23		%	50
			F3 (C16-C34 Hydrocarbons)	2016/06/30	22		%	50
			F4 (C34-C50 Hydrocarbons)	2016/06/30	21		%	50
8317025	HP5	Method Blank	Moisture	2016/07/02	<0.30		%	
8317025	HP5	RPD	Moisture	2016/07/02	2.6		%	20
8318693	AK8	Matrix Spike	O-TERPHENYL (sur.)	2016/07/07		104	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/07/07		117	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2016/07/07		120	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2016/07/07		117	%	50 - 130
8318693	AK8	Spiked Blank	O-TERPHENYL (sur.)	2016/07/07		90	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/07/07		107	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2016/07/07		109	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2016/07/07		106	%	70 - 130
8318693	AK8	Method Blank	O-TERPHENYL (sur.)	2016/07/07		86	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2016/07/07	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2016/07/07	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2016/07/07	<50		mg/kg	
8318693	AK8	RPD	F2 (C10-C16 Hydrocarbons)	2016/07/07	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2016/07/07	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2016/07/07	NC		%	50
8320925	SB8	Matrix Spike	1,4-Difluorobenzene (sur.)	2016/07/06		100	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/07/06		99	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/07/06		112	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/07/06		93	%	60 - 140
			Benzene	2016/07/06		105	%	60 - 140
			Toluene	2016/07/06		101	%	60 - 140
			Ethylbenzene	2016/07/06		108	%	60 - 140
			m & p-Xylene	2016/07/06		108	%	60 - 140
			o-Xylene	2016/07/06		107	%	60 - 140
			F1 (C6-C10)	2016/07/06		97	%	60 - 140
			1,4-Difluorobenzene (sur.)	2016/07/06		106	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/07/06		98	%	60 - 140
8320925	SB8	Spiked Blank	D10-ETHYLBENZENE (sur.)	2016/07/06		109	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/07/06		99	%	60 - 140
			Benzene	2016/07/06		108	%	60 - 140
			Toluene	2016/07/06		101	%	60 - 140
			Ethylbenzene	2016/07/06		106	%	60 - 140
			m & p-Xylene	2016/07/06		102	%	60 - 140
			o-Xylene	2016/07/06		104	%	60 - 140

Maxxam Job #: B653400
Report Date: 2016/07/10

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00001
Site Location: WABASCA, AB
Your P.O. #: EDM3068
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC		QC Type	Parameter	Date	Value	Recovery	UNITS	QC Limits
Batch	Init			Analyzed				
8320925	SB8	Method Blank	F1 (C6-C10)	2016/07/06		116	%	60 - 140
			1,4-Difluorobenzene (sur.)	2016/07/06		100	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/07/06		97	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/07/06		109	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/07/06		96	%	60 - 140
			Benzene	2016/07/06	<0.0050		mg/kg	
			Toluene	2016/07/06	<0.020		mg/kg	
			Ethylbenzene	2016/07/06	<0.010		mg/kg	
			Xylenes (Total)	2016/07/06	<0.040		mg/kg	
			m & p-Xylene	2016/07/06	<0.040		mg/kg	
			o-Xylene	2016/07/06	<0.020		mg/kg	
			F1 (C6-C10) - BTEX	2016/07/06	<12		mg/kg	
			F1 (C6-C10)	2016/07/06	<12		mg/kg	
8320925	SB8	RPD	Benzene	2016/07/06	22		%	50
			Toluene	2016/07/06	NC		%	50
			Ethylbenzene	2016/07/06	4.7		%	50
			Xylenes (Total)	2016/07/06	10		%	50
			m & p-Xylene	2016/07/06	8.0		%	50
			o-Xylene	2016/07/06	17		%	50
			F1 (C6-C10) - BTEX	2016/07/06	NC		%	50
			F1 (C6-C10)	2016/07/06	NC		%	50
8322730	SES	Matrix Spike	1,4-Difluorobenzene (sur.)	2016/07/07		100	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/07/07		97	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/07/07		108	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/07/07		90	%	60 - 140
			Benzene	2016/07/07		107	%	60 - 140
			Toluene	2016/07/07		104	%	60 - 140
			Ethylbenzene	2016/07/07		106	%	60 - 140
			m & p-Xylene	2016/07/07		108	%	60 - 140
			o-Xylene	2016/07/07		107	%	60 - 140
			F1 (C6-C10)	2016/07/07		115	%	60 - 140
8322730	SES	Spiked Blank	1,4-Difluorobenzene (sur.)	2016/07/07		101	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/07/07		97	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/07/07		103	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/07/07		91	%	60 - 140
			Benzene	2016/07/07		104	%	60 - 140
			Toluene	2016/07/07		102	%	60 - 140
			Ethylbenzene	2016/07/07		105	%	60 - 140
			m & p-Xylene	2016/07/07		106	%	60 - 140
			o-Xylene	2016/07/07		105	%	60 - 140
			F1 (C6-C10)	2016/07/07		108	%	60 - 140
8322730	SES	Method Blank	1,4-Difluorobenzene (sur.)	2016/07/07		98	%	60 - 140
			4-Bromofluorobenzene (sur.)	2016/07/07		97	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2016/07/07		123	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2016/07/07		94	%	60 - 140
			Benzene	2016/07/07	<0.0050		mg/kg	
			Toluene	2016/07/07	<0.020		mg/kg	
			Ethylbenzene	2016/07/07	<0.010		mg/kg	
			Xylenes (Total)	2016/07/07	<0.040		mg/kg	
			m & p-Xylene	2016/07/07	<0.040		mg/kg	
			o-Xylene	2016/07/07	<0.020		mg/kg	

Maxxam Job #: B653400
Report Date: 2016/07/10

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00001
Site Location: WABASCA, AB
Your P.O. #: EDM3068
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8322730	SES	RPD	F1 (C6-C10) - BTEX	2016/07/07	<12		mg/kg	
			F1 (C6-C10)	2016/07/07	<12		mg/kg	
			Benzene	2016/07/07	NC		%	50
			Toluene	2016/07/07	NC		%	50
			Ethylbenzene	2016/07/07	NC		%	50
			Xylenes (Total)	2016/07/07	NC		%	50
			m & p-Xylene	2016/07/07	NC		%	50
			o-Xylene	2016/07/07	NC		%	50
			F1 (C6-C10) - BTEX	2016/07/07	NC		%	50
			F1 (C6-C10)	2016/07/07	NC		%	50

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

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

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

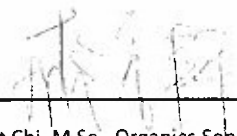
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

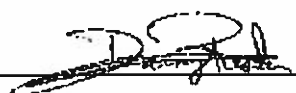
Maxxam Job #: B653400
Report Date: 2016/07/10

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00001
Site Location: WABASCA, AB
Your P.O. #: EDM3068
Sampler Initials: JU

VALIDATION SIGNATURE PAGE

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



Bert Chi, M.Sc., Organics Senior Analyst

Daniel Reslan, cCT, QP, Organics Supervisor

Poonam Sharma, cCT, Organics Senior Analyst

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Your P.O. #: EDM3069
Your Project #: 212.06581.00001
Site Location: WABASCA, AB
Your C.O.C. #: A153555

Attention: IAN YOUNG

SLR CONSULTING (CANADA) LTD
6940 ROPER ROAD
EDMONTON, AB
CANADA T6B 3H9

Report Date: 2016/07/08
Report #: R2212417
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B653401

Received: 2016/06/30, 15:57

Sample Matrix: Soil
Samples Received: 1

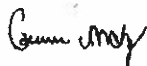
Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS/FID (MeOH extract)	1	2016/07/01	2016/07/08	AB SOP-00039	CCME CWS/EPA 8260c m
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2016/07/01	2016/07/07	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS m
Moisture	1	N/A	2016/07/04	AB SOP-00002	CCME PHC-CWS m

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

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

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

Encryption Key



Carmen McKay
Project Manager
08 Jul 2016 15:52:32 -06:00

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

Carmen McKay, Project Manager

Email: CMcKay@maxxam.ca

Phone# (403)219-3683

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SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00001
Site Location: WABASCA, AB
Your P.O. #: EDM3069
Sampler Initials: JU

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		OY4703	OY4703		
Sampling Date		2016/06/29 09:30	2016/06/29 09:30		
COC Number		A153555	A153555		
	UNITS	JU9	JU9 Lab-Dup	RDL	QC Batch
Physical Properties					
Moisture	%	23	24	0.30	8317318
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	N/A	10	8318693
F3 (C16-C34 Hydrocarbons)	mg/kg	300	N/A	50	8318693
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	N/A	50	8318693
Reached Baseline at C50	mg/kg	Yes	N/A	N/A	8318693
Volatiles					
Benzene	mg/kg	<0.0050	N/A	0.0050	8320925
Toluene	mg/kg	<0.020	N/A	0.020	8320925
Ethylbenzene	mg/kg	<0.010	N/A	0.010	8320925
Xylenes (Total)	mg/kg	<0.040	N/A	0.040	8320925
m & p-Xylene	mg/kg	<0.040	N/A	0.040	8320925
o-Xylene	mg/kg	<0.020	N/A	0.020	8320925
F1 (C6-C10) - BTEX	mg/kg	<12	N/A	12	8320925
F1 (C6-C10)	mg/kg	<12	N/A	12	8320925
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	100	N/A	N/A	8320925
4-Bromofluorobenzene (sur.)	%	96	N/A	N/A	8320925
D10-ETHYLBENZENE (sur.)	%	106	N/A	N/A	8320925
D4-1,2-Dichloroethane (sur.)	%	90	N/A	N/A	8320925
O-TERPHENYL (sur.)	%	100	N/A	N/A	8318693
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable					

Maxxam Job #: B653401
Report Date: 2016/07/08

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00001
Site Location: WABASCA, AB
Your P.O. #: EDM3069
Sampler Initials: JU

GENERAL COMMENTS

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

Package 1	5.7°C
-----------	-------

Results relate only to the items tested.

Maxxam Job #: B653401
Report Date: 2016/07/08

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00001
Site Location: WABASCA, AB
Your P.O. #: EDM3069
Sampler Initials: JU

QUALITY ASSURANCE REPORT

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8317318	HP5		Method Blank	Moisture	2016/07/04	<0.30		%	
8317318	HP5		RPD [OY4703-01]	Moisture	2016/07/04	3.0		%	20
8318693	AK8		Matrix Spike	O-TERPHENYL (sur.)	2016/07/07		104	%	50 - 130
				F2 (C10-C16 Hydrocarbons)	2016/07/07		117	%	50 - 130
				F3 (C16-C34 Hydrocarbons)	2016/07/07		120	%	50 - 130
				F4 (C34-C50 Hydrocarbons)	2016/07/07		117	%	50 - 130
8318693	AK8		Spiked Blank	O-TERPHENYL (sur.)	2016/07/07		90	%	50 - 130
				F2 (C10-C16 Hydrocarbons)	2016/07/07		107	%	70 - 130
				F3 (C16-C34 Hydrocarbons)	2016/07/07		109	%	70 - 130
				F4 (C34-C50 Hydrocarbons)	2016/07/07		106	%	70 - 130
8318693	AK8		Method Blank	O-TERPHENYL (sur.)	2016/07/07		86	%	50 - 130
				F2 (C10-C16 Hydrocarbons)	2016/07/07	<10		mg/kg	
				F3 (C16-C34 Hydrocarbons)	2016/07/07	<50		mg/kg	
				F4 (C34-C50 Hydrocarbons)	2016/07/07	<50		mg/kg	
8318693	AK8		RPD	F2 (C10-C16 Hydrocarbons)	2016/07/07	NC		%	50
				F3 (C16-C34 Hydrocarbons)	2016/07/07	NC		%	50
				F4 (C34-C50 Hydrocarbons)	2016/07/07	NC		%	50
8320925	SB8		Matrix Spike	1,4-Difluorobenzene (sur.)	2016/07/06		100	%	60 - 140
				4-Bromofluorobenzene (sur.)	2016/07/06		99	%	60 - 140
				D10-ETHYLBENZENE (sur.)	2016/07/06		112	%	60 - 130
				D4-1,2-Dichloroethane (sur.)	2016/07/06		93	%	60 - 140
				Benzene	2016/07/06		105	%	60 - 140
				Toluene	2016/07/06		101	%	60 - 140
				Ethylbenzene	2016/07/06		108	%	60 - 140
				m & p-Xylene	2016/07/06		108	%	60 - 140
				o-Xylene	2016/07/06		107	%	60 - 140
				F1 (C6-C10)	2016/07/06		97	%	60 - 140
8320925	SB8		Spiked Blank	1,4-Difluorobenzene (sur.)	2016/07/06		106	%	60 - 140
				4-Bromofluorobenzene (sur.)	2016/07/06		98	%	60 - 140
				D10-ETHYLBENZENE (sur.)	2016/07/06		109	%	60 - 130
				D4-1,2-Dichloroethane (sur.)	2016/07/06		99	%	60 - 140
				Benzene	2016/07/06		108	%	60 - 140
				Toluene	2016/07/06		101	%	60 - 140
				Ethylbenzene	2016/07/06		106	%	60 - 140
				m & p-Xylene	2016/07/06		102	%	60 - 140
				o-Xylene	2016/07/06		104	%	60 - 140
				F1 (C6-C10)	2016/07/06		116	%	60 - 140
8320925	SB8		Method Blank	1,4-Difluorobenzene (sur.)	2016/07/06		100	%	60 - 140
				4-Bromofluorobenzene (sur.)	2016/07/06		97	%	60 - 140
				D10-ETHYLBENZENE (sur.)	2016/07/06		109	%	60 - 130
				D4-1,2-Dichloroethane (sur.)	2016/07/06		96	%	60 - 140
				Benzene	2016/07/06	<0.0050		mg/kg	
				Toluene	2016/07/06	<0.020		mg/kg	
				Ethylbenzene	2016/07/06	<0.010		mg/kg	
				Xylenes (Total)	2016/07/06	<0.040		mg/kg	
				m & p-Xylene	2016/07/06	<0.040		mg/kg	
				o-Xylene	2016/07/06	<0.020		mg/kg	
				F1 (C6-C10) - BTEX	2016/07/06	<12		mg/kg	
				F1 (C6-C10)	2016/07/06	<12		mg/kg	
8320925	SB8		RPD	Benzene	2016/07/06	22		%	50
				Toluene	2016/07/06	NC		%	50

Maxxam Job #: B653401
Report Date: 2016/07/08

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00001
Site Location: WABASCA, AB
Your P.O. #: EDM3069
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC		QC Type	Parameter	Date	Value	Recovery	UNITS	QC Limits
Batch	Init			Analyzed				
			Ethylbenzene	2016/07/06	4.7		%	50
			Xylenes (Total)	2016/07/06	10		%	50
			m & p-Xylene	2016/07/06	8.0		%	50
			o-Xylene	2016/07/06	17		%	50
			F1 (C6-C10) - BTEX	2016/07/06	NC		%	50
			F1 (C6-C10)	2016/07/06	NC		%	50
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement. Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference. Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy. Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination. Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency. NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).								

Maxxam Job #: B653401
Report Date: 2016/07/08

SLR CONSULTING (CANADA) LTD
Client Project #: 212.06581.00001
Site Location: WABASCA, AB
Your P.O. #: EDM3069
Sampler Initials: JU

VALIDATION SIGNATURE PAGE

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



Daniel Reslan, cCT, QP, Organics Supervisor

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

Chain of Custody

Page 1 of 1

Company:	Involve To:		C/O Report address	☐
Contact:	1000 Years		MR Consulting (Canada) Ltd	
Address:	6540 Report Road		Edmonton	
Contact #s:	Phone: AB		780-440-1443	
	Fax: AB		780-580-8474	
	Price:			
	Qty:			
	Report:			

Report To:	Same as Invoice
Print:	Print
Per:	Unit

Report Distribution (E-Mail):
skirsh@slrcnsulting.com
ingeneering@slrcnsulting.com
t.skirsh@slrcnsulting.com

REGULATORY GUIDELINES:

☒ ~~ATI~~

☐ CCME

☐ Regulated Drinking Water

☐ Other:

and the fact that the system is not a simple one, it is not possible to give a simple answer. The system is a complex one, and the answer is not simple.

PO #: EDM3059
Project # / Name: 212-06561-00001
Site Location: Watasca, AB
Quote # _____
Sampled By: Kevin Uy

SERVICE REQUESTED:	☐ RUSH (Contact lab to reserve) Date Required: _____ ☒ REGULAR (5 to 7 days)
---------------------------	---

PO #: <u>EDM3019</u> Project # / Name: <u>212-06581-00001</u> Site Location: <u>Wabasca AB</u> Quote # _____ Sampled By: <u>Jeanette</u>				SERVICE REQUESTED: ☐ RUSH (Contact lab to reserve) ☒ REGULAR (5 to 7 Days)				Date Required: _____ Date/time Sampled: <u>YYMMDD 24:00</u> <u>Sr. 11/06/2019 9:30</u>			
Sample ID		Depth (unit)	Matrix GW / SW Soil								
	<u>Tug</u>	<u>N/A</u>	<u>Soil</u>	<u>11/06/2019 9:30</u>							
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

SOIL		WATER				Other Analysis					
BTEX F1-F4	X	COTEX F1	COTEX F1-F2	COTEX F1-F4	Routine Water	Turb	P	Total	Dissolved	Mercury	HOLD - Do not Analyze
Sieve (75 micron)											# of Containers Submitted
Regulated Metals (CCME / AT1)											
Salinity A											
Assessment ICP Metals											
Basic Class II Landfill											

Site / revised lot package specifiers

Please indicate Filtered, Preserved or Both (F, P, F/P)

Relinquished By (Signature/Print) <i>M. Vieira</i>	Date (YYMMDD) 16/06/30	Time (24:00) 1415
Relinquished By (Signature/Print)	Date (YYMMDD)	Time (24:00)
Special Instructions:		# of Jars Used & Not Submitted 0

AS FCD-00331 Rev. 3 20:0075

Maxxam Analytics International Corporation o/b Maxxam Analytics

APPENDIX E
Landfill Summary

Former TCRS Wabasca
Phase I ESA & Soil Excavation Program
Plan 9821453, Block 3, Lot 3
Wabasca, AB
SLR Project No.: 212.06581.00000



LANDFILL WASTE DOCKET

No. 905553

1. PROJECT INFORMATION (please print)

Generator:	Finning Canada Company:		EUB Operator Code:	Alberta only
Address:	15901 109 Ave Street			
	Edmonton City/Town	Province	Postal Code	Phone No.
Waste Description:	100-25-03W4-15W4 LSD (if applicable)		Waste Approval Code:	MM DD YY
Generating Location:	Site #1200 Physical Address (if applicable)		Shipping Date:	Tonnes
	City/Town	Province	Postal Code	EUB Code:
	If applicable			

I hereby certify that the aforementioned waste material contains NO FREE LIQUIDS and it has been properly characterized, classified and packaged for shipping as per federal, provincial and local laws and regulatory criteria. I further certify that this waste material is an acceptable waste for the receiving facility below. I understand that it is the sole responsibility of the generator to classify their waste properly.

Certified By:	Print Name	Date	MM DD YY	Signature:
Company Name:	STP Conf Authorized Agent	Phone No:	Emergency 24 Hr. Ph. No:	

2. TRANSPORTER INFORMATION (please print)

Trucking Company:	West Gifford	Driver's Name:	(Please Print) Douglas Steward
Address:	Wabasca, AB	Driver's Signature:	[Signature]
Phone No:	709-821-1000	Truck No:	
License No:		Truck Ticket No:	168
		Date:	1/2/06

3. LANDFILL DESTINATION (to be completed by Landfill Personnel)

Receiving Facility: (please check one) ☐ Other ☒ Wabasca Landfill #20 ON # 709-821-3402

☐ Bonnyville, AB NE 09-061-03W4	☐ East Peace, AB SW 02-084-20W5	☐ Fox Creek, AB 05-06-082-18W5	☐ Janvier, AB SE 1/4 03-081-06W4	☐ Judy Creek, AB W1/2 19-63-10W5M	☐ La Glace, AB NE 15-073-09W6
☐ Medicine Hat, AB 03-013-05W4	☐ Milsue, AB 04-29-072-04W5	☐ Newell, AB 01-34-019-15W4	☐ Pincher Creek, AB NW 08-07-01W5	☐ Rainbow Lake, AB 16-32-110-05W6	☐ Rocky Mtn. House, AB 01-12-040-09W5
☐ Spirit River, AB SW 31-077-05W6	☐ Tower Road, AB NW 27-053-13W5	☐ Wabasca, AB SE 1/4 24-082-23W4	☐ Northern Rockies, BC Mile 285 Alaska Hwy	☐ Silverberry, BC A-18-088-20W6	☐ Virden, MB SE 24-011-26W1
☐ Gull Lake, SK 13-25-013-19W3	☐ Lomond, SK NE 27-005-15W2	☐ Marshall, SK SE 21-048-26W3	☐ South Grande Prairie E1/2-24-069-06W6	☐ Kindersley, SK NW1/4 20-030-23W3	☐ Willow Creek NW1/2 15-053-25W5

Waste Destined For: ☐ Treatment Pad ☐ Landfill Disposal ☐ ADC

Waste Discrepancy:	Yes	No	Rejected:	Yes	No	Reason Rejected:
Scale Ticket No:	1133451		Gross:	11334	Tare:	Net:
Waste Location:	Cell:	Grid:	Elevation:			

I hereby certify that to the best of my knowledge, all information in this document is correct and accurate and said material has been received in good order.

Date Received: 1/1/06 Authorized Agent: (PRINT NAME) Signature:

Copy Distribution: White (Landfill) Yellow (Head Office) Pink (Retained for Generator) Gold (Transporter) Green (Generator Retains at site)



Receipt Summary Report

Facility Group: WABASCA LANDFILL (24016)
Facility: ALL
Receipt Date: 07/01/2016
Receipt End Date: 07/01/2016
Group by: Waste Confirmation Code (WCC)
Search by: Receipt Date Range
Waste Confirmation Code: 24016-16-0048-12

Waste Confirmation: 24016-16-0048-12

Producer: FINNING (CANADA) (7734)

Receipt #	Receipt Date	Receipt Status	Location	Ticket #	Trucker	Substance	WCC	Gross Wt.	Tare Wt.	Units (tonnes)
1726522	7/1/16	VAL	ABWI-100/10-26-080 -25-W4/00	90551	WEST OILFIE	12 CONTAMINATED SOIL (REFINED FUELS / OILS) Grid Ltr: 16.00 Elev: 628.18	24016-16-0048-12	31.59	19.92	11.67
Manifest: 90551				F	Grid No:					
EDI:				AFE:			PO:			CCN:
1726745	7/1/16	VAL	ABWI-100/10-26-080 -25-W4/00	90552	WEST OILFIE	12 CONTAMINATED SOIL (REFINED FUELS / OILS) Grid Ltr: 16.00 Elev: 628.18	24016-16-0048-12	19.63	11.26	8.37
Manifest: 90552				F	Grid No:					
EDI:				AFE:			PO:			CCN:
1726864	7/1/16	VAL	ABWI-100/10-26-080 -25-W4/00	90553	WEST OILFIE	12 CONTAMINATED SOIL (REFINED FUELS / OILS) Grid Ltr: 16.00 Elev: 628.18	24016-16-0048-12	41.34	19.92	21.42
Manifest: 90553				F	Grid No:					
EDI:				AFE:			PO:			CCN:
Total Site Volume:								92.56	51.10	41.46
Total Producer Volume:								92.56	51.10	41.46
Total WCC Volume:								92.56	51.10	41.46
Total Facility Group Volume:								92.56	51.10	41.46



* Indicates receipt includes Add-On services

SLR



global environmental solutions

Calgary, AB

1185-10201 Southport Rd SW
Calgary, AB T2W 4X9
Canada
Tel: (403) 266-2030
Fax: (403) 263-7906

Edmonton, AB

6940 Roper Road
Edmonton, AB T6B 3H9
Canada
Tel: (780) 490-7893
Fax: (780) 490-7819

Grande Prairie, AB

10015 102 Street
Grande Prairie, AB T8V 2V5
Canada
Tel: (780) 513-6819
Fax: (780) 513-6821

Kamloops, BC

8 West St. Paul Street
Kamloops, BC V2C 1G1
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Fax: (250) 374-8656

Kelowna, BC

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Kelowna, BC V1Y 2A3
Canada
Tel: (250) 762-7202
Fax: (250) 763-7303

Markham, ON

200 - 300 Town Centre Blvd
Markham, ON L3R 5Z6
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Tel: (905) 415-7248
Fax: (905) 415-1019

Nanaimo, BC

9-6421 Applecross Road
Nanaimo, BC V9V 1N1
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Fax: (250) 390-5042

Prince George, BC

1586 Ogilvie Street
Prince George, BC V2N 1W9
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Fax: (250) 562-4458

Regina, SK

1048 Winnipeg Street
Regina, SK S4R 8P8
Canada
Tel: (306) 525-4690
Fax: (306) 525-4691

Saskatoon, SK

620-3530 Millar Avenue
Saskatoon, SK S7P 0B6
Canada
Tel: (306) 374-6800
Fax: (306) 374-6077

Vancouver, BC (Head Office)

200-1620 West 8th Avenue
Vancouver, BC V6J 1V4
Canada
Tel: (604) 738-2500
Fax: (604) 738-2508

Victoria, BC

6-40 Cadillac Avenue
Victoria, BC V8Z 1T2
Canada
Tel: (250) 475-9595
Fax: (250) 475-9596

Winnipeg, MB

1353 Kenaston Boulevard
Winnipeg, MB R3P 2P2
Canada
Tel: (204) 477-1848
Fax: (204) 475-1649

Whitehorse, YT

6131 6th Avenue
Whitehorse, YT Y1A 1N2
Canada
Tel: (867) 689-2021

Yellowknife, NT

Unit 44, 5022 49 Street
Yellowknife, NT X1A 3R8
Canada
Tel: (867) 765-5695

