# Lupin Mines Incorporated

(a subsidiary of Elgin Mining Inc. )

15 December 2011

Ms. Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
GJOA HAVEN NU
X0B 1J0

Dear Ms. Beaulieu

**RE: Monthly Report for November 2011**
**Lupin Mine, Nunavut, License Number 2AM-LUP0914**

Activities on site during the month of November included the preparation for and the commencement of confirmation infill core drilling (Nov 18) on the Lupin orebody, and the site maintenance activities that support drilling. We had 414 person days for the month of November, with 13 people on site as of Nov 30. Accommodation arrangements remain unchanged from October.

Domestic water use for the month was estimated to be 133,315 Litres (133 $m^3$), drawn from Contwoyto Lake. In addition, approximately 1 $m^3$ per day of water was used to support drilling. Approximately 122,330 L (122.3 $m^3$) of sewage was produced and discharged to the upper sewage lagoon. Solid waste management remains unchanged from October, with recyclables being sent off site, and remaining domestic solid waste being incinerated on site. Coarser cuttings from drilling are separated from the drill slurry using a Whipple Filter. These are encased in plastic, and stockpiled for disposal in the tailing containment area at a later date. There were no discharges to the environment.

Water samples collected in September and October whose results were not available at the time of reporting last month are summarized below in Table 1, as are results for 2 samples collected in November, from both the Upper and Lower Sewage Lakes. Analytical results are appended.

In addition, the Annual Geotechnical Report was submitted the Nunavut Water Board on November 22.

If you have any questions regarding the above, please do not hesitate to contact me.

Sincerely,
**Lupin Mines Incorporated.**

Sharleen Hamm
Manager, Environment and Community Affairs



**Lupin Mines Incorporated**
#1104-750 West Pender St.
Vancouver, BC Canada V6C 2T8
Phone: +1 (604) 682.3366 Fax: +1 (604) 682.3363

# Lupin Mines Incorporated

(a subsidiary of Elgin Mining Inc. )

Table 1. Summary of Analytical Results

| Parameter | Limits | Concentrations | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Fresh Water Supply | | Seep from Dam 2 | Upper Sewage Lake | | | Lower Sewage Lake | | | | |
| | | LUP-01-2011-10-24 | LUP-01-2011-10-26 | LUP-19-2011-09-21 | USL-2011-10-24 | USL-2011-10-26 | USL-2011-11-05 | LUP-14-2011-09-20 | LUP-14-2011-09-27 | LSL-2011-10-24 | LSL-2011-10-26 | LSL-2011-11-05 |
| Total Arsenic | 0.05 mg/L | 0.00090 | | **0.253*** | 0.00872 | | | 0.0141 | 0.00705 | 0.00508 | | |
| Total Copper | 0.20 mg/L | 0.0015 | | 0.0332 | 0.0033 | | | 0.0057 | 0.00114 | 0.0022 | | |
| Total Lead | 0.05 mg/L | 0.00028 | | 0.00472 | 0.00017 | | | <0.00050 | 0.000071 | 0.00011 | | |
| Total Nickel | 0.30 mg/L | 0.0024 | | 0.176 | 0.0165 | | | 0.115 | 0.00626 | 0.0112 | | |
| Total Zinc | 0.50 mg/L | 0.0151 | | 0.0897 | 0.0142 | | | 0.0687 | 0.0035 | 0.0088 | | |
| Total Suspended Solids | 35 mg/L | <3.0 | | 21.9 | | | | 13.2 | <3.0 | | | |
| $BOD_5$ | 30 mg/L | | | | | <2.0 | | <5.0 | <5.0 | | <2.0 | |
| Faecal Coliform | 1000 colony forming units/100ml | | <1 | | | 7 | | | 7 | | <1 | |
| Ammonia (as N) | 2.0 mg/L | | | 0.121 | 0.056 | | | 0.420 | 0.0136 | | | |
| Oil and Grease | 5.0 mg/L and no visible sheen | | | | | | <1.0 | <1.0 | <5.0 | <1.0 | | <1.0 |
| Lab pH | 6.5 to 9.5 | | | **4.90*** | | 7.00 | | 6.58 | 7.61 | | 7.00 | |
| Benzene | 0.37 mg/L | | | | <0.00050 | | <0.00050 | <0.00050 | <0.00050 | <0.00050 | | <0.00050 |
| Ethylbenzene | 0.090 mg/L | | | | <0.00050 | | <0.00050 | <0.00050 | <0.00050 | <0.00050 | | <0.00050 |
| Toluene | 0.002 mg/L | | | | <0.00050 | | <0.00050 | <0.00050 | <0.00050 | <0.00050 | | <0.00050 |

***Exceeds criteria set for LUP-10**



**Lupin Mines Incorporated**
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SRK CONSULTING (CANADA) INC.
ATTN: Arlene Laudrum
202 - 5204 50th Avenue
Yellowknife NT X1A 1E2

Date Received: 21-SEP-11
Report Date: 24-OCT-11 16:49 (MT)
Version: FINAL REV. 2

Client Phone: 867-766-6332

# Certificate of Analysis

**Lab Work Order #: L1061393**

Project P.O. #: LUPIN
Job Reference: ICE015.000
C of C Numbers: 10-101443
Legal Site Desc:

**Comments:**

24-OCT-11: Revised report.
Lead analysis added to sample #1.

Andre Langlais
Account Manager

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID | L1061393-1 | L1061393-2 | | | |
|---|---|---|---|---|---|---|
| | Description | WATER | WATER | | | |
| | Sampled Date | 20-SEP-11 | 20-SEP-11 | | | |
| | Sampled Time | 09:15 | 10:30 | | | |
| | Client ID | LUP-27-MTS-2011-09-20 | LUP-14-2011-09-20 | | | |
| Grouping | Analyte | | | | | |
| **WATER** | | | | | | |
| Physical Tests | Hardness (as CaCO3) (mg/L) | 67.7 | 153 | | | |
| | pH (pH) | 7.66 | 6.58 | | | |
| | Total Suspended Solids (mg/L) | 39.2 | 13.2 | | | |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | 13.1 | 4.7 | | | |
| | Ammonia (as N) (mg/L) | <0.0050 | 0.420 | | | |
| | Nitrate and Nitrite (as N) (mg/L) | | 0.0214 | | | |
| | Orthophosphate-Dissolved (as P) (mg/L) | | <0.0010 | | | |
| | Phosphorus (P)-Total (mg/L) | | 0.0364 | | | |
| Total Metals | Aluminum (Al)-Total (mg/L) | | 0.485 | | | |
| | Antimony (Sb)-Total (mg/L) | | <0.00050 | | | |
| | Arsenic (As)-Total (mg/L) | | 0.0141 | | | |
| | Barium (Ba)-Total (mg/L) | | 0.027 | | | |
| | Beryllium (Be)-Total (mg/L) | | <0.0010 | | | |
| | Boron (B)-Total (mg/L) | | <0.10 | | | |
| | Cadmium (Cd)-Total (mg/L) | | 0.000173 | | | |
| | Calcium (Ca)-Total (mg/L) | 23.3 | 47.2 | | | |
| | Chromium (Cr)-Total (mg/L) | | <0.0010 | | | |
| | Cobalt (Co)-Total (mg/L) | | 0.0441 | | | |
| | Copper (Cu)-Total (mg/L) | | 0.0057 | | | |
| | Iron (Fe)-Total (mg/L) | | 1.85 | | | |
| | Lead (Pb)-Total (mg/L) | 0.000643 | <0.00050 | | | |
| | Lithium (Li)-Total (mg/L) | | 0.0482 | | | |
| | Magnesium (Mg)-Total (mg/L) | 2.33 | 8.64 | | | |
| | Manganese (Mn)-Total (mg/L) | | 0.509 | | | |
| | Mercury (Hg)-Total (mg/L) | | <0.000010 | | | |
| | Molybdenum (Mo)-Total (mg/L) | | <0.0010 | | | |
| | Nickel (Ni)-Total (mg/L) | | 0.115 | | | |
| | Potassium (K)-Total (mg/L) | | 4.9 | | | |
| | Selenium (Se)-Total (mg/L) | | <0.0010 | | | |
| | Silver (Ag)-Total (mg/L) | | <0.000020 | | | |
| | Sodium (Na)-Total (mg/L) | | 27.6 | | | |
| | Thallium (Tl)-Total (mg/L) | | <0.00020 | | | |
| | Tin (Sn)-Total (mg/L) | | <0.00050 | | | |
| | Titanium (Ti)-Total (mg/L) | | <0.010 | | | |
| | Uranium (U)-Total (mg/L) | | 0.00041 | | | |
| | Vanadium (V)-Total (mg/L) | | <0.0010 | | | |
| | Zinc (Zn)-Total (mg/L) | | 0.0687 | | | |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID | L1061393-1 | L1061393-2 | | | |
|---|---|---|---|---|---|---|
| | Description | WATER | WATER | | | |
| | Sampled Date | 20-SEP-11 | 20-SEP-11 | | | |
| | Sampled Time | 09:15 | 10:30 | | | |
| | Client ID | LUP-27-MTS-2011-09-20 | LUP-14-2011-09-20 | | | |
| **Grouping** | **Analyte** | | | | | |
| **WATER** | | | | | | |
| **Aggregate Organics** | BOD (mg/L) | | <5.0 | | | |
| | Oil and Grease (mg/L) | <1.0 | <1.0 | | | |
| **Volatile Organic Compounds** | Benzene (mg/L) | <0.00050 | <0.00050 | | | |
| | Ethylbenzene (mg/L) | <0.00050 | <0.00050 | | | |
| | Methyl t-butyl ether (MTBE) (mg/L) | <0.00050 | <0.00050 | | | |
| | Toluene (mg/L) | <0.00050 | <0.00050 | | | |
| | ortho-Xylene (mg/L) | <0.00050 | <0.00050 | | | |
| | meta- & para-Xylene (mg/L) | <0.00050 | <0.00050 | | | |
| | Xylenes (mg/L) | <0.00075 | <0.00075 | | | |
| | Surrogate: 4-Bromofluorobenzene (SS) (%) | 101 | 101 | | | |
| | Surrogate: 1,4-Difluorobenzene (SS) (%) | 101 | 101 | | | |
| **Hydrocarbons** | F2 (C10-C16) (mg/L) | <0.30 | <0.30 | | | |
| | F3 (C16-C34) (mg/L) | <0.30 | <0.30 | | | |
| | F4 (C34-C50) (mg/L) | <0.30 | <0.30 | | | |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

# Reference Information

**QC Samples with Qualifiers & Comments:**

| QC Type Description | Parameter | Qualifier | Applies to Sample Number(s) |
|---|---|---|---|
| Method Blank | Calcium (Ca)-Total | MB-LOR | L1061393-1, -2 |
| Matrix Spike | Ammonia (as N) | MS-B | L1061393-1, -2 |

**Qualifiers for Individual Parameters Listed:**

| Qualifier | Description |
|---|---|
| MB-LOR | Method Blank exceeds ALS DQO. LORs adjusted for samples with positive hits below 5 times blank level. Please contact ALS if re-analysis is required. |
| MS-B | Matrix Spike recovery could not be accurately calculated due to high analyte background in sample. |

**Test Method References:**

| ALS Test Code | Matrix | Test Description | Method Reference** |
|---|---|---|---|
| **ALK-COL-VA** | Water | Alkalinity by Colourimetric (Automated) | APHA 310.2 |

This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.

| | | | |
|---|---|---|---|
| **ANIONS-N+N-CALC-VA** | Water | Nitrite & Nitrate in Water (Calculation) | EPA 300.0 |

Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

| | | | |
|---|---|---|---|
| **ANIONS-NO2-IC-VA** | Water | Nitrite in Water by Ion Chromatography | EPA 300.0 |

This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrite is detected by UV absorbance.

| | | | |
|---|---|---|---|
| **ANIONS-NO3-IC-VA** | Water | Nitrate in Water by Ion Chromatography | EPA 300.0 |

This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrate is detected by UV absorbance.

| | | | |
|---|---|---|---|
| **BOD5-VA** | Water | Biochemical Oxygen Demand- 5 day | APHA 5210 B- "BIOCHEMICAL OXYGEN DEMAND" |

This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.

| | | | |
|---|---|---|---|
| **BOD5-VA** | Water | Biochemical Oxygen Demand- 5 day | APHA 5210 B- BIOCHEMICAL OXYGEN DEMAND |

This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.

| | | | |
|---|---|---|---|
| **F2-4-SF-FID-VA** | Water | Extractable Hydrocarbons in water GCFID | CWS (CCME) |

Petroleum Hydrocarbons (F2-F4) in Water

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, published by the United States Environmental Protection Agency (EPA) and the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2000." The procedure involves a liquid-liquid extraction of the entire water sample using dichloromethane prior to capillary column gas chromatography with flame ionization detection (GC/FID).

A silica gel cleanup procedure is applied before GC analysis, which is intended to selectively remove most naturally occurring organics.

| | | | |
|---|---|---|---|
| **HARDNESS-CALC-VA** | Water | Hardness | APHA 2340B |

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

| | | | |
|---|---|---|---|
| **HG-TOT-LOW-CVAFS-VA** | Water | Total Mercury in Water by CVAFS(Low) | EPA 245.7 |

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

| | | | |
|---|---|---|---|
| **MET-TOT-CCME-MS-VA** | Water | Total Metals in Water by ICPMS (CCME) | EPA SW-846 3005A/6020A |

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

| | | | |
|---|---|---|---|
| **MET-TOT-ICP-VA** | Water | Total Metals in Water by ICPOES | EPA SW-846 3005A/6010B |

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or

# Reference Information

microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

**MET-TOT-LOW-MS-VA** Water Total Metals in Water by ICPMS(Low) EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

**NH3-F-VA** Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

**OGG-LL-SF-VA** Water Oil & Grease by Gravimetric BCMOE GRAVIMETRIC

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Methods 3510 & 9071, published by the United States Environmental Protection Agency (EPA), "Standard Methods for the Examination of Water and Wastewater", 20th ed., Method 5520, published by the American Public Health Association, and "BC Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediment and Biological Materials," 5th ed., published by the B.C. Ministry of Environment, Lands & Parks, 1994. The procedure involves an extraction of the entire water sample with hexane. This extract is then evaporated to dryness, and the residue weighed to determine Oil and Grease. ALS Environmental's routine detection limit, or Limit of Reporting (LOR), for this method is 2 mg/L for a 1L sample volume. By request, a LOR of 1 mg/L is sometimes applied for this method. The 1 mg/L LOR is equal to the 99% confidence limit Method Detection Limit as defined by the US EPA. A higher degree of variability is expected at levels below 2 mg/L.

**P-T-COL-VA** Water Total P in Water by Colour APHA 4500-P Phosphorous

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

**PH-PCT-VA** Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

**PH-PCT-VA** Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

**PO4-DO-COL-VA** Water Diss. Orthophosphate in Water by Colour APHA 4500-P Phosphorous

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.

**TSS-VA** Water Total Suspended Solids by Gravimetric APHA 2540 D - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

**VOC7-HSMS-VA** Water BTEX/MTBE/Styrene by Headspace GCMS EPA8260B, 5021

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transfered into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

**VOC7/VOC-SURR-MS-VA** Water VOC7 and/or VOC Surrogates for Waters EPA8260B, 5021

**XYLENES-CALC-VA** Water Sum of Xylene Isomer Concentrations CALCULATION

Calculation of Total Xylenes

Total Xylenes is the sum of the concentrations of the ortho, meta, and para Xylene isomers. Results below detection limit (DL) are treated as zero. The DL for Total Xylenes is set to a value no less than the square root of the sum of the squares of the DLs of the individual Xylenes.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location |
|---|---|
| VA | ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA |

**Chain of Custody Numbers:**

10-101443

# Reference Information

**GLOSSARY OF REPORT TERMS**

*Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.*
*mg/kg - milligrams per kilogram based on dry weight of sample.*
*mg/kg wwt - milligrams per kilogram based on wet weight of sample.*
*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.*
*mg/L - milligrams per litre.*
*< - Less than.*
*D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).*
*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*
*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*
*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

10- 101443

ALS Environmental

**Chain of Custody / Analytical Request Form**
**Canada Toll Free: 1 800 668 9878**
www.alsglobal.com

Page 1 of 1

| Report To | | Report Format / Distribution | | Service Request: (Rush subject to availability - Contact ALS to confirm TAT) | |
|---|---|---|---|---|---|
| Company: | SRK Consulting | Standard: ✓ | Other (specify): | X | Regular (Standard Turnaround Times - Business Days) |
| Contact: | Arlene Laudrum | Select: PDF ✓ | Excel ✓ Digital Fax | | Priority(2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT |
| Address: | 5204, 50th Avenue, Suite 202 Yellowknife, NT | Email 1: | alaudrum@srk.com | | Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT |
| Phone: | 867-766-6332 Fax: 866-380-3458 | Email 2: | lupinoperations@gmail.com | | Same Day or Weekend Emergency - Contact ALS to confirm TAT |

| Invoice To | Same as Report ? (circle) Yes or No (if No, provide details) | Client / Project Information | |
|---|---|---|---|
| | Copy of Invoice with Report? (circle) Yes or No | Job #: | ICE015.000 |
| Company: | SRK Consulting | PO / AFE: | LUPIN |
| Contact: | Matthew Lai | LSD: | |
| Address: | 2200-1066 | | |
| Phone: | 6046814196 Fax: | Quote #: | |

| Lab Work Order # (lab use only) | | ALS Contact: | Brad | Sampler: | Arlene |
|---|---|---|---|---|---|

**Analysis Request**
( Indicate Filtered or Preserved, F/P )

| Sample # | Sample Identification (This description will appear on the report) | Date (dd-mmm-yy) | Time (hh:mm) | Sample Type | BETX | F2-F4 | Hardness pH. alkalinity | TSS | Total oil + grease | Total manganese | Total iron | Total metals | Nitrate / Nitrite | Total phosphorus + ortho phosphate | BOD | | Number of Containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LUP-27-MTS-2011-09-20 | 20-09-11 | 9:15 | water | X | X | X | X | X | X | X | | | | | | 9 |
| | LUP-14-2011-09-20 | 20-09-11 | 10:30 | water | X | X | X | X | X | X | | X | X | X | X | | 11 |

*L1061393-COFC*

**Special Instructions / Regulations / Hazardous Details**

CCME - Commercial

**Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.**

**By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.**

| SHIPMENT RELEASE (client use) | | | SHIPMENT RECEPTION (lab use only) | | | | SHIPMENT VERIFICATION (lab use only) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Released by: | Date: | Time: | Received by: | Date: | Time: | Temperature: | Verified by: | Date: | Time: | Observations: Yes / No ? If Yes add SIF |
| Laudrum | 20/09/11 | 12:30 | | 20-Sep-11 | 5:10 pm | 8.6 °C | | | | |

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION | WHITE - LABORATORY COPY | YELLOW - CLIENT COPY | GENF 18.01 Front

SRK CONSULTING (CANADA) INC.
ATTN: Arlene Laudrum
202 - 5204 50th Avenue
Yellowknife NT X1A 1E2

Date Received: 23-SEP-11
Report Date: 07-OCT-11 17:33 (MT)
Version: FINAL

Client Phone: 867-766-6332

# Certificate of Analysis

**Lab Work Order #: L1062554**

Project P.O. #: LUPIN & ULU
Job Reference: ICE015.000
C of C Numbers: 10-101444
Legal Site Desc:

**Comments:** We did not received a preserved cut for the Ammonia analysis. On receiving day, a cut was taken out of the un-preserved bottle and preserved.

Andre Langlais
Account Manager

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID | L1062554-1 | L1062554-2 | L1062554-3 | | |
|---|---|---|---|---|---|
| Description | WATER | WATER | WATER | | |
| Sampled Date | 21-SEP-11 | 22-SEP-11 | 22-SEP-11 | | |
| Sampled Time | 15:15 | 12:30 | 13:15 | | |
| Client ID | LUP-19 | ULU-7.2011.09.22 | ULU-8.2011.09.22 | | |
| **Grouping** / **Analyte** | | | | | |
| **WATER** | | | | | |
| **Physical Tests** | | | | | |
| Conductivity (uS/cm) | 285 | 595 | 655 | | |
| Hardness (as CaCO3) (mg/L) | 103 | 266 | 297 | | |
| pH (pH) | 4.90 | 7.56 | 7.67 | | |
| Total Suspended Solids (mg/L) | 21.9 | 189 | 3.2 | | |
| **Anions and Nutrients** | | | | | |
| Alkalinity, Total (as CaCO3) (mg/L) | <2.0 | | | | |
| Ammonia (as N) (mg/L) | 0.121 PEHT | | | | |
| **Total Metals** | | | | | |
| Aluminum (Al)-Total (mg/L) | 2.10 | 0.0440 | 0.0511 | | |
| Antimony (Sb)-Total (mg/L) | <0.00050 | <0.00050 | <0.00050 | | |
| Arsenic (As)-Total (mg/L) | 0.253 | 0.00268 | 0.00150 | | |
| Barium (Ba)-Total (mg/L) | 0.023 | 0.032 | <0.020 | | |
| Beryllium (Be)-Total (mg/L) | <0.0010 | <0.0010 | <0.0010 | | |
| Bismuth (Bi)-Total (mg/L) | <0.20 | <0.20 | <0.20 | | |
| Boron (B)-Total (mg/L) | <0.10 | <0.10 | <0.10 | | |
| Cadmium (Cd)-Total (mg/L) | 0.000355 | <0.000017 | 0.000043 | | |
| Calcium (Ca)-Total (mg/L) | 17.7 | 87.0 | 98.0 | | |
| Chromium (Cr)-Total (mg/L) | 0.0019 | <0.0010 | <0.0010 | | |
| Cobalt (Co)-Total (mg/L) | 0.0690 | <0.00030 | 0.00051 | | |
| Copper (Cu)-Total (mg/L) | 0.0332 | 0.0023 | 0.0018 | | |
| Iron (Fe)-Total (mg/L) | 2.23 | 0.128 | 0.113 | | |
| Lead (Pb)-Total (mg/L) | 0.00472 | <0.00050 | <0.00050 | | |
| Lithium (Li)-Total (mg/L) | 0.0160 | <0.0050 | 0.0089 | | |
| Magnesium (Mg)-Total (mg/L) | 14.2 | 11.8 | 12.6 | | |
| Manganese (Mn)-Total (mg/L) | 1.19 | 0.0400 | 0.0786 | | |
| Mercury (Hg)-Total (mg/L) | <0.000010 | <0.000010 | <0.000010 | | |
| Molybdenum (Mo)-Total (mg/L) | <0.0010 | <0.0010 | <0.0010 | | |
| Nickel (Ni)-Total (mg/L) | 0.176 | 0.0014 | 0.0027 | | |
| Phosphorus (P)-Total (mg/L) | <0.30 | <0.30 | <0.30 | | |
| Potassium (K)-Total (mg/L) | 2.3 | 4.8 | 5.9 | | |
| Selenium (Se)-Total (mg/L) | <0.0010 | <0.0010 | <0.0010 | | |
| Silicon (Si)-Total (mg/L) | 7.05 | 3.54 | 2.19 | | |
| Silver (Ag)-Total (mg/L) | <0.000020 | <0.000020 | <0.000020 | | |
| Sodium (Na)-Total (mg/L) | 3.7 | 16.4 | 23.1 | | |
| Strontium (Sr)-Total (mg/L) | 0.0750 | 0.122 | 0.112 | | |
| Thallium (Tl)-Total (mg/L) | <0.00020 | <0.00020 | <0.00020 | | |
| Tin (Sn)-Total (mg/L) | <0.00050 | <0.00050 | <0.00050 | | |
| Titanium (Ti)-Total (mg/L) | 0.025 | <0.010 | <0.010 | | |
| Uranium (U)-Total (mg/L) | 0.00031 | <0.00020 | <0.00020 | | |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID | L1062554-1 | L1062554-2 | L1062554-3 | | |
|---|---|---|---|---|---|---|
| | Description | WATER | WATER | WATER | | |
| | Sampled Date | 21-SEP-11 | 22-SEP-11 | 22-SEP-11 | | |
| | Sampled Time | 15:15 | 12:30 | 13:15 | | |
| | Client ID | LUP-19 | ULU-7.2011.09.22 | ULU-8.2011.09.22 | | |
| **Grouping** | **Analyte** | | | | | |
| **WATER** | | | | | | |
| **Total Metals** | Vanadium (V)-Total (mg/L) | 0.0012 | <0.0010 | <0.0010 | | |
| | Zinc (Zn)-Total (mg/L) | 0.0897 | <0.0050 | 0.0353 | | |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

# Reference Information

**Qualifiers for Individual Parameters Listed:**

| Qualifier | Description |
|---|---|
| PEHT | Parameter Exceeded Recommended Holding Time Prior to Analysis |

**Test Method References:**

| ALS Test Code | Matrix | Test Description | Method Reference** |
|---|---|---|---|
| **ALK-COL-VA** | Water | Alkalinity by Colourimetric (Automated) | APHA 2310.2 |

This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.

| | | | |
|---|---|---|---|
| **EC-PCT-VA** | Water | Conductivity (Automated) | APHA 2510 Auto. Conduc. |

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

| | | | |
|---|---|---|---|
| **HARDNESS-CALC-VA** | Water | Hardness | APHA 2340B |

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

| | | | |
|---|---|---|---|
| **HG-TOT-LOW-CVAFS-VA** | Water | Total Mercury in Water by CVAFS(Low) | EPA 245.7 |

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

| | | | |
|---|---|---|---|
| **MET-TOT-CCME-MS-VA** | Water | Total Metals in Water by ICPMS (CCME) | EPA SW-846 3005A/6020A |

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

| | | | |
|---|---|---|---|
| **MET-TOT-ICP-VA** | Water | Total Metals in Water by ICPOES | EPA SW-846 3005A/6010B |

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

| | | | |
|---|---|---|---|
| **NH3-F-VA** | Water | Ammonia in Water by Fluorescence | J. ENVIRON. MONIT., 2005, 7, 37-42, RSC |

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

| | | | |
|---|---|---|---|
| **PH-PCT-VA** | Water | pH by Meter (Automated) | APHA 4500-H "pH Value" |

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

| | | | |
|---|---|---|---|
| **PH-PCT-VA** | Water | pH by Meter (Automated) | APHA 4500-H pH Value |

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

| | | | |
|---|---|---|---|
| **TSS-VA** | Water | Total Suspended Solids by Gravimetric | APHA 2540 D - GRAVIMETRIC |

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location |
|---|---|
| VA | ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA |

**Chain of Custody Numbers:**

10-101444

# Reference Information

**GLOSSARY OF REPORT TERMS**

*Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.*
*mg/kg - milligrams per kilogram based on dry weight of sample.*
*mg/kg wwt - milligrams per kilogram based on wet weight of sample.*
*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.*
*mg/L - milligrams per litre.*
*< - Less than.*
*D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).*
*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*
*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*
*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

10- 101444

ALS Environmental

**Chain of Custody / Analytical Request Form**
**Canada Toll Free: 1 800 668 9878**
www.alsglobal.com

Page ___ of ___

| Report To | | Report Format / Distribution | | Service Request: (Rush subject to availability - Contact ALS to confirm TAT) |
|---|---|---|---|---|
| Company: | SRK Consulting | Standard: ✓ Other (specify): | | X Regular (Standard Turnaround Times - Business Days) |
| Contact: | Arlene Lowdrum | Select: PDF ✓ Excel ✓ Digital Fax | | Priority (2-4 Business Days) - 50% surcharge - Contact ALS to confirm TAT |
| Address: | 5204, 50th Avenue, Suite 202 Yellowknife NT | Email 1: alowdrum@srk.com | | Emergency (1-2 Business Days) - 100% Surcharge - Contact ALS to confirm TAT |
| | | Email 2: lupinoperations@gmail.com | | Same Day or Weekend Emergency - Contact ALS to confirm TAT |
| Phone: | 867 766 6332 Fax: 866 380 3458 | | | |
| **Invoice To** | Same as Report ? (circle) Yes or No (if No, provide details) | **Client / Project Information** | | **Analysis Request** |
| | Copy of Invoice with Report? (circle) Yes or No | Job #: | ICE015-000 | ( Indicate Filtered or Preserved, F/P ) |
| Company: | SRK Consulting | PO / AFE: | LUPIN x ULU | |
| Contact: | Matthew Lai | LSD: | | |
| Address: | 2200-1066 W. Hastings Vancouver | | | |
| Phone: | Fax: | Quote #: | | |
| **Lab Work Order # (lab use only)** | L1062554 | **ALS Contact:** | **Sampler:** | |

| Sample # | Sample Identification (This description will appear on the report) | Date (dd-mmm-yy) | Time (hh:mm) | Sample Type | T. Metals | pH, cond., TSS | chlorine | sodium, calcium | ammonia | alkalinity, hardness | hardness | | | | | | Number of Containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ~~SEEP-DAM~~ 2 · 2011-09-21 | 21-09-11 | 3:15 | water | X | X | | | X | X | X | | | | | | |
| | ULU-7 · 2011.09.22 | 22.09.11 | 12:30 | ↓ | X | X | X | X | | | | | | | | | |
| | ULU-8 · 2011-09-22 | 22.09.11 | 1:15 | ↓ | X | X | X | X | | | | | | | | | |

*L1062554-COFC*

**Special Instructions / Regulations / Hazardous Details**

CCME - Commercial

**Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.**

**By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.**

| SHIPMENT RELEASE (client use) | | | SHIPMENT RECEPTION (lab use only) | | | | SHIPMENT VERIFICATION (lab use only) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Released by: | Date: | Time: | Received by: | Date: | Time: | Temperature: | Verified by: | Date: | Time: | Observations: Yes / No ? If Yes add SIF |
| A Lowdrum | 22/09/11 | 10:30 | RD | Sep 26/11 | 16:35 | 6 °C | | | | |

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY — GENF 18.01 Front

SRK CONSULTING (CANADA) INC.
ATTN: Arlene Laudrum
202 - 5204 50th Avenue
Yellowknife NT X1A 1E2

Date Received: 28-SEP-11
Report Date: 17-OCT-11 17:04 (MT)
Version: FINAL

Client Phone: 867-766-6332

# Certificate of Analysis

**Lab Work Order #: L1064676**

Project P.O. #: LUPIN
Job Reference: 1CE015.000
C of C Numbers: ELG-LUP-TOM-1
Legal Site Desc:

**Comments:** ADDITIONAL 30-SEP-11 11:09

Andre Langlais
Account Manager

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID | L1064676-1 |
|---|---|---|
| | Description | WATER |
| | Sampled Date | 27-SEP-11 |
| | Sampled Time | 15:40 |
| | Client ID | LUP-14-2011-09-27 |
| **Grouping** | **Analyte** | |
| **WATER** | | |
| **Physical Tests** | Hardness (as CaCO3) (mg/L) | 94.1 |
| | pH (pH) | 7.61 |
| | Total Suspended Solids (mg/L) | <3.0 |
| **Anions and Nutrients** | Alkalinity, Total (as CaCO3) (mg/L) | 17.8 |
| | Ammonia (as N) (mg/L) | 0.0136 |
| | Nitrate (as N) (mg/L) | 0.0172 |
| | Nitrite (as N) (mg/L) | 0.0019 |
| | Total Kjeldahl Nitrogen (mg/L) | 0.418 |
| | Total Nitrogen (mg/L) | 0.438 |
| | Orthophosphate-Dissolved (as P) (mg/L) | 0.0022 |
| | Phosphorus (P)-Total (mg/L) | 0.0183 |
| **Bacteriological Tests** | Fecal Coliforms (CFU/100mL) | 7 |
| **Total Metals** | Aluminum (Al)-Total (mg/L) | 0.0455 |
| | Antimony (Sb)-Total (mg/L) | <0.00010 |
| | Arsenic (As)-Total (mg/L) | 0.00705 |
| | Barium (Ba)-Total (mg/L) | 0.00860 |
| | Beryllium (Be)-Total (mg/L) | <0.00050 |
| | Bismuth (Bi)-Total (mg/L) | <0.00050 |
| | Boron (B)-Total (mg/L) | 0.040 |
| | Cadmium (Cd)-Total (mg/L) | <0.000050 |
| | Calcium (Ca)-Total (mg/L) | 28.6 |
| | Chromium (Cr)-Total (mg/L) | <0.00050 |
| | Cobalt (Co)-Total (mg/L) | 0.00070 |
| | Copper (Cu)-Total (mg/L) | 0.00114 |
| | Iron (Fe)-Total (mg/L) | 0.268 |
| | Lead (Pb)-Total (mg/L) | 0.000071 |
| | Lithium (Li)-Total (mg/L) | 0.0343 |
| | Magnesium (Mg)-Total (mg/L) | 5.50 |
| | Manganese (Mn)-Total (mg/L) | 0.0226 |
| | Molybdenum (Mo)-Total (mg/L) | 0.000401 |
| | Nickel (Ni)-Total (mg/L) | 0.00626 |
| | Phosphorus (P)-Total (mg/L) | <0.30 |
| | Potassium (K)-Total (mg/L) | 3.2 |
| | Selenium (Se)-Total (mg/L) | <0.0010 |
| | Silicon (Si)-Total (mg/L) | 0.154 |
| | Silver (Ag)-Total (mg/L) | <0.000010 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| | | | | | | |
|---|---|---|---|---|---|---|
| | Sample ID | L1064676-1 | | | | |
| | Description | WATER | | | | |
| | Sampled Date | 27-SEP-11 | | | | |
| | Sampled Time | 15:40 | | | | |
| | Client ID | LUP-14-2011-09-27 | | | | |
| **Grouping** | **Analyte** | | | | | |
| **WATER** | | | | | | |
| **Total Metals** | Sodium (Na)-Total (mg/L) | 20.8 | | | | |
| | Strontium (Sr)-Total (mg/L) | 0.268 | | | | |
| | Thallium (Tl)-Total (mg/L) | <0.00010 | | | | |
| | Tin (Sn)-Total (mg/L) | <0.00010 | | | | |
| | Titanium (Ti)-Total (mg/L) | <0.010 | | | | |
| | Uranium (U)-Total (mg/L) | 0.000027 | | | | |
| | Vanadium (V)-Total (mg/L) | <0.0010 | | | | |
| | Zinc (Zn)-Total (mg/L) | 0.0035 | | | | |
| **Aggregate Organics** | BOD (mg/L) | <5.0 PEHT | | | | |
| | Oil and Grease (mg/L) | <5.0 | | | | |
| **Volatile Organic Compounds** | Benzene (mg/L) | <0.00050 | | | | |
| | Ethylbenzene (mg/L) | <0.00050 | | | | |
| | Methyl t-butyl ether (MTBE) (mg/L) | <0.00050 | | | | |
| | Toluene (mg/L) | <0.00050 | | | | |
| | ortho-Xylene (mg/L) | <0.00050 | | | | |
| | meta- & para-Xylene (mg/L) | <0.00050 | | | | |
| | Xylenes (mg/L) | <0.00075 | | | | |
| | Surrogate: 4-Bromofluorobenzene (SS) (%) | 92.4 | | | | |
| | Surrogate: 1,4-Difluorobenzene (SS) (%) | 107.6 | | | | |
| **Hydrocarbons** | F2 (C10-C16) (mg/L) | <0.30 | | | | |
| | F3 (C16-C34) (mg/L) | <0.30 | | | | |
| | F4 (C34-C50) (mg/L) | <0.30 | | | | |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

# Reference Information

**QC Samples with Qualifiers & Comments:**

| QC Type Description | Parameter | Qualifier | Applies to Sample Number(s) |
|---|---|---|---|
| Duplicate | Beryllium (Be)-Total | DLA | L1064676-1 |
| Duplicate | Bismuth (Bi)-Total | DLA | L1064676-1 |
| Duplicate | Chromium (Cr)-Total | DLA | L1064676-1 |
| Duplicate | Lead (Pb)-Total | DLA | L1064676-1 |
| Duplicate | Lithium (Li)-Total | DLA | L1064676-1 |
| Duplicate | Selenium (Se)-Total | DLA | L1064676-1 |
| Duplicate | Silver (Ag)-Total | DLA | L1064676-1 |
| Duplicate | Thallium (Tl)-Total | DLA | L1064676-1 |
| Duplicate | Tin (Sn)-Total | DLA | L1064676-1 |
| Duplicate | Vanadium (V)-Total | DLA | L1064676-1 |
| Duplicate | Fecal Coliforms | UAL | L1064676-1 |

**Qualifiers for Individual Parameters Listed:**

| Qualifier | Description |
|---|---|
| DLA | Detection Limit Adjusted For required dilution |
| PEHT | Parameter Exceeded Recommended Holding Time Prior to Analysis |
| UAL | Unreliable: Sample Age Exceeds Normal Limit |

**Test Method References:**

| ALS Test Code | Matrix | Test Description | Method Reference** |
|---|---|---|---|
| **ALK-COL-VA** | Water | Alkalinity by Colourimetric (Automated) | APHA 310.2 |

This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.

| | | | |
|---|---|---|---|
| **ANIONS-NO2-IC-VA** | Water | Nitrite in Water by Ion Chromatography | EPA 300.0 |

This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrite is detected by UV absorbance.

| | | | |
|---|---|---|---|
| **ANIONS-NO3-IC-VA** | Water | Nitrate in Water by Ion Chromatography | EPA 300.0 |

This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrate is detected by UV absorbance.

| | | | |
|---|---|---|---|
| **BOD5-VA** | Water | Biochemical Oxygen Demand- 5 day | APHA 5210 B- "BIOCHEMICAL OXYGEN DEMAND" |

This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.

| | | | |
|---|---|---|---|
| **BOD5-VA** | Water | Biochemical Oxygen Demand- 5 day | APHA 5210 B- BIOCHEMICAL OXYGEN DEMAND |

This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.

| | | | |
|---|---|---|---|
| **F2-4-SF-FID-VA** | Water | Extractable Hydrocarbons in water GCFID | CWS (CCME) |

Petroleum Hydrocarbons (F2-F4) in Water

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, published by the United States Environmental Protection Agency (EPA) and the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2000." The procedure involves a liquid-liquid extraction of the entire water sample using dichloromethane prior to capillary column gas chromatography with flame ionization detection (GC/FID).

A silica gel cleanup procedure is applied before GC analysis, which is intended to selectively remove most naturally occurring organics.

| | | | |
|---|---|---|---|
| **FC-MF-YL** | Water | Fecal Coliform | APHA 9222D |
| **HARDNESS-CALC-VA** | Water | Hardness | APHA 2340B |

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

| | | | |
|---|---|---|---|
| **MET-TOT-ICP-VA** | Water | Total Metals in Water by ICPOES | EPA SW-846 3005A/6010B |

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method

# Reference Information

6010B).

| | | | |
|---|---|---|---|
| **MET-TOT-LOW-MS-VA** | Water | Total Metals in Water by ICPMS(Low) | EPA SW-846 3005A/6020A |

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

| | | | |
|---|---|---|---|
| **NH3-F-VA** | Water | Ammonia in Water by Fluorescence | J. ENVIRON. MONIT., 2005, 7, 37-42, RSC |

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

| | | | |
|---|---|---|---|
| **OGG-SF-VA** | Water | Oil & Grease by Gravimetric | BCMOE (2010), EPA1664A |

The procedure involves an extraction of the entire water sample with hexane. This extract is then evaporated to dryness, and the residue weighed to determine Oil and Grease.

| | | | |
|---|---|---|---|
| **P-T-COL-VA** | Water | Total P in Water by Colour | APHA 4500-P Phosphorous |

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

| | | | |
|---|---|---|---|
| **PH-PCT-VA** | Water | pH by Meter (Automated) | APHA 4500-H "pH Value" |

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

| | | | |
|---|---|---|---|
| **PH-PCT-VA** | Water | pH by Meter (Automated) | APHA 4500-H pH Value |

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

| | | | |
|---|---|---|---|
| **PO4-DO-COL-VA** | Water | Diss. Orthophosphate in Water by Colour | APHA 4500-P Phosphorous |

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.

| | | | |
|---|---|---|---|
| **TKN-F-VA** | Water | TKN in Water by Fluorescence | APHA 4500-NORG D. |

This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.

| | | | |
|---|---|---|---|
| **TN-CALC-VA** | Water | Total Nitrogen (Calculation) | BC MOE LABORATORY MANUAL (2005) |

Total Nitrogen is a calculated parameter. Total Nitrogen = Total Kjeldahl Nitrogen + [Nitrate and Nitrite (as N)]

| | | | |
|---|---|---|---|
| **TSS-VA** | Water | Total Suspended Solids by Gravimetric | APHA 2540 D - GRAVIMETRIC |

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

| | | | |
|---|---|---|---|
| **VOC7-HSMS-VA** | Water | BTEX/MTBE/Styrene by Headspace GCMS | EPA8260B, 5021 |

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transfered into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

| | | | |
|---|---|---|---|
| **VOC7/VOC-SURR-MS-VA** | Water | VOC7 and/or VOC Surrogates for Waters | EPA8260B, 5021 |
| **XYLENES-CALC-VA** | Water | Sum of Xylene Isomer Concentrations | CALCULATION |

Calculation of Total Xylenes

Total Xylenes is the sum of the concentrations of the ortho, meta, and para Xylene isomers. Results below detection limit (DL) are treated as zero. The DL for Total Xylenes is set to a value no less than the square root of the sum of the squares of the DLs of the individual Xylenes.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location |
|---|---|
| VA | ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA |
| YL | ALS ENVIRONMENTAL - YELLOWKNIFE, NW, CANADA |

**Chain of Custody Numbers:**

# Reference Information

ELG-LUP-TOM-1

**GLOSSARY OF REPORT TERMS**

*Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.*
*mg/kg - milligrams per kilogram based on dry weight of sample.*
*mg/kg wwt - milligrams per kilogram based on wet weight of sample.*
*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.*
*mg/L - milligrams per litre.*
*< - Less than.*
*D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).*
*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*
*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*
*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

ALS Environmental

# Chain of Custody / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

COC # _____

Page 1 of 1

| Report To | | | | Report Format / Distribution | | | | Service Requested (Rush for routine analysis subject to availability) |
|---|---|---|---|---|---|---|---|---|
| Company: | SRK Consulting | | | Standard ☐ Other | | | | ◉ Regular (Standard Turnaround Times - Business Days) |
| Contact: | Arlene Laudrum | | | ☑ PDF | ☑ Excel | ☐ Digital | ☐ Fax | ○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT |
| Address: | 5204 - 50th Avenuye, Suite 202 | | | Email 1: | alaudrum@srk.com | | | ○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT |
| | Yellowknife, NT X1A 1E2 | | | Email 2: | lupinoperations@gmail.com | | | ○ Same Day or Weekend Emergency - Contact ALS to Confirm TAT |
| Phone: | 867-766-6332 | Fax: | 866-380-3458 | Email 3: | | | | |
| Invoice To | Same as Report ? ☐ Yes | ☑ No | | Client / Project Information | | | | |
| Hardcopy of Invoice with Report? | ☐ Yes | ☑ No | | Job #: | 1CE015.000 | | | |
| Company: | SRK Consulting | | | PO / AFE: | Lupin | | | |
| Contact: | Matthew Lai | | | LSD: | | | | |
| Address: | 2200 - 1066 W. Hastings St., Vancouver, V6E 3X2 | | | | | | | |
| Phone: | 604-681-4196 | Fax: | 604-687-5532 | Quote #: | | | | |

Lab Work Order # (lab use only): L1064676

ALS Contact: | Sampler: Tom Collett

| Sample # | Sample Identification (This description will appear on the report) | Date (dd-mmm-yy) | Time (hh:mm) | Sample Type | total metals | BOD5 | TSS, pH | Faecal Coliform | Alkalinity, hardness | Total Nitrogen | Nitrite, Nitate | Oil & Grease | BETX | F2-F4 | Total Phosphorus | Total Orthophosphorus | Number of Containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LUP-14-2011-09- | | | water | X | X | X | X | X | X | X | X | X | X | X | X | |

Analysis Request — Please indicate below Filtered, Preserved or both (F, P, F/P)

*L1064676-COFC*

**Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details**

CCME Commercial, Freshwater Aquatic Life

**Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.**

**By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.**

**Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.**

| SHIPMENT RELEASE (client use) | | | SHIPMENT RECEPTION (lab use only) | | | | SHIPMENT VERIFICATION (lab use only) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Released by: | Date (dd-mmm-yy) | Time (hh-mm) | Received by: | Date: | Time: | Temperature: °C | Verified by: | Date: | Time: | Observations: Yes / No ? If Yes add SIF |
| | | | | | | | | | | |

SRK CONSULTING
ATTN: Arlene Laudrum
Suite 202, 5204 - 50th Avenue
Yellowknife NT X1A 1E2

Date Received: 28-OCT-11
Report Date: 16-NOV-11 09:58 (MT)
Version: FINAL

Client Phone: 867-873-8670

# Certificate of Analysis

**Lab Work Order #:** **L1078407**
Project P.O. #: NOT SUBMITTED
Job Reference: 1CE015.000
C of C Numbers: 1 of 1
Legal Site Desc:

JUDY BETHUNE
Supervisor

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L1078407-1 LUP-01-2011-10-24 | | | | | | | |
| Sampled By: CLIENT on 24-OCT-11 | | | | | | | |
| Matrix: SURFACE WATER | | | | | | | |
| **Hardness** | | | | | | | |
| **Dissolved Metals in Water by ICPOES** | | | | | | | |
| Calcium (Ca)-Dissolved | 1.34 | | 0.50 | mg/L | | 07-NOV-11 | R2282828 |
| Magnesium (Mg)-Dissolved | 0.63 | | 0.10 | mg/L | | 07-NOV-11 | R2282828 |
| **Hardness (from Dissolved Ca and Mg)** | | | | | | | |
| Hardness (as CaCO3) | 5.9 | | 1.3 | mg/L | | 07-NOV-11 | |
| **Total Metals - CCME** | | | | | | | |
| **Mercury (Hg) - Total** | | | | | | | |
| Mercury (Hg)-Total | <0.00010 | | 0.00010 | mg/L | | 02-NOV-11 | R2279951 |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | |
| Aluminum (Al)-Total | 0.030 | | 0.010 | mg/L | | 04-NOV-11 | R2281671 |
| Antimony (Sb)-Total | <0.00040 | | 0.00040 | mg/L | | 04-NOV-11 | R2281671 |
| Arsenic (As)-Total | 0.00090 | | 0.00040 | mg/L | | 04-NOV-11 | R2281671 |
| Barium (Ba)-Total | 0.0030 | | 0.0030 | mg/L | | 04-NOV-11 | R2281671 |
| Beryllium (Be)-Total | <0.0010 | | 0.0010 | mg/L | | 04-NOV-11 | R2281671 |
| Boron (B)-Total | <0.050 | | 0.050 | mg/L | | 04-NOV-11 | R2281671 |
| Cadmium (Cd)-Total | <0.000050 | | 0.000050 | mg/L | | 04-NOV-11 | R2281671 |
| Chromium (Cr)-Total | <0.0050 | | 0.0050 | mg/L | | 04-NOV-11 | R2281671 |
| Cobalt (Co)-Total | <0.0020 | | 0.0020 | mg/L | | 04-NOV-11 | R2281671 |
| Copper (Cu)-Total | 0.0015 | | 0.0010 | mg/L | | 04-NOV-11 | R2281671 |
| Lead (Pb)-Total | 0.00028 | | 0.00010 | mg/L | | 04-NOV-11 | R2281671 |
| Lithium (Li)-Total | <0.010 | | 0.010 | mg/L | | 04-NOV-11 | R2281671 |
| Molybdenum (Mo)-Total | <0.0050 | | 0.0050 | mg/L | | 04-NOV-11 | R2281671 |
| Nickel (Ni)-Total | 0.0024 | | 0.0020 | mg/L | | 04-NOV-11 | R2281671 |
| Selenium (Se)-Total | <0.00040 | | 0.00040 | mg/L | | 04-NOV-11 | R2281671 |
| Silver (Ag)-Total | <0.00010 | | 0.00010 | mg/L | | 04-NOV-11 | R2281671 |
| Thallium (Tl)-Total | <0.00010 | | 0.00010 | mg/L | | 04-NOV-11 | R2281671 |
| Tin (Sn)-Total | <0.050 | | 0.050 | mg/L | | 04-NOV-11 | R2281671 |
| Titanium (Ti)-Total | <0.0010 | | 0.0010 | mg/L | | 04-NOV-11 | R2281671 |
| Uranium (U)-Total | <0.00010 | | 0.00010 | mg/L | | 04-NOV-11 | R2281671 |
| Vanadium (V)-Total | <0.0010 | | 0.0010 | mg/L | | 04-NOV-11 | R2281671 |
| Zinc (Zn)-Total | 0.0151 | | 0.0040 | mg/L | | 04-NOV-11 | R2281671 |
| **Total Metals in Water by ICPOES (Low)** | | | | | | | |
| Calcium (Ca)-Total | 1.34 | | 0.50 | mg/L | | 03-NOV-11 | R2280810 |
| Iron (Fe)-Total | 0.071 | | 0.010 | mg/L | | 03-NOV-11 | R2280810 |
| Magnesium (Mg)-Total | 0.64 | | 0.10 | mg/L | | 03-NOV-11 | R2280810 |
| Manganese (Mn)-Total | 0.0036 | | 0.0020 | mg/L | | 03-NOV-11 | R2280810 |
| Potassium (K)-Total | 0.48 | | 0.10 | mg/L | | 03-NOV-11 | R2280810 |
| Sodium (Na)-Total | <1.0 | | 1.0 | mg/L | | 03-NOV-11 | R2280810 |
| **Miscellaneous Parameters** | | | | | | | |
| Total Suspended Solids | <3.0 | | 3.0 | mg/L | | 01-NOV-11 | R2279261 |
| L1078407-2 LSL-2011-10-24 | | | | | | | |
| Sampled By: CLIENT on 24-OCT-11 | | | | | | | |
| Matrix: SURFACE WATER | | | | | | | |
| **Hardness** | | | | | | | |
| **Dissolved Metals in Water by ICPOES** | | | | | | | |
| Calcium (Ca)-Dissolved | 29.2 | | 0.50 | mg/L | | 11-NOV-11 | R2284934 |
| Magnesium (Mg)-Dissolved | 6.24 | | 0.10 | mg/L | | 11-NOV-11 | R2284934 |
| **Hardness (from Dissolved Ca and Mg)** | | | | | | | |
| Hardness (as CaCO3) | 98.7 | | 1.3 | mg/L | | 11-NOV-11 | |
| **Total Metals - CCME** | | | | | | | |
| **Mercury (Hg) - Total** | | | | | | | |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L1078407-2 LSL-2011-10-24 | | | | | | | |
| Sampled By: CLIENT on 24-OCT-11 | | | | | | | |
| Matrix: SURFACE WATER | | | | | | | |
| **Mercury (Hg) - Total** | | | | | | | |
| Mercury (Hg)-Total | <0.00010 | | 0.00010 | mg/L | | 08-NOV-11 | R2283442 |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | |
| Aluminum (Al)-Total | 0.179 | | 0.010 | mg/L | | 31-OCT-11 | R2279010 |
| Antimony (Sb)-Total | <0.00040 | | 0.00040 | mg/L | | 31-OCT-11 | R2279010 |
| Arsenic (As)-Total | 0.00508 | | 0.00040 | mg/L | | 31-OCT-11 | R2279010 |
| Barium (Ba)-Total | 0.0107 | | 0.0030 | mg/L | | 31-OCT-11 | R2279010 |
| Beryllium (Be)-Total | <0.0010 | | 0.0010 | mg/L | | 31-OCT-11 | R2279010 |
| Boron (B)-Total | 0.051 | | 0.050 | mg/L | | 31-OCT-11 | R2279010 |
| Cadmium (Cd)-Total | <0.000050 | | 0.000050 | mg/L | | 31-OCT-11 | R2279010 |
| Chromium (Cr)-Total | <0.0050 | | 0.0050 | mg/L | | 31-OCT-11 | R2279010 |
| Cobalt (Co)-Total | 0.0028 | | 0.0020 | mg/L | | 31-OCT-11 | R2279010 |
| Copper (Cu)-Total | 0.0022 | | 0.0010 | mg/L | | 31-OCT-11 | R2279010 |
| Lead (Pb)-Total | 0.00011 | | 0.00010 | mg/L | | 31-OCT-11 | R2279010 |
| Lithium (Li)-Total | 0.033 | | 0.010 | mg/L | | 31-OCT-11 | R2279010 |
| Molybdenum (Mo)-Total | <0.0050 | | 0.0050 | mg/L | | 31-OCT-11 | R2279010 |
| Nickel (Ni)-Total | 0.0112 | | 0.0020 | mg/L | | 31-OCT-11 | R2279010 |
| Selenium (Se)-Total | <0.00040 | | 0.00040 | mg/L | | 31-OCT-11 | R2279010 |
| Silver (Ag)-Total | <0.00010 | | 0.00010 | mg/L | | 31-OCT-11 | R2279010 |
| Thallium (Tl)-Total | <0.00010 | | 0.00010 | mg/L | | 31-OCT-11 | R2279010 |
| Tin (Sn)-Total | <0.050 | | 0.050 | mg/L | | 31-OCT-11 | R2279010 |
| Titanium (Ti)-Total | <0.0010 | | 0.0010 | mg/L | | 03-NOV-11 | R2280781 |
| Uranium (U)-Total | <0.00010 | | 0.00010 | mg/L | | 31-OCT-11 | R2279010 |
| Vanadium (V)-Total | <0.0010 | | 0.0010 | mg/L | | 31-OCT-11 | R2279010 |
| Zinc (Zn)-Total | 0.0088 | | 0.0040 | mg/L | | 31-OCT-11 | R2279010 |
| **Total Metals in Water by ICPOES (Low)** | | | | | | | |
| Calcium (Ca)-Total | 30.0 | | 0.50 | mg/L | | 01-NOV-11 | R2279164 |
| Iron (Fe)-Total | 0.486 | | 0.010 | mg/L | | 01-NOV-11 | R2279164 |
| Magnesium (Mg)-Total | 6.44 | | 0.10 | mg/L | | 01-NOV-11 | R2279164 |
| Manganese (Mn)-Total | 0.0667 | | 0.0020 | mg/L | | 01-NOV-11 | R2279164 |
| Potassium (K)-Total | 3.24 | | 0.10 | mg/L | | 01-NOV-11 | R2279164 |
| Sodium (Na)-Total | 20.0 | | 1.0 | mg/L | | 01-NOV-11 | R2279164 |
| **Miscellaneous Parameters** | | | | | | | |
| Alkalinity, Total (as CaCO3) | 12.8 | | 5.0 | mg/L | | 31-OCT-11 | R2277365 |
| Ammonia (as N) | <0.050 | | 0.050 | mg/L | | 01-NOV-11 | R2279111 |
| Oil and Grease | <1.0 | | 1.0 | mg/L | | 08-NOV-11 | R2283023 |
| Cyanide, Total | <0.0050 | | 0.0050 | mg/L | 08-NOV-11 | 09-NOV-11 | R2283656 |
| Total Suspended Solids | <3.0 | | 3.0 | mg/L | | 01-NOV-11 | R2279261 |
| **BTEX and F1 (C6-C10)** | | | | | | | |
| Benzene | <0.00050 | | 0.00050 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| Toluene | <0.00050 | | 0.00050 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| Ethylbenzene | <0.00050 | | 0.00050 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| o-Xylene | <0.00050 | | 0.00050 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| m+p-Xylene | <0.00050 | | 0.00050 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| F1(C6-C10) | <0.10 | | 0.10 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| F1-BTEX | <0.10 | | 0.10 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| Xylenes | <0.00071 | | 0.00071 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| **Total Nitrogen** | | | | | | | |
| **Nitrate as N by IC** | | | | | | | |
| Nitrate (as N) | <0.050 | | 0.050 | mg/L | | 31-OCT-11 | R2278614 |
| **Nitrate+Nitrite** | | | | | | | |
| Nitrate and Nitrite (as N) | <0.071 | | 0.071 | mg/L | | 01-NOV-11 | |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L1078407-2 LSL-2011-10-24 | | | | | | | |
| Sampled By: CLIENT on 24-OCT-11 | | | | | | | |
| Matrix: SURFACE WATER | | | | | | | |
| **Nitrite as N by IC** | | | | | | | |
| Nitrite (as N) | <0.050 | | 0.050 | mg/L | | 31-OCT-11 | R2278614 |
| **TKN in Water by Colour** | | | | | | | |
| Total Kjeldahl Nitrogen | 0.30 | | 0.20 | mg/L | 04-NOV-11 | 04-NOV-11 | R2281279 |
| **Total Nitrogen (Calculation)** | | | | | | | |
| Total Nitrogen | 0.30 | | 0.21 | mg/L | | 04-NOV-11 | |
| L1078407-3 USL-2011-10-24 | | | | | | | |
| Sampled By: CLIENT on 24-OCT-11 | | | | | | | |
| Matrix: SURFACE WATER | | | | | | | |
| **Total Metals - CCME** | | | | | | | |
| **Mercury (Hg) - Total** | | | | | | | |
| Mercury (Hg)-Total | <0.00010 | | 0.00010 | mg/L | | 15-NOV-11 | R2286706 |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | |
| Aluminum (Al)-Total | 0.064 | | 0.010 | mg/L | | 14-NOV-11 | R2286082 |
| Antimony (Sb)-Total | <0.00040 | | 0.00040 | mg/L | | 14-NOV-11 | R2286082 |
| Arsenic (As)-Total | 0.00872 | | 0.00040 | mg/L | | 14-NOV-11 | R2286082 |
| Barium (Ba)-Total | 0.0177 | | 0.0030 | mg/L | | 14-NOV-11 | R2286082 |
| Beryllium (Be)-Total | <0.0010 | | 0.0010 | mg/L | | 14-NOV-11 | R2286082 |
| Boron (B)-Total | <0.050 | | 0.050 | mg/L | | 14-NOV-11 | R2286082 |
| Cadmium (Cd)-Total | <0.000050 | | 0.000050 | mg/L | | 14-NOV-11 | R2286082 |
| Chromium (Cr)-Total | <0.0050 | | 0.0050 | mg/L | | 14-NOV-11 | R2286082 |
| Cobalt (Co)-Total | 0.0025 | | 0.0020 | mg/L | | 14-NOV-11 | R2286082 |
| Copper (Cu)-Total | 0.0033 | | 0.0010 | mg/L | | 14-NOV-11 | R2286082 |
| Lead (Pb)-Total | 0.00017 | | 0.00010 | mg/L | | 14-NOV-11 | R2286082 |
| Lithium (Li)-Total | <0.010 | | 0.010 | mg/L | | 14-NOV-11 | R2286082 |
| Molybdenum (Mo)-Total | <0.0050 | | 0.0050 | mg/L | | 14-NOV-11 | R2286082 |
| Nickel (Ni)-Total | 0.0165 | | 0.0020 | mg/L | | 14-NOV-11 | R2286082 |
| Selenium (Se)-Total | <0.00040 | | 0.00040 | mg/L | | 14-NOV-11 | R2286082 |
| Silver (Ag)-Total | <0.00010 | | 0.00010 | mg/L | | 14-NOV-11 | R2286082 |
| Thallium (Tl)-Total | <0.00010 | | 0.00010 | mg/L | | 14-NOV-11 | R2286082 |
| Tin (Sn)-Total | <0.050 | | 0.050 | mg/L | | 14-NOV-11 | R2286082 |
| Titanium (Ti)-Total | <0.0010 | | 0.0010 | mg/L | | 14-NOV-11 | R2286082 |
| Uranium (U)-Total | <0.00010 | | 0.00010 | mg/L | | 14-NOV-11 | R2286082 |
| Vanadium (V)-Total | <0.0010 | | 0.0010 | mg/L | | 14-NOV-11 | R2286082 |
| Zinc (Zn)-Total | 0.0142 | | 0.0040 | mg/L | | 14-NOV-11 | R2286082 |
| **Total Metals in Water by ICPOES (Low)** | | | | | | | |
| Calcium (Ca)-Total | 20.5 | | 0.50 | mg/L | | 04-NOV-11 | R2281608 |
| Iron (Fe)-Total | 0.261 | | 0.010 | mg/L | | 04-NOV-11 | R2281608 |
| Magnesium (Mg)-Total | 5.87 | | 0.10 | mg/L | | 04-NOV-11 | R2281608 |
| Manganese (Mn)-Total | 0.0368 | | 0.0020 | mg/L | | 04-NOV-11 | R2281608 |
| Potassium (K)-Total | 2.42 | | 0.10 | mg/L | | 04-NOV-11 | R2281608 |
| Sodium (Na)-Total | 7.7 | | 1.0 | mg/L | | 04-NOV-11 | R2281608 |
| **Miscellaneous Parameters** | | | | | | | |
| Ammonia (as N) | 0.056 | | 0.050 | mg/L | | 01-NOV-11 | R2279111 |
| **BTEX and F1 (C6-C10)** | | | | | | | |
| Benzene | <0.00050 | | 0.00050 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| Toluene | <0.00050 | | 0.00050 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| Ethylbenzene | <0.00050 | | 0.00050 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| o-Xylene | <0.00050 | | 0.00050 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| m+p-Xylene | <0.00050 | | 0.00050 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| F1(C6-C10) | <0.10 | | 0.10 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| F1-BTEX | <0.10 | | 0.10 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L1078407-3 USL-2011-10-24 | | | | | | | |
| Sampled By: CLIENT on 24-OCT-11 | | | | | | | |
| Matrix: SURFACE WATER | | | | | | | |
| **BTEX and F1 (C6-C10)** | | | | | | | |
| Xylenes | <0.00071 | | 0.00071 | mg/L | 30-OCT-11 | 30-OCT-11 | R2277861 |
| L1078407-4 LUP-01-2011-10-26 | | | | | | | |
| Sampled By: CLIENT on 28-OCT-11 @ 11:00 | | | | | | | |
| Matrix: SURFACE WATER | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Fecal Coliforms | <1 | | 1 | CFU/100mL | | 28-OCT-11 | R2278290 |
| L1078407-5 LSL-2011-10-26 | | | | | | | |
| Sampled By: CLIENT on 28-OCT-11 @ 11:20 | | | | | | | |
| Matrix: SURFACE WATER | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Biochemical Oxygen Demand | <2.0 | | 2.0 | mg/L | | 30-OCT-11 | R2281186 |
| Orthophosphate-Dissolved (as P) | <0.010 | | 0.010 | mg/L | | 31-OCT-11 | R2279020 |
| Fecal Coliforms | <1 | | 1 | CFU/100mL | | 28-OCT-11 | R2278290 |
| Nitrate and Nitrite (as N) | 0.0546 | | 0.0060 | mg/L | | 31-OCT-11 | R2278698 |
| Phosphorus (P)-Total | <0.020 | | 0.020 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282726 |
| pH | 7.00 | | 0.10 | pH | | 31-OCT-11 | R2277365 |
| **F2, F3, F4** | | | | | | | |
| F2 (>C10-C16) | <0.25 | | 0.25 | mg/L | 01-NOV-11 | 01-NOV-11 | R2280196 |
| F3 (C16-C34) | <0.25 | | 0.25 | mg/L | 01-NOV-11 | 01-NOV-11 | R2280196 |
| F4 (C34-C50) | <0.25 | | 0.25 | mg/L | 01-NOV-11 | 01-NOV-11 | R2280196 |
| L1078407-6 USL-2011-10-26 | | | | | | | |
| Sampled By: CLIENT on 28-OCT-11 @ 11:40 | | | | | | | |
| Matrix: SURFACE WATER | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Biochemical Oxygen Demand | <2.0 | | 2.0 | mg/L | | 30-OCT-11 | R2281186 |
| Fecal Coliforms | 7 | | 1 | CFU/100mL | | 28-OCT-11 | R2278290 |
| pH | 7.00 | | 0.10 | pH | | 31-OCT-11 | R2277365 |
| **F2, F3, F4** | | | | | | | |
| F2 (>C10-C16) | <0.25 | | 0.25 | mg/L | 01-NOV-11 | 01-NOV-11 | R2280196 |
| F3 (C16-C34) | <0.25 | | 0.25 | mg/L | 01-NOV-11 | 01-NOV-11 | R2280196 |
| F4 (C34-C50) | <0.25 | | 0.25 | mg/L | 01-NOV-11 | 01-NOV-11 | R2280196 |
| L1078407-7 KITCHEN-2011-10-26 | | | | | | | |
| Sampled By: CLIENT on 28-OCT-11 @ 12:00 | | | | | | | |
| Matrix: WATER | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Fecal Coliforms | <1 | | 1 | CFU/100mL | | 28-OCT-11 | R2278290 |
| L1078407-8 HOUSE-2011-10-26 | | | | | | | |
| Sampled By: CLIENT on 28-OCT-11 @ 10:00 | | | | | | | |
| Matrix: WATER | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Fecal Coliforms | <1 | | 1 | CFU/100mL | | 28-OCT-11 | R2278290 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# Reference Information

## Qualifiers for Individual Samples Listed:

| Sample Numbe | Client ID | Qualifier | Description |
|---|---|---|---|
| L1078407-5 | LSL-2011-10-26 | SP | TP - Sample was Preserved at the laboratory |

## Test Method References:

| ALS Test Code | Matrix | Test Description | Method Reference** |
|---|---|---|---|
| ALK-TOT-ED | Water | Alkalinity, Total | APHA 2320 B-Auto-Pot. Titration |
| BOD-ED | Water | Biochemical Oxygen Demand (BOD) | APHA 5210 B-5 day Incub.-O2 electrode |
| BTX,F1-ED | Water | BTEX and F1 (C6-C10) | EPA 5021/8015&8260 GC-MS & FID |
| CN-T-MID-HH-COL-VA | Water | Total Cyanide by HH Distillation | APHA 4500-CN Cyanide |
| This analysis is carried out using procedures adapted from APHA Method 4500-CN "Cyanide". Total or strong acid dissociable (SAD) cyanide are determined by sample distillation and analysis using the chloramine-T colourimetric method. | | | |
| ETL-HARDNESS-DIS-ED | Water | Hardness (from Dissolved Ca and Mg) | APHA 2340 B-Calculation |
| F2,F3,F4-ED | Water | F2, F3, F4 | EPA 3510/CCME PHC CWS-GC-FID |
| FC-MF-YL | Water | Fecal Coliform | APHA 9222D |
| HG-T-CVAA-ED | Water | Mercury (Hg) - Total | EPA 245.7 / EPA 245.1 |
| MET-D-ICP-ED | Water | Dissolved Metals in Water by ICPOES | APHA 3120 B-ICP-OES |
| MET-T-L-ICP-ED | Water | Total Metals in Water by ICPOES (Low) | APHA 3120 B-ICP-OES |
| MET-T-L-MS-ED | Water | Total Metals in Water by ICPMS (Low) | SW 846 - 6020-ICPMS |
| N-T-CALC-ED | Water | Total Nitrogen (Calculation) | APHA 4500 N-Calculated |
| Total Nitrogen is a calculated parameter. Total Nitrogen = Total Kjeldahl Nitrogen + [Nitrate and Nitrite (as N)] | | | |
| NH3-CFA-ED | Water | Ammonia in Water by Colour | APHA 4500 NH3-NITROGEN (AMMONIA) |
| This analysis is carried out using procedures adapted from APHA Method 4500 NH3 "NITROGEN (AMMONIA)". Ammonia is determined using the automated phenate colourimetric method. | | | |
| NO2+NO3-CALC-ED | Water | Nitrate+Nitrite | CALCULATION |
| NO2+NO3-L-CFA-ED | Water | Nitrite & Nitrate in Water by Colour | APHA 4500 NO3-F |
| This analysis is carried out using procedures adapted from APHA Method 4500 NO3-F "Automated Cadmium Reduction Method". | | | |
| NO2-IC-ED | Water | Nitrite as N by IC | APHA 4110 B-ION CHROMATOGRAPHY |
| NO3-IC-ED | Water | Nitrate as N by IC | APHA 4110 B-ION CHROMATOGRAPHY |
| OGG-ED | Water | Oil and Grease-Gravimetric | APHA 5520 G HEXANE MTBE EXT. GRAVIME |
| P-T-COL-ED | Water | Total P in Water by Colour | APHA 4500-P PHOSPHORUS |
| This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample. | | | |
| PH-ED | Water | pH | APHA 4500 H-Electrode |
| All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed) | | | |
| PO4-DO-COL-ED | Water | Diss. Orthophosphate in Water by Colour | APHA 4500-P PHOSPHORUS |
| This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. | | | |
| SOLIDS-TOTSUS-ED | Water | Total Suspended Solids | APHA 2540 D-Gravimetric |
| TKN-CFA-ED | Water | TKN in Water by Colour | APHA 4500-NORG (TKN) |
| This analysis is carried out using procedures adapted from APHA Method 4500-Norg "Nitrogen (Organic)". Total Kjeldahl Nitrogen is determined by sample digestion at 380 celcius with analysis using an automated colourimetric finish. | | | |

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location |
|---|---|
| ED | ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA |

# Reference Information

**Test Method References:**

| ALS Test Code | Matrix | Test Description | Method Reference** |
|---|---|---|---|
| VA | | ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA | |
| YL | | ALS ENVIRONMENTAL - YELLOWKNIFE, NW, CANADA | |

**Chain of Custody Numbers:**

1 of 1

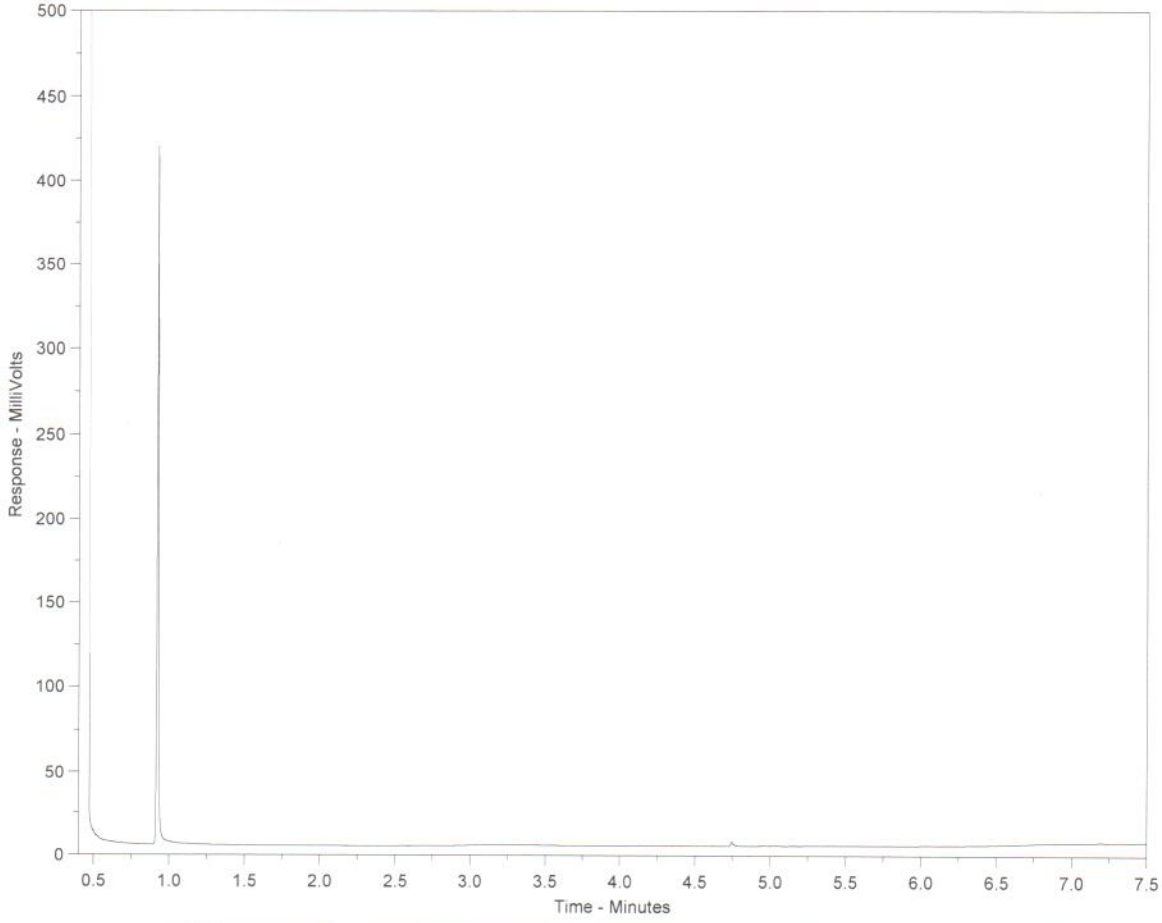
**GLOSSARY OF REPORT TERMS**

*Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.*
*mg/kg - milligrams per kilogram based on dry weight of sample*
*mg/kg wwt - milligrams per kilogram based on wet weight of sample*
*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight*
*mg/L - unit of concentration based on volume, parts per million.*
*< - Less than.*
*D.L. - The reporting limit.*
*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*
*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*
*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

# Hydrocarbon Distribution Report

**ALS Sample ID:** L1078407-5
**Client ID:** LSL-2011-10-26




<-nC10----------C11----------nC16----------C30--nC34----------nC50->
<----------Gasoline----------> <----------Heavy Oils---------->
|----------Diesel----------|

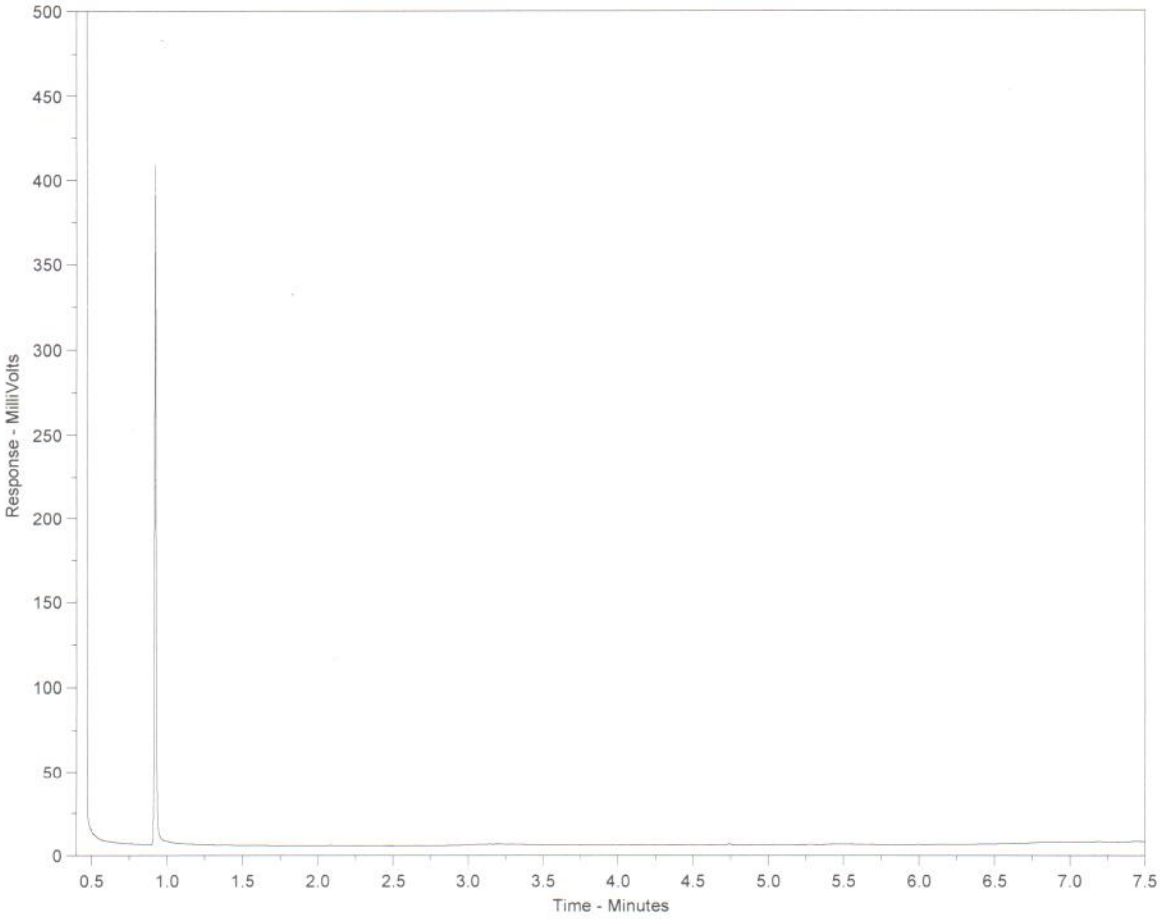
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (December 2007 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

# Hydrocarbon Distribution Report

**ALS Sample ID:** L1078407-6
**Client ID:** USL-2011-10-26




<-nC10----------C11----------nC16----------C30--nC34----------nC50->
<----------Gasoline----------> <----------Heavy Oils---------->
|----------Diesel----------|

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (December 2007 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

SRK CONSULTING
ATTN: Arlene Laudrum
Suite 202, 5204 - 50th Avenue
Yellowknife NT X1A 1E2

Date Received: 06-NOV-11
Report Date: 15-NOV-11 08:50 (MT)
Version: FINAL

Client Phone: 867-873-8670

# Certificate of Analysis

**Lab Work Order #: L1081603**
Project P.O. #: NOT SUBMITTED
Job Reference: 1CE15.000
C of C Numbers: 20111105
Legal Site Desc:

JUDY BETHUNE
Supervisor

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L1081603-1 LSL-2011-11-05 | | | | | | | |
| Sampled By: TOM COLLETT on 05-NOV-11 @ 14:30 | | | | | | | |
| Matrix: 1 | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Oil and Grease | <1.0 | | 1.0 | mg/L | | 09-NOV-11 | R2284281 |
| **BTEX and F1 (C6-C10)** | | | | | | | |
| Benzene | <0.00050 | | 0.00050 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| Toluene | <0.00050 | | 0.00050 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| Ethylbenzene | <0.00050 | | 0.00050 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| o-Xylene | <0.00050 | | 0.00050 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| m+p-Xylene | <0.00050 | | 0.00050 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| F1(C6-C10) | <0.10 | | 0.10 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| F1-BTEX | <0.10 | | 0.10 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| Xylenes | <0.00071 | | 0.00071 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| L1081603-2 USL-2011-11-05 | | | | | | | |
| Sampled By: TOM COLLETT on 05-NOV-11 @ 14:45 | | | | | | | |
| Matrix: 1 | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Oil and Grease | <1.0 | | 1.0 | mg/L | | 09-NOV-11 | R2284281 |
| **BTEX and F1 (C6-C10)** | | | | | | | |
| Benzene | <0.00050 | | 0.00050 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| Toluene | <0.00050 | | 0.00050 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| Ethylbenzene | <0.00050 | | 0.00050 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| o-Xylene | <0.00050 | | 0.00050 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| m+p-Xylene | <0.00050 | | 0.00050 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| F1(C6-C10) | <0.10 | | 0.10 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| F1-BTEX | <0.10 | | 0.10 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |
| Xylenes | <0.00071 | | 0.00071 | mg/L | 07-NOV-11 | 07-NOV-11 | R2282340 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# Reference Information

**Test Method References:**

| ALS Test Code | Matrix | Test Description | Method Reference** |
|---|---|---|---|
| BTX,F1-ED | Water | BTEX and F1 (C6-C10) | EPA 5021/8015&8260 GC-MS & FID |
| OGG-ED | Water | Oil and Grease-Gravimetric | APHA 5520 G HEXANE MTBE EXT. GRAVIME |

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location |
|---|---|
| ED | ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA |

**Chain of Custody Numbers:**

20111105

**GLOSSARY OF REPORT TERMS**

*Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.*
*mg/kg - milligrams per kilogram based on dry weight of sample*
*mg/kg wwt - milligrams per kilogram based on wet weight of sample*
*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight*
*mg/L - unit of concentration based on volume, parts per million.*
*< - Less than.*
*D.L. - The reporting limit.*
*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*
*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*
*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

ALS Environmental

**Chain of Custody / Analytical Request Form**
**Canada Toll Free: 1 800 668 9878**
www.alsglobal.com

COC # 20111105

Page 1 of 1

| Report To | | | | Report Format / Distribution | | | | Service Requested (Rush for routine analysis subject to availability) |
|---|---|---|---|---|---|---|---|---|
| Company: | SRK Consulting | | | ☑ Standard ☐ Other | | | | ◉ Regular (Standard Turnaround Times - Business Days) |
| Contact: | Arlene Laudrum | | | ☑ PDF ☑ Excel ☐ Digital ☐ Fax | | | | ○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT |
| Address: | 5204 - 50th Avenue, Suite 202 | | | Email 1: alaudrum@srk.com | | | | ○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT |
| | Yellowknife, NT | | | Email 2: lupinoperations@gmail.com | | | | ○ Same Day or Weekend Emergency - Contact ALS to Confirm TAT |
| Phone: | 867-766-6332 | Fax: | 866-380-3458 | Email 3: | | | | |
| Invoice To | Same as Report ? ☐ Yes | ☑ No | | Client / Project Information | | | | Analysis Request |
| Hardcopy of Invoice with Report? | ☐ Yes | ☑ No | | Job #: 1CE015.000 | | | | Please indicate below Filtered, Preserved or both (F, P, F/P) |
| Company: | SRK Consulting | | | PO / AFE: | | | | |
| Contact: | Matthew Lai | | | LSD: | | | | |
| Address: | 2200 - 1066 W Hastings St, Vancouver, V6E 3X2 | | | account 13041 | | | | |
| Phone: | 604-681-4196 | Fax: | 604-687-5532 | Quote #: | | | | |
| Lab Work Order # (lab use only) | L1081603 | | | ALS Contact: | Sampler: | Tom Collett | | |

| Sample # | Sample Identification (This description will appear on the report) | Date (dd-mmm-yy) | Time (hh:mm) | Sample Type | BETX P | Oil and Grease P | Number of Containers |
|---|---|---|---|---|---|---|---|
| | LSL-2011-11-05 | 05-Nov-11 | 1430 hrs. | Surface Water | X | X | 4 |
| | USL-2011-11-05 | 05-Nov-11 | 1445 hrs. | Surface Water | X | X | 4 |

*L1081603-COFC*

**Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details**

CCME - FWAL, there is an extra bottle for F2-F4 collected Oct 24 - it's a spare if needed.

**Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.**

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.

**Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.**

| SHIPMENT RELEASE (client use) | | | SHIPMENT RECEPTION (lab use only) | | | | SHIPMENT VERIFICATION (lab use only) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Released by: | Date (dd-mmm-yy) | Time (hh-mm) | Received by: | Date: | Time: | Temperature: | Verified by: | Date: | Time: | Observations: Yes / No ? If Yes add SIF |
| Tom Collett | 5-Nov-11 | 1600 hrs. | | 6-Nov-11 | 10:45 | 3.1 °C | | | | |

GENF 18.01 Front