LUPIN MINES INCORPORATED

March 31, 2015

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

By email (phyllis.beaulieu@nwb-oen.ca)

Re: 2014 Annual Report: Lupin Mine Type A Water Licence (2AM-LUP0914).

Dear Ms. Beaulieu,

Lupin Mines Incorporated (LMI) is pleased to submit the attached 2014 Annual Report for the Lupin Mine in accordance with Type A water licence 2AM-LUP0914 Part B, Item 2.

Please note that there was only limited Project activity in 2014 for on-going care and maintenance of facilities. The attached information summary addresses the 2014 annual reporting requirements. A water licence renewal application was submitted by LMI to the Nunavut Water Board on February 28, 2014.

Should you have any questions please contact the undersigned.

Yours truly,

"Karyn Lewis"

Karyn Lewis
Executive Assistant

Executive Summary – English

Lupin Mine 2014 Summary of Activities

Lupin Mines Incorporated (LMI) has submitted the 2014 Annual Report to the Nunavut Water Board for the Lupin Mine in accordance with Type A water licence 2AM-LUP0914 Part B, Item 2.

The Lupin Mine site was in a state of care and maintenance throughout the 2014 reporting period. The mine was occupied periodically between March and October with camp occupancy numbers ranging from 2 to 12 people on site. During the months when camp was not occupied day trips were carried out each month to ensure the site was safe and environmental risks remained minimal.

A total of 18 m^3 of water was used for domestic purposes in 2014, and 15.9 m^3 of sewage and greywater were transferred to the Upper Sewage Lake. Approximately 112,000 m^3 was discharged from the Lower Sewage Pond to the receiving environment in 2014 between September 15th to 18th, 2014.

Care and maintenance activities carried out in 2014 included routine inspection of facilities, water sampling, site water management, road maintenance, fuel tank management, and annual geotechnical inspection. While the site is currently unoccupied, LMI carries out routine site visits to ensure the site is in good condition particularly during the freshet period. More detailed information is available in the monthly monitoring reports provided to the Nunavut Water Board and posted on the public registry.

LMI submitted a water licence renewal application to the Nunavut Water Board on February 28, 2014.

A Pre-Hearing Conference, a Technical Session, and a Community Information Session were held in Kugluktuk, NU on October 22-23, 2014 hosted by the Nunavut Water Board to facilitate the water licencing renewal process. A Public Hearing and Community Information Session were held in Kugluktuk, NU on February 4-5, 2015 hosted by the Nunavut Water Board in regards to the water licencing renewal process. The NWB closed the file on the water licence renewal on March 13th, 2015 and advised Lupin Mines they would have a decision within the next 30-45 days.

Lupin Mine Type A Water Licence Part B, Item 2 Annual Reporting Requirements

a) The monthly and annual quantities in cubic metres of water pumped from Contwoyto Lake at Station Number LUP-01:

The following quantities of water were withdrawn from Contwoyto Lake in 2014 for domestic purposes:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Water use (m^3)	0	0	0	18.0	0	0	0	0	0	0	0	0	18.0

b) The monthly and annual quantities in cubic metres of treated Tailings effluent discharged at Station Number LUP-10:

No Tailings effluent discharge in 2014.

c) The monthly and annual quantities in cubic metres of Minewater discharged at Station Number LUP-11:

Not applicable given the care and maintenance status in 2014.

d) The monthly and annual quantities in cubic metres of treated Sewage effluent discharged at Station Number LUP-14:

There was approx. 112,000m^3 discharged from the Lower Sewage Lake between September 15th to 18th, 2014 as directed by the AANDC Water Resource Officer. LMI submitted a report from SRK Consulting showing that the water requiring discharge from the Lagoon was in compliance with parameters established in the licence. On July 3rd, Lupin Mines applied for an emergency amendment to discharge from the sewage lagoon, as the water licence was expired. On September 8th, Lupin Mines received a Direction from the Inspection to discharge from the Sewage Lagoon. LMI did not have authorization to discharge prior to the receipt of this direction. The water level was brought down to a safe level. On October 6, 2014, Lupin Mines received the Emergency Amendment from the Minister.

e) Tabular summaries of all data generated under the "Monitoring Program":

The mine site was not active in 2014. However, water sampling was carried out in June at locations where water had accumulated within bermed areas that required dewatering.

The sampling results in tabular format were reported in the June monthly report and are included in Appendix A.

f) A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector:

Environment Canada Inspector was at site on September 16th to inspect the fuel storage areas and Tailings Containment Area.

Water Resource Inspector was at site on July 15, 2014 to complete a site visit. On August 17, 2014 the Water Resource Inspector conducted an opportunistic visit to site. There was extension discussions/correspondence from July 2014 to February 2015 between the Inspector and Lupin to address the Inspectors concerns as well as during our water licence renewal process. Correspondence is located on the NWB ftp site under Inspections (included in Appendix B, attached) as well as Submissions and Hearing for the 2014 water licence renewal. A couple of items requested to be included in the Annual Report are as follows:

The small tears in the liner of the main tank farm (caused by Caribou) where repaired and recovered in September 2014 as requested.

As discussed during the water licence renewal process an updated list of the hazardous waste on site will be provided to the Inspector once site is accessed during 2015 and will not be included in this annual report.

g) A summary of modification and/or major maintenance work carried out on the water supply and the waste disposal facilities, including all associated structures:

No major work was carried out in 2014 on water or waste disposal facilities.

A 2014 Sewage Pond Dam Geotechnical Inspection and the Addendum Memo 2014 Lupin Fuel Tank Farm Inspection were submitted on November 3, 2014 (see attached Appendix C).

h) A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken:

There were no unauthorized discharges in 2014.

An update to Spill Report 12-306 was reported and submitted on March 30, 2015.

i) Where applicable, revisions as Addendums, with an indication of where changes have been made, for Plans, Reports, and Manuals:

As discussed and confirmed during the water licence renewal process, LMI will submit updates to applicable management plans following the timelines to be included in the renewed water licence to ensure they include the recommendations of the NWB.

j) For Care and Maintenance, provide an updated status of any progressive reclamation as it relates to tailings cover remediation and justification for not proceeding to full reclamation under Part I, Item 5:

LMI continues to monitor the global economic climate and evaluate the feasibility of operating the Lupin mine along with the potential for identifying additional resources through its exploration activities. In the interim, the site remains in care and maintenance and a decision with respect to Part I, Item 5 was not contemplated in 2014.

k) A summary of public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events and information sessions:

A Pre-Hearing Conference, a Technical Session, and a Community Information Session were held in Kugluktuk, NU on October 22nd and 23rd hosted by the Nunavut Water Board to facilitate the water licencing renewal process.

A Public Hearing and Community Information Session were held in Kugluktuk, NU on February 4-5, 2015 hosted by the Nunavut Water Board in regards to the water licencing renewal process.

l) A summary of any abandonment and reclamation work completed during the year and an outline of any work anticipated for the next year:

Progressive reclamation activities during 2014 consist of the following:

a. Tank located across from the mechanics shop. It was removed and decommissioned in 2014 and is stored in the boneyard.
b. Tank M-23, 6,000 litre capacity, EC #00018378. Removed from service in 2013, decommissioned in 2014 and is stored in the yard.
c. Tank MTF-1, 2,307 litre capacity. Removed from service in 2012, decommissioned in 2014 and is stored in the Boneyard.
d. Tank IND-7, 2,307 litre capacity. Removed from service in 2012, decommissioned in 2014 and is stored in the Boneyard.

e. Tank IND-08, 1,186 litre capacity, previously used as incinerator day tank. Removed from service in 2013, decommissioned in 2014 and is stored in the Boneyard.
f. Volcano boiler tank, 5,000 litre capacity. Removed and decommissioned in August 2014 and is stored in the boneyard.
g. Piping between Main Tank Farm and Satellite Tank Farm. Removed from service and decommissioned in 2014 and is stored in the boneyard.
h. Piping between Satellite Tank Farm and Powerhouse. Removed from service and decommissioned in 2014 and is stored in the boneyard.
i. Piping from Waste Oil Tank Farm to Powerhouse. Removed from service and decommissioned in 2014 and is stored in the boneyard.

m) An updated assessment of the current mine reclamation liability using the most current version of RECLAIM as required by Part I, Item 3:

An updated cost estimate, converted in RECLAIM, was updated and submitted during the water licence renewal process. Extension discussion/correspondence between AANDC and Lupin Mines occurred during the water licence renewal process. Documentation is located on the NWB ftp site.

n) Any other details on water use or waste disposal requested by the Board by November 1st of the year being reported:

The Nunavut Water Board did not request additional information for the 2014 reporting period. The 2014 Geotechnical Inspection Report was submitted to the Board on October 21, 2014 (see attached Appendix C).

Appendix A

June 2014 Monthly Monitoring Report with Water Sample Results

Lupin Mines Incorporated

(a subsidiary of Elgin Mining Inc.)

29 July 2014

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 June 2014
Lupin Mine, Nunavut, License Number 2AM-LUP0914

Activities on site during the month of June involved care and maintenance only. There were no people staying on site throughout the month.

A site inspection was conducted on June 17, 2014 by Arlene Laudrum and George Friesen. See attached memo from SRK for details. A critical item to note is the very high level of water in the Lower Sewage Pond. If sufficient volume of water is not released during the present open water season the water level will likely overtop the dam during freshet next year.

There was no domestic water used, no sewage produced, and no domestic waste generated during the month.

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

Sincerely,
Lupin Mines Incorporated.

George Friesen
Manager of Technical Services

CC: Patrick Downey, CEO of Elgin Mining Inc.

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T: +1.867.873.8670

yellowknife@srk.com
www.srk.com

Memo

To:	Patrick Downey, Lupin Mines Incorporated		
From:	Arlene Laudrum	**Project No:**	1CL008.000
Cc:	George Friesen, Lupin Mines Incorporated	**Date:**	July 17, 2014
Subject:	Results of Lupin Mine site visit conducted June 17, 2014		

On June 17, 2014 Arlene Laudrum of SRK Consulting Inc. accompanied George Friesen of Lupin Mines Incorporated during an inspection of the Lupin Mine site.

1 Lupin Dams Inspection

The inspection consisted of a visual inspection of the tailings containment areas. Freeboard on the dams and their physical conditions were observed. The freeboard of the dams was measured using a level and telescopic rod. Results are reported in Table 1.

Table 1: June 17, 2014 Freeboard at Tailings Containment Area

Location	Freeboard (m)
Dam 1A	3.07
Dam 2	2.99
Dam 6	3.44

With the exception of an erosion channel across the road on Dam 3 no changes to the physical nature of the dams were observed when compared with those observed during the October 8, 2013 inspection. The erosion channel on the roadway is approximately 15 m closer to the constructed drainage channel on the dam than the channel that eroded across the road in the spring of 2012. A water quality sample was collected from Boomerang Lake adjacent to the erosion channel (BOOM-140617). No anomalous results were detected. The Certificate of Analysis is attached to this memo. It is recommended that a geotechnical engineer be retained to investigate and develop a mitigation plan for reoccurring erosion issue at this location.

2 Lupin Sewage Lakes Inspection

The water level in both the upper and lower sewage lakes was high at the time of the inspection. Water was observed flowing from the upper sewage lake through a culvert installed in the internal dam into the lower sewage lake. The freeboard on the lower sewage lake dam was 0.5 metres. It is SRK's opinion that there is insufficient freeboard to allow for the 2015 spring freshet to be

contained within the lower sewage lake. The water quality results for the water held in the lower sewage lake meet the discharge effluent limits of Water Licence No: 2AM-LUP0914 as listed in Table 2. It is recommended that approval be obtained to discharge this water to the environment in 2014.

Table 2: Water quality results for water in the Lower Sewage Lake

Monitoring Station		**LUP-14 (sewage discharge)**	
Sample No.		Lup-14-140617	
Sample Date		17-Jun-14	
Analyte	**Units**	**Effluent Limit**	**Result**
Field Conductivity	µs/cm		135
Field pH	pH	6.0 - 9.5	6.68
pH	pH	6.0 - 9.5	6.33
Hardness (as CaCO3)	mg/L		39.5
Total Suspended Solids	mg/L	35	<3.0
Alkalinity, Total (as CaCO3)	mg/L		6.4
Ammonia, Total (as N)	mg/L		<0.050
Biochemical Oxygen Demand	mg/L	30	<2.0
Oil and Grease	mg/L	visual sheen	1.2
Nitrate and Nitrite (as N)	mg/L		<0.054
Nitrate (as N)	mg/L		<0.050
Nitrite (as N)	mg/L		<0.020
Total Kjeldahl Nitrogen	mg/L		0.28
Total Nitrogen	mg/L		0.28
Orthophosphate-Dissolved (as P)	mg/L		<0.010
Phosphorus (P)-Total	mg/L		0.038
Fecal Coliforms	cfu/100ml	1000	2
Aluminum (Al)-Total	mg/L		0.067
Antimony (Sb)-Total	mg/L		<0.00040
Arsenic (As)-Total	mg/L	0.05	0.00625
Barium (Ba)-Total	mg/L		0.0071
Beryllium (Be)-Total	mg/L		<0.0010
Boron (B)-Total	mg/L		<0.050
Cadmium (Cd)-Total	mg/L		<0.000050
Calcium (Ca)-Total	mg/L		11.3
Chromium (Cr)-Total	mg/L		<0.0050
Cobalt (Co)-Total	mg/L		<0.0020
Copper (Cu)-Total	mg/L	0.20	0.0014
Iron (Fe)-Total	mg/L		0.232
Lead (Pb)-Total	mg/L	0.05	<0.00010
Lithium (Li)-Total	mg/L		0.01
Magnesium (Mg)-Total	mg/L		2.71

Monitoring Station		LUP-14 (sewage discharge)	
Sample No.		Lup-14-140617	
Sample Date		17-Jun-14	
Analyte	**Units**	**Effluent Limit**	**Result**
Manganese (Mn)-Total	mg/L		0.0401
Mercury (Hg)-Total	mg/L		<0.00010
Molybdenum (Mo)-Total	mg/L		<0.0050
Nickel (Ni)-Total	mg/L	0.30	0.0055
Phosphorus-Total	mg/L		1.5
Selenium (Se)-Total	mg/L		<0.00040
Silver (Ag)-Total	mg/L		<0.00010
Sodium (Na)-Total	mg/L		7.5
Thallium (Tl)-Total	mg/L		<0.00010
Tin (Sn)-Total	mg/L		<0.050
Titanium (Ti)-Total	mg/L		<0.0010
Uranium (U)-Total	mg/L		<0.00010
Vanadium (V)-Total	mg/L		<0.0010
Zinc (Zn)-Total	mg/L	0.50	<0.0040

It is estimated that at least 150,000 m^3 of water must be discharged in order to allow room for the 2015 spring freshet influx.

3 Lupin Fuel Tank Containment Areas Inspection

George Friesen completed the inspection of the fuel tank areas while SRK collected samples of water ponded within the secondary containment areas. Water quality results are reported in Table 3. Water ponded within the main tank farm facility meets the discharge limits. The field pH exceeded the discharge limits in the Satellite Tank Farm. Total lead exceeded the discharge limit in the Waste Oil Tank Farm and toluene exceeded the discharge limit in the third party drum storage area.

It is estimated that 3,000 m^3 of water must be discharged in 2014 to maintain the secondary containment areas in a dry condition. It is recommended that approval be obtained to discharge water that meets the limits established in Water Licence No. 2AM-LUP0914 to the environment from the main tank farm in 2014 and that water accumulating in the other containment areas be collected in drums and stored for future treatment and disposal.

Table 3: Water quality results for ponded within tank farm secondary containments.

Monitoring Station				LUP-27 (main bulk fuel storage facility)		Satellite Tank Farm	Waste Oil Tank Farm	Third Party Drum Storage
Sample No.				LUP-27-140617	JetTF-140617	STF-140617	WOTF-140617	TPDS-140617
Sample Date				17-Jun-14		17-Jun-14	17-Jun-14	17-Jun-14
Analyte	**Units**	**Max Avg Limit**	**Max Grab Limit**	**Result**	**Result**	**Result**	**Result**	**Result**
Field Conductivity	µs/cm			35	161.6	33	5.71	82
Field pH	pH	6.0 - 9.0		6.8	6.68	**5.75**	6.9	6.32
pH	pH	6.0 - 9.0		7.11	6.27	6.23	6.6	6.36
Total Suspended Solids	mg/L	15	30	<3.0	<3.0	3.4	<3.0	<3.0
Ammonia, Total (as N)	mg/L	2.0	4.0	<0.050	<0.050	0.052	<0.050	0.102
Oil and Grease	mg/L	5.0	10	1.2	<1.0	4.3	1.3	<1.0
Lead (Pb)-Total	mg/L	0.01	0.02	0.0134	0.000172	0.00211	**0.0141**	0.000368
Benzene	mg/L	0.37		<0.00050	<0.00050	<0.00050	<0.00050	0.00097
Ethylbenzene	mg/L	0.09		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Toluene	mg/L	0.002		<0.00050	<0.00050	<0.00050	<0.00050	**0.00413**
o-Xylene	mg/L			<0.00050	<0.00050	<0.00050	<0.00050	0.00051
m+p-Xylene	mg/L			<0.00050	<0.00050	<0.00050	<0.00050	0.00105
Xylenes	mg/L			<0.00071	<0.00071	<0.00071	<0.00071	0.00157
F1(C6-C10)	mg/L			<0.10	<0.10	<0.10	<0.10	<0.10
F1-BTEX	mg/L			<0.10	<0.10	<0.10	<0.10	<0.10

Attachment: ALS Laboratory Certificate of Analysis L1472416

LUPIN MINES INCORPORATED
ATTN: G. Friesen
1204 - 700 W Pender St
Vancouver BC V6C 1G4

Date Received: 17-JUN-14
Report Date: 16-JUL-14 10:35 (MT)
Version: FINAL REV. 2

Client Phone: 867-873-8670

Certificate of Analysis

Lab Work Order #: L1472416

Project P.O. #: NOT SUBMITTED
Job Reference: LUPIN
C of C Numbers: 1
Legal Site Desc:

Comments:

16-JUL-2014 Revised report - contact, address and L1472416-2 OGG result amended.

Rick Zolkiewski
General Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1472416-1 LUP-01-140617							
Sampled By: AL on 17-JUN-14 @ 13:20							
Matrix: Water							
Total Metals - CCME							
Mercury (Hg) - Total							
Mercury (Hg)-Total	<0.00010		0.00010	mg/L		02-JUL-14	R2877137
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.029		0.010	mg/L		24-JUN-14	R2871907
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		24-JUN-14	R2871907
Arsenic (As)-Total	0.00061		0.00040	mg/L		24-JUN-14	R2871907
Barium (Ba)-Total	0.0053		0.0030	mg/L		24-JUN-14	R2871907
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907
Boron (B)-Total	<0.050		0.050	mg/L		24-JUN-14	R2871907
Cadmium (Cd)-Total	<0.000050		0.000050	mg/L		24-JUN-14	R2871907
Calcium (Ca)-Total	2.07		0.50	mg/L		24-JUN-14	R2871907
Chromium (Cr)-Total	<0.0050		0.0050	mg/L		24-JUN-14	R2871907
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		24-JUN-14	R2871907
Copper (Cu)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907
Iron (Fe)-Total	0.030		0.010	mg/L		24-JUN-14	R2871907
Lead (Pb)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Lithium (Li)-Total	<0.010		0.010	mg/L		24-JUN-14	R2871907
Magnesium (Mg)-Total	1.05		0.10	mg/L		24-JUN-14	R2871907
Manganese (Mn)-Total	0.0066		0.0020	mg/L		24-JUN-14	R2871907
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		24-JUN-14	R2871907
Nickel (Ni)-Total	0.0041		0.0020	mg/L		24-JUN-14	R2871907
Potassium (K)-Total	0.37		0.10	mg/L		24-JUN-14	R2871907
Selenium (Se)-Total	<0.00040		0.00040	mg/L		24-JUN-14	R2871907
Silver (Ag)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Sodium (Na)-Total	<1.0		1.0	mg/L		24-JUN-14	R2871907
Thallium (Tl)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Tin (Sn)-Total	<0.050		0.050	mg/L		24-JUN-14	R2871907
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907
Uranium (U)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Vanadium (V)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907
Zinc (Zn)-Total	0.0046		0.0040	mg/L		24-JUN-14	R2871907
Miscellaneous Parameters							
Fecal Coliforms	<1		1	CFU/100mL		18-JUN-14	R2868637
Hardness (as CaCO3)	9.5			mg/L		25-JUN-14	
Total Suspended Solids	<3.0		3.0	mg/L		20-JUN-14	R2869951
pH	7.48		0.10	pH		21-JUN-14	R2869996
L1472416-2 LUP-14-140617							
Sampled By: AL on 17-JUN-14 @ 15:30							
Matrix: Water							
Total Metals - CCME							
Mercury (Hg) - Total							
Mercury (Hg)-Total	<0.00010		0.00010	mg/L		02-JUL-14	R2877137
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.067		0.010	mg/L		23-JUN-14	R2870918
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		23-JUN-14	R2870918
Arsenic (As)-Total	0.00625		0.00040	mg/L		23-JUN-14	R2870918
Barium (Ba)-Total	0.0071		0.0030	mg/L		23-JUN-14	R2870918
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		23-JUN-14	R2870918
Boron (B)-Total	<0.050		0.050	mg/L		23-JUN-14	R2870918
Cadmium (Cd)-Total	<0.000050		0.000050	mg/L		23-JUN-14	R2870918
Calcium (Ca)-Total	11.3		0.50	mg/L		23-JUN-14	R2870918

* 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
L1472416-2 LUP-14-140617							
Sampled By: AL on 17-JUN-14 @ 15:30							
Matrix: Water							
Total Metals in Water by CRC ICPMS							
Chromium (Cr)-Total	<0.0050		0.0050	mg/L		23-JUN-14	R2870918
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		23-JUN-14	R2870918
Copper (Cu)-Total	0.0014		0.0010	mg/L		23-JUN-14	R2870918
Iron (Fe)-Total	0.232		0.010	mg/L		23-JUN-14	R2870918
Lead (Pb)-Total	<0.00010		0.00010	mg/L		23-JUN-14	R2870918
Lithium (Li)-Total	0.010		0.010	mg/L		23-JUN-14	R2870918
Magnesium (Mg)-Total	2.71		0.10	mg/L		23-JUN-14	R2870918
Manganese (Mn)-Total	0.0401		0.0020	mg/L		23-JUN-14	R2870918
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		23-JUN-14	R2870918
Nickel (Ni)-Total	0.0055		0.0020	mg/L		23-JUN-14	R2870918
Potassium (K)-Total	1.50		0.10	mg/L		23-JUN-14	R2870918
Selenium (Se)-Total	<0.00040		0.00040	mg/L		23-JUN-14	R2870918
Silver (Ag)-Total	<0.00010		0.00010	mg/L		23-JUN-14	R2870918
Sodium (Na)-Total	7.5		1.0	mg/L		23-JUN-14	R2870918
Thallium (Tl)-Total	<0.00010		0.00010	mg/L		23-JUN-14	R2870918
Tin (Sn)-Total	<0.050		0.050	mg/L		23-JUN-14	R2870918
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		23-JUN-14	R2870918
Uranium (U)-Total	<0.00010		0.00010	mg/L		23-JUN-14	R2870918
Vanadium (V)-Total	<0.0010		0.0010	mg/L		23-JUN-14	R2870918
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		23-JUN-14	R2870918
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	6.4		2.0	mg/L		21-JUN-14	R2869996
Ammonia, Total (as N)	<0.050		0.050	mg/L		03-JUL-14	R2877776
Biochemical Oxygen Demand	<2.0		2.0	mg/L		19-JUN-14	R2871636
Orthophosphate-Dissolved (as P)	<0.010		0.010	mg/L		19-JUN-14	R2868732
Fecal Coliforms	2		1	CFU/100mL		18-JUN-14	R2868637
Hardness (as CaCO3)	39.5			mg/L		23-JUN-14	
Nitrate and Nitrite (as N)	<0.0060		0.0060	mg/L		20-JUN-14	R2870510
Oil and Grease	<4	DLIS	4.0	mg/L		02-JUL-14	R2877220
Phosphorus (P)-Total	0.038		0.020	mg/L	29-JUN-14	30-JUN-14	R2876215
Total Suspended Solids	<3.0		3.0	mg/L		20-JUN-14	R2869951
pH	6.33		0.10	pH		21-JUN-14	R2869996
Total Nitrogen							
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		25-JUN-14	R2873912
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.054		0.054	mg/L		30-JUN-14	
Nitrite as N by IC							
Nitrite (as N)	<0.020		0.020	mg/L		25-JUN-14	R2873912
TKN in Water by Colour							
Total Kjeldahl Nitrogen	0.28		0.20	mg/L	03-JUL-14	04-JUL-14	R2878976
Total Nitrogen (Calculation)							
Total Nitrogen	0.28		0.20	mg/L		04-JUL-14	
L1472416-3 LUP-27-140617							
Sampled By: AL on 17-JUN-14 @ 14:15							
Matrix: Water							
Single Metal in Water by ICPMS (Total)							
Total Metals in Water by CRC ICPMS							
Lead (Pb)-Total	0.0134		0.000050	mg/L		23-JUN-14	R2870918
Miscellaneous Parameters							

* 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
L1472416-3 LUP-27-140617							
Sampled By: AL on 17-JUN-14 @ 14:15							
Matrix: Water							
Ammonia, Total (as N)	<0.050		0.050	mg/L		03-JUL-14	R2877776
Oil and Grease	1.2		1.0	mg/L		02-JUL-14	R2877220
Total Suspended Solids	<3.0		3.0	mg/L		20-JUN-14	R2869951
pH	7.11		0.10	pH		21-JUN-14	R2869996
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
Toluene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
Ethylbenzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
o-Xylene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
m+p-Xylene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
F1(C6-C10)	<0.10		0.10	mg/L		25-JUN-14	R2871312
F1-BTEX	<0.10		0.10	mg/L		25-JUN-14	R2871312
Xylenes	<0.00071		0.00071	mg/L		25-JUN-14	R2871312
Surrogate: 1,4-Difluorobenzene (SS)	99.5		70-130	%		25-JUN-14	R2871312
Surrogate: 4-Bromofluorobenzene (SS)	91.9		70-130	%		25-JUN-14	R2871312
Surrogate: 3,4-Dichlorotoluene (SS)	99.0		70-130	%		25-JUN-14	R2871312
L1472416-4 LUP-00-140617							
Sampled By: AL on 17-JUN-14 @ 14:30							
Matrix: Water							
Single Metal in Water by ICPMS (Total)							
Total Metals in Water by CRC ICPMS							
Lead (Pb)-Total	0.0135		0.000050	mg/L		23-JUN-14	R2870918
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		03-JUL-14	R2877776
Oil and Grease	<1.0		1.0	mg/L		02-JUL-14	R2877220
Total Suspended Solids	<3.0		3.0	mg/L		20-JUN-14	R2869951
pH	6.91		0.10	pH		21-JUN-14	R2869996
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
Toluene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
Ethylbenzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
o-Xylene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
m+p-Xylene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
F1(C6-C10)	<0.10		0.10	mg/L		25-JUN-14	R2871312
F1-BTEX	<0.10		0.10	mg/L		25-JUN-14	R2871312
Xylenes	<0.00071		0.00071	mg/L		25-JUN-14	R2871312
Surrogate: 1,4-Difluorobenzene (SS)	98.7		70-130	%		25-JUN-14	R2871312
Surrogate: 4-Bromofluorobenzene (SS)	90.0		70-130	%		25-JUN-14	R2871312
Surrogate: 3,4-Dichlorotoluene (SS)	97.9		70-130	%		25-JUN-14	R2871312
L1472416-5 TRAVEL BLANK-140617							
Sampled By: AL on 17-JUN-14 @ 12:00							
Matrix: Water							
Total Metals - CCME							
Mercury (Hg) - Total							
Mercury (Hg)-Total	<0.00010		0.00010	mg/L		02-JUL-14	R2877137
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	<0.010		0.010	mg/L		24-JUN-14	R2871907
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		24-JUN-14	R2871907
Arsenic (As)-Total	<0.00040		0.00040	mg/L		24-JUN-14	R2871907
Barium (Ba)-Total	<0.0030		0.0030	mg/L		24-JUN-14	R2871907
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907

* 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
L1472416-5 TRAVEL BLANK-140617							
Sampled By: AL on 17-JUN-14 @ 12:00							
Matrix: Water							
Total Metals in Water by CRC ICPMS							
Boron (B)-Total	<0.050		0.050	mg/L		24-JUN-14	R2871907
Cadmium (Cd)-Total	<0.000050		0.000050	mg/L		24-JUN-14	R2871907
Calcium (Ca)-Total	<0.50		0.50	mg/L		24-JUN-14	R2871907
Chromium (Cr)-Total	<0.0050		0.0050	mg/L		24-JUN-14	R2871907
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		24-JUN-14	R2871907
Copper (Cu)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907
Iron (Fe)-Total	<0.010		0.010	mg/L		24-JUN-14	R2871907
Lead (Pb)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Lithium (Li)-Total	<0.010		0.010	mg/L		24-JUN-14	R2871907
Magnesium (Mg)-Total	<0.10		0.10	mg/L		24-JUN-14	R2871907
Manganese (Mn)-Total	<0.0020		0.0020	mg/L		24-JUN-14	R2871907
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		24-JUN-14	R2871907
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		24-JUN-14	R2871907
Potassium (K)-Total	<0.10		0.10	mg/L		24-JUN-14	R2871907
Selenium (Se)-Total	<0.00040		0.00040	mg/L		24-JUN-14	R2871907
Silver (Ag)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Sodium (Na)-Total	<1.0		1.0	mg/L		24-JUN-14	R2871907
Thallium (Tl)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Tin (Sn)-Total	<0.050		0.050	mg/L		24-JUN-14	R2871907
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907
Uranium (U)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Vanadium (V)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		24-JUN-14	R2871907
Miscellaneous Parameters							
Fecal Coliforms	<1		1	CFU/100mL		18-JUN-14	R2868637
Hardness (as CaCO3)	<1.3			mg/L		25-JUN-14	
L1472416-6 STF-140617							
Sampled By: AL on 17-JUN-14 @ 16:15							
Matrix: Water							
Single Metal in Water by ICPMS (Total)							
Total Metals in Water by CRC ICPMS							
Lead (Pb)-Total	0.00211		0.000050	mg/L		23-JUN-14	R2870918
Miscellaneous Parameters							
Ammonia, Total (as N)	0.052		0.050	mg/L		03-JUL-14	R2877776
Oil and Grease	4.3		1.0	mg/L		02-JUL-14	R2877220
Total Suspended Solids	3.4		3.0	mg/L		20-JUN-14	R2869951
pH	6.23		0.10	pH		21-JUN-14	R2869996
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
Toluene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
Ethylbenzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
o-Xylene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
m+p-Xylene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
F1(C6-C10)	<0.10		0.10	mg/L		25-JUN-14	R2871312
F1-BTEX	<0.10		0.10	mg/L		25-JUN-14	R2871312
Xylenes	<0.00071		0.00071	mg/L		25-JUN-14	R2871312
Surrogate: 1,4-Difluorobenzene (SS)	100.3		70-130	%		25-JUN-14	R2871312
Surrogate: 4-Bromofluorobenzene (SS)	86.5		70-130	%		25-JUN-14	R2871312
Surrogate: 3,4-Dichlorotoluene (SS)	96.8		70-130	%		25-JUN-14	R2871312

* 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
L1472416-7 JETTF-140617							
Sampled By: AL on 17-JUN-14 @ 14:30							
Matrix: Water							
Single Metal in Water by ICPMS (Total)							
Total Metals in Water by CRC ICPMS							
Lead (Pb)-Total	0.000172		0.000050	mg/L		24-JUN-14	R2871907
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		03-JUL-14	R2877776
Oil and Grease	<1.0		1.0	mg/L		02-JUL-14	R2877220
Total Suspended Solids	<3.0		3.0	mg/L		20-JUN-14	R2869951
pH	6.27		0.10	pH		21-JUN-14	R2869996
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
Toluene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
Ethylbenzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
o-Xylene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
m+p-Xylene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
F1(C6-C10)	<0.10		0.10	mg/L		25-JUN-14	R2871312
F1-BTEX	<0.10		0.10	mg/L		25-JUN-14	R2871312
Xylenes	<0.00071		0.00071	mg/L		25-JUN-14	R2871312
Surrogate: 1,4-Difluorobenzene (SS)	102.5		70-130	%		25-JUN-14	R2871312
Surrogate: 4-Bromofluorobenzene (SS)	82.4		70-130	%		25-JUN-14	R2871312
Surrogate: 3,4-Dichlorotoluene (SS)	98.6		70-130	%		25-JUN-14	R2871312
L1472416-8 WOTF-140617							
Sampled By: AL on 17-JUN-14 @ 14:55							
Matrix: Water							
Single Metal in Water by ICPMS (Total)							
Total Metals in Water by CRC ICPMS							
Lead (Pb)-Total	0.0141		0.000050	mg/L		23-JUN-14	R2870918
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		03-JUL-14	R2877776
Oil and Grease	1.3		1.0	mg/L		02-JUL-14	R2877220
Total Suspended Solids	<3.0		3.0	mg/L		20-JUN-14	R2869951
pH	6.60		0.10	pH		21-JUN-14	R2869996
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
Toluene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
Ethylbenzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
o-Xylene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
m+p-Xylene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
F1(C6-C10)	<0.10		0.10	mg/L		25-JUN-14	R2871312
F1-BTEX	<0.10		0.10	mg/L		25-JUN-14	R2871312
Xylenes	<0.00071		0.00071	mg/L		25-JUN-14	R2871312
Surrogate: 1,4-Difluorobenzene (SS)	101.0		70-130	%		25-JUN-14	R2871312
Surrogate: 4-Bromofluorobenzene (SS)	82.4		70-130	%		25-JUN-14	R2871312
Surrogate: 3,4-Dichlorotoluene (SS)	98.5		70-130	%		25-JUN-14	R2871312
L1472416-9 TPDS-140617							
Sampled By: AL on 17-JUN-14 @ 13:45							
Matrix: Water							
Single Metal in Water by ICPMS (Total)							
Total Metals in Water by CRC ICPMS							
Lead (Pb)-Total	0.000368		0.000050	mg/L		24-JUN-14	R2871907
Miscellaneous Parameters							
Ammonia, Total (as N)	0.102		0.050	mg/L		03-JUL-14	R2877776

* 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
L1472416-9 TPDS-140617							
Sampled By: AL on 17-JUN-14 @ 13:45							
Matrix: Water							
Oil and Grease	<1.0		1.0	mg/L		02-JUL-14	R2877220
Total Suspended Solids	<3.0		3.0	mg/L		20-JUN-14	R2869951
pH	6.36		0.10	pH		21-JUN-14	R2869996
BTEX and F1 (C6-C10)							
Benzene	0.00097		0.00050	mg/L		25-JUN-14	R2871312
Toluene	0.00413		0.00050	mg/L		25-JUN-14	R2871312
Ethylbenzene	<0.00050		0.00050	mg/L		25-JUN-14	R2871312
o-Xylene	0.00051		0.00050	mg/L		25-JUN-14	R2871312
m+p-Xylene	0.00105		0.00050	mg/L		25-JUN-14	R2871312
F1(C6-C10)	<0.10		0.10	mg/L		25-JUN-14	R2871312
F1-BTEX	<0.10		0.10	mg/L		25-JUN-14	R2871312
Xylenes	0.00157		0.00071	mg/L		25-JUN-14	R2871312
Surrogate: 1,4-Difluorobenzene (SS)	99.8		70-130	%		25-JUN-14	R2871312
Surrogate: 4-Bromofluorobenzene (SS)	82.6		70-130	%		25-JUN-14	R2871312
Surrogate: 3,4-Dichlorotoluene (SS)	101.3		70-130	%		25-JUN-14	R2871312
L1472416-10 BOOM-140617							
Sampled By: AL on 17-JUN-14 @ 10:50							
Matrix: Water							
Total Metals - CCME							
Mercury (Hg) - Total							
Mercury (Hg)-Total	<0.00010		0.00010	mg/L		02-JUL-14	R2877137
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.046		0.010	mg/L		24-JUN-14	R2871907
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		24-JUN-14	R2871907
Arsenic (As)-Total	0.00367		0.00040	mg/L		24-JUN-14	R2871907
Barium (Ba)-Total	0.0074		0.0030	mg/L		24-JUN-14	R2871907
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907
Boron (B)-Total	<0.050		0.050	mg/L		24-JUN-14	R2871907
Cadmium (Cd)-Total	<0.000050		0.000050	mg/L		24-JUN-14	R2871907
Calcium (Ca)-Total	3.96		0.50	mg/L		24-JUN-14	R2871907
Chromium (Cr)-Total	<0.0050		0.0050	mg/L		24-JUN-14	R2871907
Cobalt (Co)-Total	0.0022		0.0020	mg/L		24-JUN-14	R2871907
Copper (Cu)-Total	0.0020		0.0010	mg/L		24-JUN-14	R2871907
Iron (Fe)-Total	0.136		0.010	mg/L		24-JUN-14	R2871907
Lead (Pb)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Lithium (Li)-Total	<0.010		0.010	mg/L		24-JUN-14	R2871907
Magnesium (Mg)-Total	1.81		0.10	mg/L		24-JUN-14	R2871907
Manganese (Mn)-Total	0.0458		0.0020	mg/L		24-JUN-14	R2871907
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		24-JUN-14	R2871907
Nickel (Ni)-Total	0.0133		0.0020	mg/L		24-JUN-14	R2871907
Potassium (K)-Total	0.65		0.10	mg/L		24-JUN-14	R2871907
Selenium (Se)-Total	<0.00040		0.00040	mg/L		24-JUN-14	R2871907
Silver (Ag)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Sodium (Na)-Total	<1.0		1.0	mg/L		24-JUN-14	R2871907
Thallium (Tl)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Tin (Sn)-Total	<0.050		0.050	mg/L		24-JUN-14	R2871907
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907
Uranium (U)-Total	<0.00010		0.00010	mg/L		24-JUN-14	R2871907
Vanadium (V)-Total	<0.0010		0.0010	mg/L		24-JUN-14	R2871907
Zinc (Zn)-Total	0.0089		0.0040	mg/L		24-JUN-14	R2871907
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	2.5	RRV	2.0	mg/L		21-JUN-14	R2869996

* 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
L1472416-10 BOOM-140617							
Sampled By: AL on 17-JUN-14 @ 10:50							
Matrix: Water							
Hardness (as CaCO3)	17.3			mg/L		25-JUN-14	
Total Suspended Solids	<3.0		3.0	mg/L		20-JUN-14	R2869951
pH	5.70	RRV	0.10	pH		21-JUN-14	R2869996

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLIS	Detection Limit Adjusted: Insufficient Sample
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-ED	Water	Alkalinity, T	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
ETL-HARDNESS-TOT-ED	Water	Hardness (from Total Ca and Mg)	APHA 2340 B-Calculation
FC-MF-YL	Water	Fecal Coliform	APHA 9222D
HG-T-CVAA-ED	Water	Mercury (Hg) - Total	EPA 245.7 / EPA 245.1
MET-T-CCMS-ED	Water	Total Metals in Water by CRC ICPMS	APHA 3030 B&E / EPA SW-846 6020A
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
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
NO3-IC-ED	Water	Nitrate as N by IC	APHA 4110 B-ION CHROMATOGRAPHY
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
OGG-LLE-ED	Water	Oil and Grease-Gra	APHA 5520 B 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
YL	ALS ENVIRONMENTAL -YELLOWKNIFE, NORTHWEST TERRITORIES CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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.

Quality Control Report

Workorder: L1472416 Report Date: 16-JUL-14

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TOT-ED	**Water**							
Batch R2869996								
WG1896557-14 LCS								
Alkalinity, Total (as CaCO3)			104.0		%		85-115	21-JUN-14
WG1896557-19 LCS								
Alkalinity, Total (as CaCO3)			103.7		%		85-115	21-JUN-14
WG1896557-24 LCS								
Alkalinity, Total (as CaCO3)			103.8		%		85-115	21-JUN-14
WG1896557-29 LCS								
Alkalinity, Total (as CaCO3)			103.9		%		85-115	22-JUN-14
WG1896557-4 LCS								
Alkalinity, Total (as CaCO3)			103.1		%		85-115	21-JUN-14
WG1896557-1 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	21-JUN-14
WG1896557-11 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	21-JUN-14
WG1896557-16 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	21-JUN-14
WG1896557-21 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	21-JUN-14
WG1896557-26 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	22-JUN-14
BOD-ED	**Water**							
Batch R2871636								
WG1894906-4 DUP		**L1472543-1**						
Biochemical Oxygen Demand		3.3	3.7		mg/L	11	20	19-JUN-14
WG1894906-5 DUP		**L1473603-1**						
Biochemical Oxygen Demand		<2.0	<2.0	RPD-NA	mg/L	N/A	20	19-JUN-14
WG1894906-2 LCS								
Biochemical Oxygen Demand			87.9		%		85-115	19-JUN-14
WG1894906-1 MB								
Biochemical Oxygen Demand			<2.0		mg/L		2	19-JUN-14
BTX,F1-ED	**Water**							
Batch R2871312								
WG1898441-4 DUP		**L1474336-4**						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	24-JUN-14
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	24-JUN-14
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	24-JUN-14
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	24	24-JUN-14

Quality Control Report

Workorder: L1472416 Report Date: 16-JUL-14

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4

Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX,F1-ED	**Water**							
Batch R2871312								
WG1898441-4 DUP		**L1474336-4**						
m+p-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	24	24-JUN-14
F1(C6-C10)		<0.10	<0.10	RPD-NA	mg/L	N/A	30	24-JUN-14
WG1898441-8 DUP		**L1475499-5**						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	24-JUN-14
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	24-JUN-14
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	24-JUN-14
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	24	24-JUN-14
m+p-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	24	24-JUN-14
F1(C6-C10)		<0.10	<0.10	RPD-NA	mg/L	N/A	30	24-JUN-14
WG1898441-2 LCS								
Benzene			96.7		%		70-130	24-JUN-14
Toluene			84.1		%		70-130	24-JUN-14
Ethylbenzene			82.9		%		70-130	24-JUN-14
o-Xylene			83.5		%		70-130	24-JUN-14
m+p-Xylene			80.6		%		70-130	24-JUN-14
WG1898441-3 LCS								
F1(C6-C10)			89.6		%		70-130	24-JUN-14
WG1898441-6 LCS								
Benzene			83.4		%		70-130	24-JUN-14
Toluene			74.6		%		70-130	24-JUN-14
Ethylbenzene			71.0		%		70-130	24-JUN-14
o-Xylene			73.4		%		70-130	24-JUN-14
m+p-Xylene			71.1		%		70-130	24-JUN-14
WG1898441-7 LCS								
F1(C6-C10)			81.5		%		70-130	24-JUN-14
WG1898441-1 MB								
Benzene			<0.00050		mg/L		0.0005	24-JUN-14
Toluene			<0.00050		mg/L		0.0005	24-JUN-14
Ethylbenzene			<0.00050		mg/L		0.0005	24-JUN-14
o-Xylene			<0.00050		mg/L		0.0005	24-JUN-14
m+p-Xylene			<0.00050		mg/L		0.0005	24-JUN-14
F1(C6-C10)			<0.10		mg/L		0.1	24-JUN-14
Surrogate: 1,4-Difluorobenzene (SS)			101.0		%		70-130	24-JUN-14
Surrogate: 4-Bromofluorobenzene (SS)			82.0		%		70-130	24-JUN-14
							70-130	

Quality Control Report

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX,F1-ED	**Water**							
Batch R2871312								
WG1898441-1 MB								
Surrogate: 3,4-Dichlorotoluene (SS)			102.0		%		70-130	24-JUN-14
WG1898441-5 MB								
Benzene			<0.00050		mg/L		0.0005	24-JUN-14
Toluene			<0.00050		mg/L		0.0005	24-JUN-14
Ethylbenzene			<0.00050		mg/L		0.0005	24-JUN-14
o-Xylene			<0.00050		mg/L		0.0005	24-JUN-14
m+p-Xylene			<0.00050		mg/L		0.0005	24-JUN-14
F1(C6-C10)			<0.10		mg/L		0.1	24-JUN-14
Surrogate: 1,4-Difluorobenzene (SS)			100.0		%		70-130	24-JUN-14
Surrogate: 4-Bromofluorobenzene (SS)			79.0		%		70-130	24-JUN-14
Surrogate: 3,4-Dichlorotoluene (SS)			94.0		%		70-130	24-JUN-14
FC-MF-YL	**Water**							
Batch R2868637								
WG1895401-2 DUP		**L1472416-5**						
Fecal Coliforms		<1	<1	RPD-NA	CFU/100mL	N/A	50	18-JUN-14
WG1895401-1 MB								
Fecal Coliforms			<1		CFU/100mL		1	18-JUN-14
HG-T-CVAA-ED	**Water**							
Batch R2877137								
WG1902992-3 DUP		**L1472416-1**						
Mercury (Hg)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-JUL-14
WG1902992-2 LCS								
Mercury (Hg)-Total			92.4		%		80-120	02-JUL-14
WG1902992-1 MB								
Mercury (Hg)-Total			<0.00010		mg/L		0.0001	02-JUL-14
WG1902992-4 MS		**L1472416-1**						
Mercury (Hg)-Total			100.8		%		70-130	02-JUL-14
MET-T-CCMS-ED	**Water**							
Batch R2870918								
WG1896827-3 DUP		**L1472416-3**						
Aluminum (Al)-Total		0.0280	0.0276		mg/L	1.3	20	23-JUN-14
Antimony (Sb)-Total		0.00181	0.00189		mg/L	4.3	20	23-JUN-14
Arsenic (As)-Total		0.0201	0.0203		mg/L	0.7	20	23-JUN-14
Barium (Ba)-Total		0.00215	0.00213		mg/L	1.1	20	23-JUN-14
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	23-JUN-14

Quality Control Report

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-ED	**Water**							
Batch R2870918								
WG1896827-3 DUP		**L1472416-3**						
Boron (B)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	23-JUN-14
Cadmium (Cd)-Total		0.000020	0.000021		mg/L	4.0	20	23-JUN-14
Calcium (Ca)-Total		3.37	3.54		mg/L	5.0	20	23-JUN-14
Chromium (Cr)-Total		0.00138	0.00141		mg/L	2.1	20	23-JUN-14
Cobalt (Co)-Total		0.00024	0.00023		mg/L	1.1	20	23-JUN-14
Copper (Cu)-Total		0.00541	0.00547		mg/L	1.1	20	23-JUN-14
Iron (Fe)-Total		0.467	0.462		mg/L	1.1	20	23-JUN-14
Lead (Pb)-Total		0.0134	0.0137		mg/L	2.4	20	23-JUN-14
Lithium (Li)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	23-JUN-14
Magnesium (Mg)-Total		0.619	0.619		mg/L	0.1	20	23-JUN-14
Manganese (Mn)-Total		0.0128	0.0128		mg/L	0.3	20	23-JUN-14
Molybdenum (Mo)-Total		0.000625	0.000641		mg/L	2.4	20	23-JUN-14
Nickel (Ni)-Total		0.00323	0.00331		mg/L	2.7	20	23-JUN-14
Potassium (K)-Total		1.16	1.17		mg/L	0.8	20	23-JUN-14
Selenium (Se)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	23-JUN-14
Silver (Ag)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	23-JUN-14
Sodium (Na)-Total		0.376	0.387		mg/L	2.9	20	23-JUN-14
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	23-JUN-14
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	23-JUN-14
Titanium (Ti)-Total		0.00107	0.00052	J	mg/L	0.00055	0.0006	23-JUN-14
Uranium (U)-Total		0.000098	0.000098		mg/L	0.1	20	23-JUN-14
Vanadium (V)-Total		0.00014	0.00015		mg/L	8.1	20	23-JUN-14
Zinc (Zn)-Total		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	23-JUN-14
WG1896827-2 LCS								
Aluminum (Al)-Total			101.7		%		80-120	23-JUN-14
Antimony (Sb)-Total			103.4		%		80-120	23-JUN-14
Arsenic (As)-Total			99.9		%		80-120	23-JUN-14
Barium (Ba)-Total			101.7		%		80-120	23-JUN-14
Beryllium (Be)-Total			101.5		%		80-120	23-JUN-14
Cadmium (Cd)-Total			102.5		%		80-120	23-JUN-14
Calcium (Ca)-Total			101.0		%		80-120	23-JUN-14
Chromium (Cr)-Total			101.7		%		80-120	23-JUN-14
Cobalt (Co)-Total			99.0		%		80-120	23-JUN-14

Quality Control Report

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-ED	**Water**							
Batch R2870918								
WG1896827-2 LCS								
Copper (Cu)-Total			98.0		%		80-120	23-JUN-14
Iron (Fe)-Total			96.3		%		80-120	23-JUN-14
Lead (Pb)-Total			100.3		%		80-120	23-JUN-14
Lithium (Li)-Total			102.9		%		80-120	23-JUN-14
Magnesium (Mg)-Total			101.4		%		80-120	23-JUN-14
Manganese (Mn)-Total			99.4		%		80-120	23-JUN-14
Nickel (Ni)-Total			99.6		%		80-120	23-JUN-14
Potassium (K)-Total			98.1		%		80-120	23-JUN-14
Selenium (Se)-Total			100.3		%		80-120	23-JUN-14
Silver (Ag)-Total			103.2		%		80-120	23-JUN-14
Sodium (Na)-Total			106.4		%		80-120	23-JUN-14
Thallium (Tl)-Total			104.8		%		80-120	23-JUN-14
Tin (Sn)-Total			101.1		%		80-120	23-JUN-14
Titanium (Ti)-Total			98.1		%		80-120	23-JUN-14
Uranium (U)-Total			93.3		%		80-120	23-JUN-14
Vanadium (V)-Total			101.5		%		80-120	23-JUN-14
Zinc (Zn)-Total			101.8		%		80-120	23-JUN-14
WG1896827-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	23-JUN-14
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	23-JUN-14
Arsenic (As)-Total			<0.00010		mg/L		0.0001	23-JUN-14
Barium (Ba)-Total			<0.000050		mg/L		0.00005	23-JUN-14
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	23-JUN-14
Boron (B)-Total			<0.010		mg/L		0.01	23-JUN-14
Cadmium (Cd)-Total			<0.000010		mg/L		0.00001	23-JUN-14
Calcium (Ca)-Total			<0.020		mg/L		0.02	23-JUN-14
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	23-JUN-14
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	23-JUN-14
Copper (Cu)-Total			<0.00010		mg/L		0.0001	23-JUN-14
Iron (Fe)-Total			<0.010		mg/L		0.01	23-JUN-14
Lead (Pb)-Total			<0.000050		mg/L		0.00005	23-JUN-14
Lithium (Li)-Total			<0.0050		mg/L		0.005	23-JUN-14
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	23-JUN-14
Manganese (Mn)-Total			<0.000050		mg/L		0.00005	23-JUN-14

Quality Control Report

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-ED	**Water**							
Batch R2870918								
WG1896827-1 MB								
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	23-JUN-14
Nickel (Ni)-Total			<0.00010		mg/L		0.0001	23-JUN-14
Potassium (K)-Total			<0.050		mg/L		0.05	23-JUN-14
Selenium (Se)-Total			<0.00010		mg/L		0.0001	23-JUN-14
Silver (Ag)-Total			<0.000010		mg/L		0.00001	23-JUN-14
Sodium (Na)-Total			<0.050		mg/L		0.05	23-JUN-14
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	23-JUN-14
Tin (Sn)-Total			<0.00010		mg/L		0.0001	23-JUN-14
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	23-JUN-14
Uranium (U)-Total			<0.000010		mg/L		0.00001	23-JUN-14
Vanadium (V)-Total			<0.00010		mg/L		0.0001	23-JUN-14
Zinc (Zn)-Total			<0.0030		mg/L		0.003	23-JUN-14
Batch R2871907								
WG1898280-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	24-JUN-14
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	24-JUN-14
Arsenic (As)-Total			<0.00010		mg/L		0.0001	24-JUN-14
Barium (Ba)-Total			<0.000050		mg/L		0.00005	24-JUN-14
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	24-JUN-14
Boron (B)-Total			<0.010		mg/L		0.01	24-JUN-14
Cadmium (Cd)-Total			<0.000010		mg/L		0.00001	24-JUN-14
Calcium (Ca)-Total			<0.020		mg/L		0.02	24-JUN-14
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	24-JUN-14
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	24-JUN-14
Copper (Cu)-Total			<0.00010		mg/L		0.0001	24-JUN-14
Iron (Fe)-Total			<0.010		mg/L		0.01	24-JUN-14
Lead (Pb)-Total			<0.000050		mg/L		0.00005	24-JUN-14
Lithium (Li)-Total			<0.0050		mg/L		0.005	24-JUN-14
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	24-JUN-14
Manganese (Mn)-Total			<0.000050		mg/L		0.00005	24-JUN-14
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	24-JUN-14
Nickel (Ni)-Total			<0.00010		mg/L		0.0001	24-JUN-14
Potassium (K)-Total			<0.050		mg/L		0.05	24-JUN-14
Selenium (Se)-Total			<0.00010		mg/L		0.0001	24-JUN-14

Quality Control Report

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-ED	**Water**							
Batch R2871907								
WG1898280-1 MB								
Silver (Ag)-Total			<0.000010		mg/L		0.00001	24-JUN-14
Sodium (Na)-Total			<0.050		mg/L		0.05	24-JUN-14
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	24-JUN-14
Tin (Sn)-Total			<0.00010		mg/L		0.0001	24-JUN-14
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	24-JUN-14
Uranium (U)-Total			<0.000010		mg/L		0.00001	24-JUN-14
Vanadium (V)-Total			<0.00010		mg/L		0.0001	24-JUN-14
Zinc (Zn)-Total			<0.0030		mg/L		0.003	24-JUN-14
NH3-CFA-ED	**Water**							
Batch R2877776								
WG1903334-6 DUP		**L1472416-9**						
Ammonia, Total (as N)		0.102	0.113		mg/L	10	20	03-JUL-14
WG1903334-7 DUP		**L1476830-2**						
Ammonia, Total (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	03-JUL-14
WG1903334-8 DUP		**L1479986-1**						
Ammonia, Total (as N)		2.08	2.08		mg/L	0.1	20	03-JUL-14
WG1903334-2 LCS								
Ammonia, Total (as N)			97.0		%		85-115	03-JUL-14
WG1903334-1 MB								
Ammonia, Total (as N)			<0.050		mg/L		0.05	03-JUL-14
WG1903334-5 MS		**L1475847-2**						
Ammonia, Total (as N)			95.8		%		75-125	03-JUL-14
WG1903334-9 MS		**L1476161-3**						
Ammonia, Total (as N)			103.5		%		75-125	03-JUL-14
NO2+NO3-L-CFA-ED	**Water**							
Batch R2870510								
WG1896350-3 DUP		**L1472448-21**						
Nitrate and Nitrite (as N)		<0.0060	<0.0060	RPD-NA	mg/L	N/A	20	20-JUN-14
WG1896350-2 LCS								
Nitrate and Nitrite (as N)			99.1		%		85-115	20-JUN-14
WG1896350-1 MB								
Nitrate and Nitrite (as N)			<0.0060		mg/L		0.006	20-JUN-14
WG1896350-4 MS		**L1472448-21**						
Nitrate and Nitrite (as N)			91.2		%		75-125	20-JUN-14
NO2-IC-ED	**Water**							

Quality Control Report

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO2-IC-ED	**Water**							
Batch R2873912								
WG1899407-13 DUP		**L1473766-7**						
Nitrite (as N)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	25-JUN-14
WG1899407-9 DUP		**L1473416-2**						
Nitrite (as N)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	25-JUN-14
WG1899407-11 LCS								
Nitrite (as N)			103.4		%		90-110	25-JUN-14
WG1899407-14 LCS								
Nitrite (as N)			106.6		%		90-110	25-JUN-14
WG1899407-17 LCS								
Nitrite (as N)			104.8		%		90-110	25-JUN-14
WG1899407-2 LCS								
Nitrite (as N)			94.1		%		90-110	25-JUN-14
WG1899407-3 LCS								
Nitrite (as N)			97.1		%		90-110	25-JUN-14
WG1899407-7 LCS								
Nitrite (as N)			109.0		%		90-110	25-JUN-14
WG1899407-1 MB								
Nitrite (as N)			<0.020		mg/L		0.02	25-JUN-14
WG1899407-12 MB								
Nitrite (as N)			<0.020		mg/L		0.02	25-JUN-14
WG1899407-15 MB								
Nitrite (as N)			<0.020		mg/L		0.02	25-JUN-14
WG1899407-18 MB								
Nitrite (as N)			<0.020		mg/L		0.02	25-JUN-14
WG1899407-4 MB								
Nitrite (as N)			<0.020		mg/L		0.02	25-JUN-14
WG1899407-8 MB								
Nitrite (as N)			<0.020		mg/L		0.02	25-JUN-14
WG1899407-10 MS		**L1473416-2**						
Nitrite (as N)			95.9		%		75-125	25-JUN-14
WG1899407-16 MS		**L1473766-7**						
Nitrite (as N)			100.1		%		75-125	25-JUN-14
NO3-IC-ED	**Water**							
Batch R2873912								
WG1899407-13 DUP		**L1473766-7**						
Nitrate (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	25-JUN-14
WG1899407-9 DUP		**L1473416-2**						
Nitrate (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	25-JUN-14

Quality Control Report

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-ED	**Water**							
Batch R2873912								
WG1899407-11 LCS								
Nitrate (as N)			102.7		%		90-110	25-JUN-14
WG1899407-14 LCS								
Nitrate (as N)			102.9		%		90-110	25-JUN-14
WG1899407-17 LCS								
Nitrate (as N)			102.2		%		90-110	25-JUN-14
WG1899407-2 LCS								
Nitrate (as N)			97.1		%		90-110	25-JUN-14
WG1899407-3 LCS								
Nitrate (as N)			100.6		%		90-110	25-JUN-14
WG1899407-7 LCS								
Nitrate (as N)			105.4		%		90-110	25-JUN-14
WG1899407-1 MB								
Nitrate (as N)			<0.050		mg/L		0.05	25-JUN-14
WG1899407-12 MB								
Nitrate (as N)			<0.050		mg/L		0.05	25-JUN-14
WG1899407-15 MB								
Nitrate (as N)			<0.050		mg/L		0.05	25-JUN-14
WG1899407-18 MB								
Nitrate (as N)			<0.050		mg/L		0.05	25-JUN-14
WG1899407-4 MB								
Nitrate (as N)			<0.050		mg/L		0.05	25-JUN-14
WG1899407-8 MB								
Nitrate (as N)			<0.050		mg/L		0.05	25-JUN-14
WG1899407-10 MS		**L1473416-2**						
Nitrate (as N)			105.0		%		75-125	25-JUN-14
WG1899407-16 MS		**L1473766-7**						
Nitrate (as N)			92.1		%		75-125	25-JUN-14
OGG-LLE-ED	**Water**							
Batch R2877220								
WG1902767-2 LCS								
Oil and Grease			79.0		%		70-130	02-JUL-14
WG1902767-1 MB								
Oil and Grease			<1.0		mg/L		1	02-JUL-14
P-T-COL-ED	**Water**							

Quality Control Report

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-ED	**Water**							
Batch R2876215								
WG1901708-11 DUP		**L1475711-2**						
Phosphorus (P)-Total		8.55	9.22		mg/L	7.5	20	30-JUN-14
WG1901708-13 DUP		**L1477249-3**						
Phosphorus (P)-Total		0.532	0.509		mg/L	4.4	20	30-JUN-14
WG1901708-5 DUP		**L1475270-2**						
Phosphorus (P)-Total		0.581	0.529		mg/L	9.3	20	30-JUN-14
WG1901708-7 DUP		**L1475363-2**						
Phosphorus (P)-Total		0.392	0.389		mg/L	0.7	20	30-JUN-14
WG1901708-9 DUP		**L1475364-2**						
Phosphorus (P)-Total		0.315	0.315		mg/L	0.0	20	30-JUN-14
WG1901708-2 LCS								
Phosphorus (P)-Total			97.2		%		80-120	30-JUN-14
WG1901708-20 LCS								
Phosphorus (P)-Total			96.7		%		70-130	30-JUN-14
WG1901708-21 LCS								
Phosphorus (P)-Total			91.8		%		70-130	30-JUN-14
WG1901708-22 LCS								
Phosphorus (P)-Total			90.8		%		70-130	30-JUN-14
WG1901708-23 LCS								
Phosphorus (P)-Total			95.8		%		70-130	30-JUN-14
WG1901708-24 LCS								
Phosphorus (P)-Total			94.5		%		70-130	30-JUN-14
WG1901708-1 MB								
Phosphorus (P)-Total			<0.020		mg/L		0.02	30-JUN-14
WG1901708-15 MB								
Phosphorus (P)-Total			<0.020		mg/L		0.02	30-JUN-14
WG1901708-16 MB								
Phosphorus (P)-Total			<0.020		mg/L		0.02	30-JUN-14
WG1901708-17 MB								
Phosphorus (P)-Total			<0.020		mg/L		0.02	30-JUN-14
WG1901708-18 MB								
Phosphorus (P)-Total			<0.020		mg/L		0.02	30-JUN-14
WG1901708-19 MB								
Phosphorus (P)-Total			<0.020		mg/L		0.02	30-JUN-14
WG1901708-10 MS		**L1475364-2**						
Phosphorus (P)-Total			98.1		%		70-130	30-JUN-14
WG1901708-14 MS		**L1477249-3**						
Phosphorus (P)-Total			110		%		70-130	30-JUN-14

Quality Control Report

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-ED	**Water**							
Batch R2876215								
WG1901708-6 MS		**L1475270-2**						
Phosphorus (P)-Total			104		%		70-130	30-JUN-14
WG1901708-8 MS		**L1475363-2**						
Phosphorus (P)-Total			104		%		70-130	30-JUN-14
PH-ED	**Water**							
Batch R2869996								
WG1896557-6 DUP		**L1473735-1**						
pH		7.82	7.68	J	pH	0.14	0.3	21-JUN-14
WG1896557-13 LCS								
pH			7.00		pH		6.9-7.1	21-JUN-14
WG1896557-18 LCS								
pH			6.99		pH		6.9-7.1	21-JUN-14
WG1896557-23 LCS								
pH			7.02		pH		6.9-7.1	21-JUN-14
WG1896557-28 LCS								
pH			7.03		pH		6.9-7.1	22-JUN-14
WG1896557-3 LCS								
pH			7.00		pH		6.9-7.1	21-JUN-14
PO4-DO-COL-ED	**Water**							
Batch R2868732								
WG1895499-3 DUP		**L1472416-2**						
Orthophosphate-Dissolved (as P)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	19-JUN-14
WG1895499-2 LCS								
Orthophosphate-Dissolved (as P)			105.9		%		80-120	19-JUN-14
WG1895499-1 MB								
Orthophosphate-Dissolved (as P)			<0.010		mg/L		0.01	19-JUN-14
WG1895499-4 MS		**L1472416-2**						
Orthophosphate-Dissolved (as P)			96.5		%		70-130	19-JUN-14
SOLIDS-TOTSUS-ED	**Water**							
Batch R2869951								
WG1895650-3 DUP		**L1473419-2**						
Total Suspended Solids		151	155		mg/L	2.3	20	20-JUN-14
WG1895650-4 DUP		**L1473537-1**						
Total Suspended Solids		3.1	<3.0	RPD-NA	mg/L	N/A	20	20-JUN-14
WG1895650-2 LCS								
Total Suspended Solids			102.4		%		85-115	20-JUN-14
WG1895650-1 MB								

Quality Control Report

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TOTSUS-ED	**Water**							
Batch R2869951								
WG1895650-1 MB								
Total Suspended Solids			<3.0		mg/L		3	20-JUN-14
TKN-CFA-ED	**Water**							
Batch R2878976								
WG1903668-5 DUP		**L1473802-8**						
Total Kjeldahl Nitrogen		<0.20	<0.20	RPD-NA	mg/L	N/A	20	04-JUL-14
WG1903668-3 LCS								
Total Kjeldahl Nitrogen			104		%		75-125	04-JUL-14
WG1903668-4 LCS								
Total Kjeldahl Nitrogen			104		%		75-125	04-JUL-14
WG1903668-1 MB								
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	04-JUL-14
WG1903668-6 MS		**L1473802-8**						
Total Kjeldahl Nitrogen			96.0		mg/L		70-130	04-JUL-14

Quality Control Report

Workorder: L1472416 Report Date: 16-JUL-14

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L1472416 Report Date: 16-JUL-14

Client: LUPIN MINES INCORPORATED
1204 - 700 W Pender St
Vancouver BC V6C 1G4
Contact: G. Friesen

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	1	17-JUN-14 13:20	21-JUN-14 10:52	0.25	94	hours	EHTR-FM
	2	17-JUN-14 15:30	21-JUN-14 22:43	0.25	103	hours	EHTR-FM
	3	17-JUN-14 14:15	21-JUN-14 10:56	0.25	93	hours	EHTR-FM
	4	17-JUN-14 14:30	21-JUN-14 11:00	0.25	92	hours	EHTR-FM
	6	17-JUN-14 16:15	21-JUN-14 11:04	0.25	91	hours	EHTR-FM
	7	17-JUN-14 14:30	21-JUN-14 11:08	0.25	93	hours	EHTR-FM
	8	17-JUN-14 14:55	21-JUN-14 11:12	0.25	92	hours	EHTR-FM
	9	17-JUN-14 13:45	21-JUN-14 11:17	0.25	94	hours	EHTR-FM
	10	17-JUN-14 10:50	21-JUN-14 10:24	0.25	96	hours	EHTR-FM
Anions and Nutrients							
Nitrate as N by IC							
	2	17-JUN-14 15:30	25-JUN-14 08:59	48	186	hours	EHT
Nitrite & Nitrate in Water by Colour							
	2	17-JUN-14 15:30	20-JUN-14 00:00	48	56	hours	EHT
Nitrite as N by IC							
	2	17-JUN-14 15:30	25-JUN-14 08:59	48	186	hours	EHT

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1472416 were received on 17-JUN-14 20:25.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1472416-COFC

COC Number: 14 -

Page ____ of ____

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Elgin Mining - Lupin Mine	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)		R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	G. Friesen	Quality Control (QC) Report with Report ☑ Yes ☐ No		P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	~~201 - 750 W. Pender St.~~ 1204 - 700 W Pender St Vancouver, BC ~~B6T 2T7~~ V6C 1G4	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
Phone:	778-372-3272	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX		E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
		Email 1 or Fax gfriesen@elginmining.com		Specify Date Required for E2,E or P:
		Email 2 glaudrum@srk.com		

Invoice To		Invoice Distribution	
	Same as Report To ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
	Copy of Invoice with Report ☐ Yes ☑ No	Email 1 or Fax ~~plaw~~@elginmining.com	
Company:		Email 2 Srowa@elginmining.com	
Contact:	P. Law Stacey Rowa	**Oil and Gas Required Fields (client use)**	
Project Information		Approver ID:	Cost Center:
ALS Quote #:	Q35666	GL Account:	Routing Code:
Job #:	Lupin	Activity Code:	
PO / AFE:		Location:	
LSD:			

ALS Lab Work Order # (lab use only): L1472416 | ALS Contact: Rick | Sampler: Arlene

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	pH, TSS	T-metals, hardness	T-Hg	Feacal Coliform	NH4	T-Lead	BOD5	T-Nitrogen, OPO4, T-Phosphorus	NO2, NO3	Alkalinity	Oil and Grease	BETX		Number of Containers
	LUP-01-140617	17-06-14	1:20 pm	Water	R	R	R	R										4
	LUP-14-140617	17-06-14	3:30 pm	Water	R	R		R	R		R	R	R	R	R			9
	LUP-27-140617	17-06-14	2:15 pm	Water	R				R	R					R	R		7
	LUP-00-140617	17-06-14	2:30 pm	Water	R				R	R					R	R		7
	Travel Blank-140917	17-06-14	NT	Water		R		R										2
	STF-140617	17-06-14	4:15 pm	Water	R				R	R					R	R		7
	JetTF-140617	17-06-14	2:30 pm	Water	R				R	R					R	R		7
	WOTF-140617	17-06-14	2:55 pm	Water	R				R	R					R	R		7
	TPDS-140617	17-16-14	1:45 pm	Water	R				R	R					R	R		7
	~~M12TF-140617~~ BOOM-140617	17-06-14	10:50 am	Water	R	R			~~R~~	~~R~~				R	~~R~~	~~R~~		2

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	Drinking water standards for LUP-01-140617. CCME FWAL for other samples
Are samples for human drinking water use? ☑ Yes ☑ No	Nutrients are unfiltered & unpreserved except 2nd container for LUP-14-140617

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
18.4	19	20			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Laudrum	Date: June 17	Time: 8:15 pm	Received by:	Date: JUN 17/14	Time: 2025	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALS-FM-0329a v09 Front/04 January 2014

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.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.