



LUPIN MINES INCORPORATED
ATTN: SHARLEEN HAMM
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Date Received: 02-JUN-12
Report Date: 08-AUG-12 10:46 (MT)
Version: FINAL REV. 2

Client Phone: 604-682-3366

Certificate of Analysis

Lab Work Order #: L1156206
Project P.O. #: NOT SUBMITTED
Job Reference: LUPIN
C of C Numbers: C048731
Legal Site Desc:

Comments: 07-JUN-12: Metals now included

Shannon Luchka
Senior Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1156206-1 LSL-2012-06-02							
Sampled By: AL on 02-JUN-12 @ 08:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		05-JUN-12	R2376697
Biochemical Oxygen Demand	<2.0		2.0	mg/L		04-JUN-12	R2379182
Orthophosphate-Dissolved (as P)	<0.010		0.010	mg/L		04-JUN-12	R2376271
MF - Fecal Coliforms	See Attached					04-JUN-12	
Oil and Grease	<1.0		1.0	mg/L		06-JUN-12	R2377347
Phosphorus (P)-Total	<0.020		0.020	mg/L	05-JUN-12	05-JUN-12	R2376843
Total Suspended Solids	<3.0		3.0	mg/L		05-JUN-12	R2377121
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.128		0.0030	mg/L		06-JUN-12	R2377647
Antimony (Sb)-Total	<0.00010		0.00010	mg/L		06-JUN-12	R2377647
Arsenic (As)-Total	0.00665		0.00010	mg/L		06-JUN-12	R2377647
Barium (Ba)-Total	0.00930		0.000050	mg/L		06-JUN-12	R2377647
Beryllium (Be)-Total	<0.00050		0.00050	mg/L		06-JUN-12	R2377647
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L		06-JUN-12	R2377647
Boron (B)-Total	0.016		0.010	mg/L		06-JUN-12	R2377647
Cadmium (Cd)-Total	0.000015		0.000010	mg/L		06-JUN-12	R2377647
Calcium (Ca)-Total	9.94		0.020	mg/L		06-JUN-12	R2377647
Chromium (Cr)-Total	0.00021		0.00010	mg/L		06-JUN-12	R2377647
Cobalt (Co)-Total	0.00292		0.00010	mg/L		06-JUN-12	R2377647
Copper (Cu)-Total	0.00168		0.00010	mg/L		06-JUN-12	R2377647
Iron (Fe)-Total	0.353		0.010	mg/L		06-JUN-12	R2377647
Lead (Pb)-Total	0.000076		0.000050	mg/L		06-JUN-12	R2377647
Lithium (Li)-Total	0.0096		0.0050	mg/L		06-JUN-12	R2377647
Magnesium (Mg)-Total	2.44		0.0050	mg/L		06-JUN-12	R2377647
Manganese (Mn)-Total	0.124		0.000050	mg/L		06-JUN-12	R2377647
Molybdenum (Mo)-Total	0.000122		0.000050	mg/L		06-JUN-12	R2377647
Nickel (Ni)-Total	0.00626		0.00010	mg/L		06-JUN-12	R2377647
Phosphorus (P)-Total	<0.30		0.30	mg/L		06-JUN-12	R2377647
Potassium (K)-Total	1.57		0.050	mg/L		06-JUN-12	R2377647
Selenium (Se)-Total	<0.00010		0.00010	mg/L		06-JUN-12	R2377647
Silicon (Si)-Total	0.664		0.050	mg/L		06-JUN-12	R2377647
Silver (Ag)-Total	<0.000010		0.000010	mg/L		06-JUN-12	R2377647
Sodium (Na)-Total	6.82		0.050	mg/L		06-JUN-12	R2377647
Strontium (Sr)-Total	0.0954		0.00010	mg/L		06-JUN-12	R2377647
Thallium (Tl)-Total	<0.000050		0.000050	mg/L		06-JUN-12	R2377647
Tin (Sn)-Total	<0.00010		0.00010	mg/L		06-JUN-12	R2377647
Titanium (Ti)-Total	0.00202		0.00030	mg/L		06-JUN-12	R2377647
Uranium (U)-Total	0.000041		0.000010	mg/L		06-JUN-12	R2377647
Vanadium (V)-Total	0.00035		0.00010	mg/L		06-JUN-12	R2377647
Zinc (Zn)-Total	0.0077		0.0030	mg/L		06-JUN-12	R2377647
Total Nitrogen							
TKN in Water by Colour							
Total Kjeldahl Nitrogen	0.28		0.20	mg/L	06-JUN-12	06-JUN-12	R2377234
Total Nitrogen (Calculation)							
Total Nitrogen	0.33		0.21	mg/L		06-JUN-12	
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	15.8		0.50	mg/L		04-JUN-12	R2376326
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	12.7		0.50	mg/L		06-JUN-12	R2377607
Magnesium (Mg)-Dissolved	2.82		0.10	mg/L		06-JUN-12	R2377607

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

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BOD-ED	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day Incub.-O2 electrode
CL-IC-ED	Water	Chloride by IC	APHA 4110 B-ION CHROMATOGRAPHY
FCC-MF-PB	Water	Fecal Coliform Count-MF	APHA 9222D MF
IONBALANCE-ED	Water	Ion Balance Calculation	APHA 1030E
MET-D-ICP-ED	Water	Dissolved Metals in Water by ICPOES	APHA 3120 B-ICP-OES
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-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-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/EC/ALK-ED	Water	pH, Conductivity and Total Alkalinity	APHA 4500-H, 2510, 2320
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.			
SO4-IC-ED	Water	Sulfate by IC	APHA 4110 B-ION CHROMATOGRAPHY
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
PB	PBR LABORATORIES
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

C048731

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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 wwwt - 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: L1156206

Report Date: 08-AUG-12

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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: SHARLEEN HAMM

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-ED		Water						
Batch	R2379182							
WG1483166-4	DUP	L1156367-2						
Biochemical Oxygen Demand		221	216		mg/L	2.4	20	04-JUN-12
WG1483166-3	IRM	BOD_SEED						
Biochemical Oxygen Demand			0.67		mg/L		0.2-1.7	04-JUN-12
WG1483166-2	LCS							
Biochemical Oxygen Demand			108.3		%		85-115	04-JUN-12
WG1483166-1	MB							
Biochemical Oxygen Demand			<0.20		mg/L		0.2	04-JUN-12
CL-IC-ED		Water						
Batch	R2376326							
WG1483352-3	DUP	L1156209-14						
Chloride (Cl)		71.4	71.3		mg/L	0.2	20	04-JUN-12
WG1483352-5	DUP	L1156314-10						
Chloride (Cl)		1.93	1.92		mg/L	0.5	20	04-JUN-12
WG1483352-7	DUP	L1156559-14						
Chloride (Cl)		244	244		mg/L	0.3	20	04-JUN-12
WG1483352-2	LCS							
Chloride (Cl)			101.2		%		85-115	04-JUN-12
WG1483352-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-JUN-12
WG1483352-4	MS	L1156209-14						
Chloride (Cl)			N/A	MS-B	%		-	04-JUN-12
WG1483352-6	MS	L1156314-10						
Chloride (Cl)			112.3		%		75-125	04-JUN-12
WG1483352-8	MS	L1156559-14						
Chloride (Cl)			N/A	MS-B	%		-	04-JUN-12
MET-D-ICP-ED		Water						
Batch	R2377607							
WG1484727-2	CRM	EU-H-3_OPTWATER						
Calcium (Ca)-Dissolved			112.3		%		80-120	06-JUN-12
Magnesium (Mg)-Dissolved			118		%		80-120	06-JUN-12
Potassium (K)-Dissolved			100.4		%		80-120	06-JUN-12
Sodium (Na)-Dissolved			113.0		%		80-120	06-JUN-12
WG1484727-1	MB							
Calcium (Ca)-Dissolved			<0.50		mg/L		0.5	06-JUN-12
Magnesium (Mg)-Dissolved			<0.10		mg/L		0.1	06-JUN-12
Potassium (K)-Dissolved			<0.50		mg/L		0.5	06-JUN-12



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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: SHARLEEN HAMM

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-ICP-ED		Water						
Batch R2377607								
WG1484727-1 MB								
Sodium (Na)-Dissolved			<1.0		mg/L		1	06-JUN-12
MET-T-CCMS-ED		Water						
Batch R2377647								
WG1484548-4 DUP		L1150749-1						
Aluminum (Al)-Total		0.0626	0.0524		mg/L	18	20	06-JUN-12
Antimony (Sb)-Total		0.00052	0.00048		mg/L	8.7	20	06-JUN-12
Arsenic (As)-Total		0.00013	0.00021	J	mg/L	0.00008	0.0002	06-JUN-12
Barium (Ba)-Total		0.0492	0.0435		mg/L	12	20	06-JUN-12
Beryllium (Be)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	06-JUN-12
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	06-JUN-12
Boron (B)-Total		0.718	0.629		mg/L	13	20	06-JUN-12
Cadmium (Cd)-Total		0.000017	0.000016		mg/L	7.7	20	06-JUN-12
Calcium (Ca)-Total		71.7	60.8		mg/L	16	20	06-JUN-12
Chromium (Cr)-Total		0.00146	0.00145		mg/L	0.7	20	06-JUN-12
Cobalt (Co)-Total		0.00075	0.00072		mg/L	4.0	20	06-JUN-12
Copper (Cu)-Total		0.00042	0.00024	J	mg/L	0.00018	0.0002	06-JUN-12
Iron (Fe)-Total		0.062	0.054		mg/L	14	20	06-JUN-12
Lead (Pb)-Total		0.000161	0.000144		mg/L	11	20	06-JUN-12
Lithium (Li)-Total		0.0203	0.0177		mg/L	14	20	06-JUN-12
Magnesium (Mg)-Total		39.4	33.6		mg/L	16	20	06-JUN-12
Manganese (Mn)-Total		0.0443	0.0386		mg/L	14	20	06-JUN-12
Molybdenum (Mo)-Total		0.0445	0.0382		mg/L	15	20	06-JUN-12
Nickel (Ni)-Total		0.0293	0.0255		mg/L	14	20	06-JUN-12
Phosphorus (P)-Total		<0.30	<0.30	RPD-NA	mg/L	N/A	20	06-JUN-12
Potassium (K)-Total		20.3	17.9		mg/L	13	20	06-JUN-12
Selenium (Se)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	06-JUN-12
Silicon (Si)-Total		2.95	2.58		mg/L	14	20	06-JUN-12
Silver (Ag)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	06-JUN-12
Sodium (Na)-Total		72.1	62.6		mg/L	14	20	06-JUN-12
Strontium (Sr)-Total		1.23	1.06		mg/L	14	20	06-JUN-12
Thallium (Tl)-Total		0.000056	<0.000050	RPD-NA	mg/L	N/A	20	06-JUN-12
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	06-JUN-12

Quality Control Report

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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: SHARLEEN HAMM

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-ED		Water						
Batch	R2377647							
WG1484548-4	DUP	L1150749-1						
Titanium (Ti)-Total		0.00085	0.00168	DUP-H	mg/L	0.00084	0.0006	06-JUN-12
Uranium (U)-Total		0.00231	0.00200		mg/L	14	20	06-JUN-12
Vanadium (V)-Total		0.00061	0.00040	DUP-H	mg/L	42	20	06-JUN-12
Zinc (Zn)-Total		0.0217	0.0197		mg/L	9.8	20	06-JUN-12
WG1484548-3	LCS							
Aluminum (Al)-Total			99.3		%		80-120	06-JUN-12
Antimony (Sb)-Total			102.2		%		80-120	06-JUN-12
Arsenic (As)-Total			97.3		%		80-120	06-JUN-12
Barium (Ba)-Total			100.8		%		80-120	06-JUN-12
Beryllium (Be)-Total			101.8		%		80-120	06-JUN-12
Bismuth (Bi)-Total			101.1		%		80-120	06-JUN-12
Boron (B)-Total			95.6		%		80-120	06-JUN-12
Cadmium (Cd)-Total			102.8		%		80-120	06-JUN-12
Calcium (Ca)-Total			90.9		%		80-120	06-JUN-12
Chromium (Cr)-Total			100.6		%		80-120	06-JUN-12
Cobalt (Co)-Total			97.9		%		80-120	06-JUN-12
Copper (Cu)-Total			96.4		%		80-120	06-JUN-12
Iron (Fe)-Total			102.5		%		80-120	06-JUN-12
Lead (Pb)-Total			105.1		%		80-120	06-JUN-12
Lithium (Li)-Total			92.5		%		80-120	06-JUN-12
Magnesium (Mg)-Total			100.3		%		80-120	06-JUN-12
Manganese (Mn)-Total			99.2		%		80-120	06-JUN-12
Molybdenum (Mo)-Total			105.4		%		80-120	06-JUN-12
Nickel (Ni)-Total			102.1		%		80-120	06-JUN-12
Potassium (K)-Total			96.1		%		80-120	06-JUN-12
Selenium (Se)-Total			103.0		%		80-120	06-JUN-12
Silver (Ag)-Total			88.6		%		80-120	06-JUN-12
Sodium (Na)-Total			102.5		%		80-120	06-JUN-12
Strontium (Sr)-Total			104.6		%		80-120	06-JUN-12
Thallium (Tl)-Total			103.4		%		80-120	06-JUN-12
Tin (Sn)-Total			95.7		%		80-120	06-JUN-12
Titanium (Ti)-Total			108.5		%		80-120	06-JUN-12
Uranium (U)-Total			102.3		%		80-120	06-JUN-12
Vanadium (V)-Total			98.2				80-120	



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Client: LUPIN MINES INCORPORATED
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VANCOUVER BC V6C 2T7

Contact: SHARLEEN HAMM

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-ED		Water						
Batch	R2377647							
WG1484548-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	06-JUN-12
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Arsenic (As)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Barium (Ba)-Total			<0.000050		mg/L		0.00005	06-JUN-12
Beryllium (Be)-Total			<0.00050		mg/L		0.0005	06-JUN-12
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	06-JUN-12
Boron (B)-Total			<0.010		mg/L		0.01	06-JUN-12
Cadmium (Cd)-Total			<0.000010		mg/L		0.00001	06-JUN-12
Calcium (Ca)-Total			<0.020		mg/L		0.02	06-JUN-12
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Copper (Cu)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Iron (Fe)-Total			<0.010		mg/L		0.01	06-JUN-12
Lead (Pb)-Total			<0.000050		mg/L		0.00005	06-JUN-12
Lithium (Li)-Total			<0.0050		mg/L		0.005	06-JUN-12
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	06-JUN-12
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	06-JUN-12
Nickel (Ni)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Phosphorus (P)-Total			<0.30		mg/L		0.3	06-JUN-12
Potassium (K)-Total			<0.050		mg/L		0.05	06-JUN-12
Selenium (Se)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Silicon (Si)-Total			<0.050		mg/L		0.05	06-JUN-12
Silver (Ag)-Total			<0.000010		mg/L		0.00001	06-JUN-12
Sodium (Na)-Total			<0.050		mg/L		0.05	06-JUN-12
Strontium (Sr)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Thallium (Tl)-Total			<0.000050		mg/L		0.00005	06-JUN-12
Tin (Sn)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	06-JUN-12
Uranium (U)-Total			<0.000010		mg/L		0.00001	06-JUN-12
Vanadium (V)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Zinc (Zn)-Total			<0.0030		mg/L		0.003	06-JUN-12
WG1484548-2 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	06-JUN-12
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	06-JUN-12



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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: SHARLEEN HAMM

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-ED		Water						
Batch	R2377647							
WG1484548-2	MB							
Arsenic (As)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Barium (Ba)-Total			0.000051	B	mg/L		0.00005	06-JUN-12
Beryllium (Be)-Total			<0.00050		mg/L		0.0005	06-JUN-12
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	06-JUN-12
Boron (B)-Total			<0.010		mg/L		0.01	06-JUN-12
Cadmium (Cd)-Total			<0.000010		mg/L		0.00001	06-JUN-12
Calcium (Ca)-Total			<0.020		mg/L		0.02	06-JUN-12
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Copper (Cu)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Iron (Fe)-Total			<0.010		mg/L		0.01	06-JUN-12
Lead (Pb)-Total			<0.000050		mg/L		0.00005	06-JUN-12
Lithium (Li)-Total			<0.0050		mg/L		0.005	06-JUN-12
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	06-JUN-12
Manganese (Mn)-Total			<0.000050		mg/L		0.00005	06-JUN-12
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	06-JUN-12
Nickel (Ni)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Phosphorus (P)-Total			<0.30		mg/L		0.3	06-JUN-12
Potassium (K)-Total			<0.050		mg/L		0.05	06-JUN-12
Selenium (Se)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Silicon (Si)-Total			<0.050		mg/L		0.05	06-JUN-12
Silver (Ag)-Total			<0.000010		mg/L		0.00001	06-JUN-12
Sodium (Na)-Total			<0.050		mg/L		0.05	06-JUN-12
Strontium (Sr)-Total			0.00031	B	mg/L		0.0001	06-JUN-12
Thallium (Tl)-Total			<0.000050		mg/L		0.00005	06-JUN-12
Tin (Sn)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	06-JUN-12
Uranium (U)-Total			<0.000010		mg/L		0.00001	06-JUN-12
Vanadium (V)-Total			<0.00010		mg/L		0.0001	06-JUN-12
Zinc (Zn)-Total			<0.0030		mg/L		0.003	06-JUN-12

NH3-CFA-ED **Water**

Quality Control Report

Workorder: L1156206

Report Date: 08-AUG-12

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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: SHARLEEN HAMM

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-CFA-ED		Water						
Batch	R2376697							
WG1483636-11	DUP	L1156821-1						
Ammonia, Total (as N)		1.41	1.42		mg/L	0.8	20	05-JUN-12
WG1483636-8	DUP	L1155257-2						
Ammonia, Total (as N)		0.052	0.052		mg/L	1.0	20	05-JUN-12
WG1483636-9	DUP	L1156209-7						
Ammonia, Total (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	05-JUN-12
WG1483636-2	LCS							
Ammonia, Total (as N)			98.9		%		85-115	05-JUN-12
WG1483636-1	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	05-JUN-12
WG1483636-10	MS	L1156399-2						
Ammonia, Total (as N)			96.0		%		75-125	05-JUN-12
WG1483636-7	MS	L1151962-4						
Ammonia, Total (as N)			100.4		%		75-125	05-JUN-12
NO2-IC-ED		Water						
Batch	R2376326							
WG1483352-3	DUP	L1156209-14						
Nitrite (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	04-JUN-12
WG1483352-5	DUP	L1156314-10						
Nitrite (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	04-JUN-12
WG1483352-7	DUP	L1156559-14						
Nitrite (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	04-JUN-12
WG1483352-2	LCS							
Nitrite (as N)			98.6		%		85-115	04-JUN-12
WG1483352-1	MB							
Nitrite (as N)			<0.050		mg/L		0.05	04-JUN-12
WG1483352-4	MS	L1156209-14						
Nitrite (as N)			94.7		%		75-125	04-JUN-12
WG1483352-6	MS	L1156314-10						
Nitrite (as N)			86.1		%		75-125	04-JUN-12
WG1483352-8	MS	L1156559-14						
Nitrite (as N)			99.1		%		75-125	04-JUN-12
NO3-IC-ED		Water						
Batch	R2376326							
WG1483352-3	DUP	L1156209-14						
Nitrate (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	04-JUN-12
WG1483352-5	DUP	L1156314-10						
Nitrate (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	04-JUN-12

Quality Control Report

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Report Date: 08-AUG-12

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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: SHARLEEN HAMM

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-ED		Water						
Batch	R2376326							
WG1483352-7	DUP	L1156559-14						
Nitrate (as N)		0.175	0.172		mg/L	1.7	20	04-JUN-12
WG1483352-2	LCS							
Nitrate (as N)			101.3		%		85-115	04-JUN-12
WG1483352-1	MB							
Nitrate (as N)			<0.050		mg/L		0.05	04-JUN-12
WG1483352-4	MS	L1156209-14						
Nitrate (as N)			100.6		%		75-125	04-JUN-12
WG1483352-6	MS	L1156314-10						
Nitrate (as N)			97.1		%		75-125	04-JUN-12
WG1483352-8	MS	L1156559-14						
Nitrate (as N)			104.2		%		75-125	04-JUN-12
OGG-LLE-ED		Water						
Batch	R2377347							
WG1484518-2	LCS							
Oil and Grease			94.0		%		70-130	06-JUN-12
WG1484518-1	MB							
Oil and Grease			<1.0		mg/L		1	06-JUN-12
P-T-COL-ED		Water						
Batch	R2376843							
WG1484227-3	DUP	L1155484-1						
Phosphorus (P)-Total		3.02	2.97		mg/L	1.7	20	05-JUN-12
WG1484227-2	LCS							
Phosphorus (P)-Total			99.4		%		80-120	05-JUN-12
WG1484227-1	MB							
Phosphorus (P)-Total			<0.020		mg/L		0.02	05-JUN-12
WG1484227-4	MS	L1155484-1						
Phosphorus (P)-Total			N/A	MS-B	%		-	05-JUN-12
PH/EC/ALK-ED		Water						
Batch	R2376063							
WG1482951-10	DUP	L1156559-14						
pH		7.38	7.41	J	pH	0.03	0.2	05-JUN-12
Conductivity (EC)		1200	1200		uS/cm	0.2	10	05-JUN-12
Bicarbonate (HCO3)		236	236		mg/L	0.0	25	05-JUN-12
Carbonate (CO3)		<5.0	<5.0	RPD-NA	mg/L	N/A	25	05-JUN-12
Hydroxide (OH)		<5.0	<5.0	RPD-NA	mg/L	N/A	25	05-JUN-12
Alkalinity, Total (as CaCO3)		194	194		mg/L	0.0	6.5	05-JUN-12



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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: SHARLEEN HAMM

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TOTSUS-ED								
Water								
Batch	R2377121							
WG1483664-3 DUP		L1156207-5						
Total Suspended Solids		6.0	5.0		mg/L	18	20	05-JUN-12
WG1483664-4 DUP		L1156292-1						
Total Suspended Solids		83.0	85.0		mg/L	2.4	20	05-JUN-12
WG1483664-2 LCS								
Total Suspended Solids			100.0		%		85-115	05-JUN-12
WG1483664-1 MB								
Total Suspended Solids			<3.0		mg/L		3	05-JUN-12
TKN-CFA-ED								
Water								
Batch	R2377234							
WG1484436-5 DUP		L1155855-1						
Total Kjeldahl Nitrogen		<0.20	<0.20	RPD-NA	mg/L	N/A	20	06-JUN-12
WG1484436-2 LCS								
Total Kjeldahl Nitrogen			102		mg/L		75-125	06-JUN-12
WG1484436-3 LCS								
Total Kjeldahl Nitrogen			107		mg/L		75-125	06-JUN-12
WG1484436-4 LCS								
Total Kjeldahl Nitrogen			87.9		mg/L		75-125	06-JUN-12
WG1484436-1 MB								
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	06-JUN-12
WG1484436-6 MS		L1155889-6						
Total Kjeldahl Nitrogen			100		mg/L		70-130	06-JUN-12

Quality Control Report

Workorder: L1156206

Report Date: 08-AUG-12

Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

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Contact: SHARLEEN HAMM

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
B	Method Blank exceeds ALS DQO. All associated sample results are at least 5 times greater than blank levels and are considered reliable.
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L1156206

Report Date: 08-AUG-12

Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7
Contact: SHARLEEN HAMM

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Leachable Anions & Nutrients							
Diss. Orthophosphate in Water by Colour	1	02-JUN-12 08:30	04-JUN-12 15:30	48	55	hours	EHT
Anions and Nutrients							
Nitrate as N by IC	1	02-JUN-12 08:30	04-JUN-12 12:04	48	52	hours	EHT
Nitrite as N by IC	1	02-JUN-12 08:30	04-JUN-12 12:04	48	52	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 L1156206 were received on 02-JUN-12 15:03.

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.



ALS 120605-03 (12-BVP)

CONFIDENTIAL ANALYSIS REPORT

REPORT #: 120605-03

WO #: 12-BVP

PO #: L1156206

CLIENT: ALS Laboratory Group - Edmonton
9936-67 Avenue
Edmonton, AB
T6E 0P5

ATTENTION: ALSED Reporting
Tel: (780) 413-5227
Fax: (780) 437-2311

SAMPLE DESCRIPTION: Water Sample

DATE AND TIME OF SAMPLE COLLECTION: June 02, 2012

DATE AND TIME OF SAMPLE RECEIPT: June 04, 2012/14:50

SAMPLE TEMPERATURE WHEN RECEIVED: 6.7° Celsius

TEST PERFORMED: Fecal Coliform by MF

TEST START DATE: June 04, 2012

DATE COMPLETED: June 05, 2012

CERTIFICATE OF ANALYSIS: See Page 2

QUALITY CONTROL DATA: See Attached Appendix 1

The report shall not be reproduced, except in full, without the written authority of PBR Laboratories Inc.

Certificate of Analysis

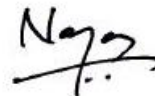
PBR ID	Sample #	Client ID	Lot #	Test	Protocol	Quantity Analyzed	*DF	Result	Units	Note
12-BVP-01	L1156206-1	LSL - 2012 - 06-02		Fecal Coliform by MF	APHA-9222D	100 ml		<1	CFU/100ml	1

*DF - Dilution Factor used for analysis

Notes

- 1 CFU = Colony Forming Unit.
<1 = No counts were detected based on the volume/dilution analyzed.

The reported results apply only to the items tested.

Rambabu Naravaneni Ph. D (Analyst)
Date: Jun 05 2012Approved By: Narayan Pokharel, Ph.D.
Date: Jun 05 2012



PIBR
Laboratories Inc.

ALS 120605-03 (12-BVP)

APPENDIX 1

Quality Control Data for Fecal Coliform by MF (APHA-9222D)

Controls	Organism/Medium	Result
Sterility (media)	m-FC	Pass
Negative	Staphylococcus aureus	Pass
Positive	Escherichia coli	Pass



Environmental Division

CHAIN OF CUSTODY / ANALYTICAL REQUEST FORM

CANADA TOLL FREE 1-800-668-9878

www.alsenviro.com

COC # **C048731**

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REPORT TO:		REPORT FORMAT / DISTRIBUTION		SERVICE REQUESTED	
COMPANY: <u>Clon Mining-Lupin Mine</u>		STANDARD ☒ EXCEL ☒ OTHER ☐		REGULAR SERVICE (DEFAULT)	
CONTACT: <u>S. Haman</u>		PDF ☒ CUSTOM ☐ FAX ☐		RUSH SERVICE (2-3 DAYS)	
ADDRESS: <u>201-750 W Pender</u>		EMAIL 1: <u>Shamm@clonmining.com</u>		PRIORITY SERVICE (1 DAY or ASAP)	
PHONE: <u>403 512 7824</u>		EMAIL 2: <u>clonmining@30k.com</u>		EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS	
INVOICE TO: SAME AS REPORT ? ☒ YES / ☐ NO		INDICATE BOTTLES: FILTERED / PRESERVED (F/P) ☐ → → →		ANALYSIS REQUEST	
COMPANY:		CLIENT / PROJECT INFORMATION:		HAZARDOUS ?	
CONTACT:		JOB #: <u>LUPIN</u>		T-Phosphorus	
ADDRESS:		PO / AFE:		T-Nitrogen	
PHONE:		Legal Site Description:		Ammonia	
FAX:		QUOTE #:		Nitrate Nitrite	
Lab Work Order # <u>L156206</u>		SAMPLER (Initials): <u>AB</u>		T-Metals	
Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	HAZARDOUS ?
	<u>LSL-2012-06-02</u>	<u>June 2/12</u>	<u>8:30am</u>	<u>water</u>	
* L 1 1 5 6 2 0 6 - C O F C *					
SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS					
GUIDELINES / REGULATIONS					

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 reverse page of the white report copy.

RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:	TEMPERATURE	SAMPLE CONDITION (lab use only)
<u>Shamm</u>	<u>June 2/12</u>	<u>AB</u>	<u>June 2/12</u>	<u>3.4-7.8</u>	SAMPLES RECEIVED IN GOOD CONDITION ? YES / NO
REFER TO BACK PAGE FOR REGIONAL LOCATIONS AND SAMPLING INFORMATION					