

SEPTEMBER 2002

Q.C.



**NORWEST
LABS**

Agri-Food & Environmental Group
Calgary Edmonton Winnipeg Ladysmith Surrey

Bill to: Echo Bay Mines Ltd.
Report to: Echo Bay Mines Ltd.

9818 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Hohnstein
Sampled By: B. Lowe
Company: Echo Bay Mines

Quality Control

Project
ID:
Name: Lupin Reference
Location:
LSD:
P.O.:
Acc'l. Code:

Norwest Labs
9938-67 Avenue
Edmonton, AB, T6E 0P5
Phone: (780) 438-5522
Fax: (780) 438-0396

NWL Lot ID: 194044
Control Number: LP 51063
Date Received: Sep 23, 2002
Date Reported: Oct 04, 2002
Report Number: 307460

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Metals Dissolved

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Sulphur	mg/L	19.9	20.00	18.00	22.00	✓

Material Used: Metals High
Date Acquired: Sep 24, 2002
Acquired By:


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Inorganic Nonmetallic Parameters

Blanks	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Cyanide	mg/L	<0.001	0.00000	-0.00100	0.00100	✓
Material Used:	Edmonton Method Blank					
Date Acquired:	Sep 25, 2002					
Acquired By:						

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Ammonium - N	mg/L	<0.05	<0.05	10.00	0.10	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Sep 24, 2002					
Acquired By:						

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Ammonium - N	mg/L	2.90	3.00	2.70	3.30	✓
Cyanide	mg/L	0.079	0.0750	0.0680	0.0870	✓
Material Used:	Water High					
Date Acquired:	Sep 25, 2002					
Acquired By:						

Ammonium - N	mg/L	0.85	0.800	0.720	0.880	✓
Cyanide	mg/L	0.016	0.0150	0.0135	0.0165	✓
Material Used:	Water Low					
Date Acquired:	Sep 25, 2002					
Acquired By:						



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Physical and Aggregate Properties

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Solids	mg/L	10	10	10.0	5.0	✓

Material Used: Edmonton Duplicate
Date Acquired: Sep 24, 2002
Acquired By: Hanmei Li


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Routine Water

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
pH		6.51	6.51	10.00	0.10	✓
Conductivity	dS/m	0.158	0.158	10.000	0.002	✓
P-Alkalinity	mg/L	<5	<5	10.0	5.0	✓
T-Alkalinity	mg/L	<5	<5	10.0	5.0	✓

 Material Used: Edmonton Duplicate
 Date Acquired: Sep 24, 2002
 Acquired By: Stacey Mebs

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	9.4	10.00	9.00	11.00	✓
Magnesium	mg/L	48.7	50.0	45.0	55.0	✓

 Material Used: Metals High
 Date Acquired: Sep 24, 2002
 Acquired By: Jesse Dang

pH		9.28	9.18	8.73	9.67	✓
Conductivity	dS/m	2.76	2.765	2.680	2.840	✓
P-Alkalinity	mg/L	499		490	557	✓
T-Alkalinity	mg/L	999	1000	972	1035	✓

 Material Used: Water High
 Date Acquired: Sep 24, 2002
 Acquired By: Stacey Mebs

pH		6.91	6.86	6.82	6.91	✓
Conductivity	dS/m	0.077	0.0739	0.0740	0.0790	✓
P-Alkalinity	mg/L	65		46.8	71.0	✓
T-Alkalinity	mg/L	128	125	121	133	✓

 Material Used: Water Low
 Date Acquired: Sep 24, 2002
 Acquired By: Stacey Mebs



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Metals Total

Blanks	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	<0.2	0.0000	-0.0312	0.2000	✓
Iron	mg/L	<0.1	0.0000	-0.0149	0.0290	✓
Magnesium	mg/L	<0.2	0.0000	-0.0305	0.0500	✓
Manganese	mg/L	<0.005	0.000000	-0.000700	0.001200	✓
Potassium	mg/L	<0.4	0.000	-0.102	0.400	✓
Silicon	mg/L	<0.05	0.0000	-0.0435	0.0933	✓
Sodium	mg/L	<0.4	0.000	-0.194	0.400	✓
Sulphur	mg/L	<0.05	0.0000	-0.0333	0.0447	✓

Material Used: Edmonton Method Blank
Date Acquired: Sep 24, 2002
Acquired By: Jesse Dang

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Silicon	mg/L	<0.05	<0.05	10.00	0.01	✓

Material Used: Edmonton Duplicate
Date Acquired: Sep 24, 2002
Acquired By: Jesse Dang


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Metals Total (Continued...)

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	0.9	1.000	0.900	1.100	✓
Iron	mg/L	0.6	0.500	0.478	0.552	✓
Magnesium	mg/L	5.0	5.00	4.48	5.19	✓
Manganese	mg/L	0.051	0.0500	0.0412	0.0539	✓
Potassium	mg/L	4.5	5.00	4.30	5.06	✓
Silicon	mg/L	1.79	2.00	1.70	2.16	✓
Sodium	mg/L	4.8	5.00	4.08	5.25	✓
Sulphur	mg/L	1.80	2.00	1.73	2.11	✓

 Material Used: Edmonton Digestion Check
 Date Acquired: Sep 24, 2002
 Acquired By: Jesse Dang

Calcium	mg/L	9.2	10.00	9.00	11.00	✓
Iron	mg/L	4.9	5.00	4.50	5.50	✓
Magnesium	mg/L	48.2	50.0	45.0	55.0	✓
Manganese	mg/L	0.486	0.500	0.450	0.550	✓
Potassium	mg/L	45.8	50.0	45.0	55.0	✓
Silicon	mg/L	22.1	20.00	16.00	24.00	✓
Sodium	mg/L	47.1	50.0	45.0	55.0	✓
Sulphur	mg/L	19.0	20.00	18.00	22.00	✓

 Material Used: Metals High
 Date Acquired: Sep 24, 2002
 Acquired By:


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Metals Total (Continued...)

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/L	210	200	180	220	✓
Antimony	ug/L	50.2	50.0	45.0	55.0	✓
Arsenic	ug/L	51.6	50.0	45.0	55.0	✓
Barium	ug/L	5	5.00	4.50	5.50	✓
Beryllium	ug/L	5.3	5.00	4.50	5.50	✓
Bismuth	ug/L	51.4	50.0	45.0	55.0	✓
Boron	ug/L	201	200	180	220	✓
Cadmium	ug/L	4.93	5.00	4.50	5.50	✓
Chromium	ug/L	9.9	10.00	9.00	11.00	✓
Cobalt	ug/L	10.6	10.00	9.00	11.00	✓
Copper	ug/L	10	10.00	9.00	11.00	✓
Lead	ug/L	20.4	20.0	18.0	22.0	✓
Lithium	ug/L	6	5.00	4.50	5.50	✓
Molybdenum	ug/L	10	10.00	9.00	11.00	✓
Nickel	ug/L	10.3	10.00	9.00	11.00	✓
Selenium	ug/L	50.7	50.0	45.0	55.0	✓
Silver	ug/L	9.8	10.00	9.00	11.00	✓
Strontium	ug/L	6	5.00	4.50	5.50	✓
Thallium	ug/L	51.2	50.00	45.00	55.00	✓
Titanium	ug/L	5.2	5.00	4.50	5.50	✓
Uranium	ug/L	486	500.0	450.0	550.0	✓
Vanadium	ug/L	10.0	10.00	9.00	11.00	✓
Zinc	ug/L	10	10.00	9.00	11.00	✓
Zirconium	ug/L	10	10.00	9.00	11.00	✓

Material Used: Metals Low
Date Acquired: Sep 24, 2002
Acquired By: To Thong



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Metals Total (Continued...)

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/L	21	20.0	18.0	22.0	✓
Antimony	ug/L	5.4	5.00	4.50	5.50	✓
Arsenic	ug/L	5.2	5.00	4.50	5.50	✓
Barium	ug/L	<1	0.500	0.450	0.550	✓
Beryllium	ug/L	0.5	0.500	0.450	0.550	✓
Bismuth	ug/L	5.2	5.00	4.50	5.50	✓
Boron	ug/L	22	20.0	18.0	22.0	✓
Cadmium	ug/L	0.49	0.500	0.450	0.550	✓
Chromium	ug/L	0.9	1.000	0.900	1.100	✓
Cobalt	ug/L	1.0	1.000	0.900	1.100	✓
Copper	ug/L	<1	1.000	0.900	1.100	✓
Lead	ug/L	2.0	2.00	1.80	2.20	✓
Lithium	ug/L	<1	0.500	0.450	0.550	✓
Molybdenum	ug/L	<1	1.000	0.900	1.100	✓
Nickel	ug/L	1.0	1.000	0.900	1.100	✓
Selenium	ug/L	4.8	5.00	4.50	5.50	✓
Silver	ug/L	1.0	1.000	0.900	1.100	✓
Strontium	ug/L	<1	0.500	0.450	0.550	✓
Thallium	ug/L	5.04	5.00	4.50	5.50	✓
Titanium	ug/L	0.5	0.500	0.450	0.550	✓
Uranium	ug/L	49.1	50.0	45.0	55.0	✓
Vanadium	ug/L	1.0	1.000	0.900	1.100	✓
Zinc	ug/L	1	1.000	0.900	1.100	✓
Zirconium	ug/L	1	1.000	0.900	1.100	✓

Material Used: Metals Trace
Date Acquired: Sep 24, 2002
Acquired By: To Thong



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T5J2T2

Attn: David Hohnstein
Sampled By: D.Hohnstein
Company: Echo Bay Mines

Project
ID:
Name: Lupin Operation
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 192746
Control Number:
Date Received: Sep 17, 2002
Date Reported: Sep 25, 2002
Report Number: 303322

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Metals Dissolved

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Sulphur	mg/L	82.2	82.6	10.00	0.02	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Sep 17, 2002					
Acquired By:	Jesse Dang					

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Sulphur	mg/L	20.0	20.00	18.00	22.00	✓
Material Used:	Metals High					
Date Acquired:	Sep 17, 2002					
Acquired By:	Jesse Dang					



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Inorganic Nonmetallic Parameters

Blanks	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Kjeldahl Nitrogen	mg/L	<0.05	0.000000	-0.000980	0.050000	✓
Phosphorus	mg/L	<0.05	0.000000	-0.00260	0.05000	✓
Phosphate	mg/L	<0.05	0.0000	-0.0500	0.0500	✓
Cyanide	mg/L	<0.001	0.00000	-0.00100	0.00100	✓

Material Used: Edmonton Method Blank

Date Acquired: Sep 25, 2002

Acquired By:

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Ammonium - N	mg/L	0.96	0.95	10.00	0.10	✓
Phosphorus	mg/L	43.0	42.4	10.00	0.05	✓

Material Used: Edmonton Duplicate

Date Acquired: Sep 18, 2002

Acquired By: Stacey Mebs

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Kjeldahl Nitrogen	mg/L	29.4	30.00	27.70	32.50	✓
Ammonium - N	mg/L	2.95	3.00	2.70	3.30	✓
Phosphorus	mg/L	3.90	4.00	3.52	4.24	✓
Cyanide	mg/L	0.079	0.0750	0.0680	0.0870	✓

Material Used: Water High

Date Acquired: Sep 25, 2002

Acquired By:

Kjeldahl Nitrogen	mg/L	5.36	5.00	4.40	5.40	✓
Ammonium - N	mg/L	0.84	0.800	0.720	0.880	✓
Phosphorus	mg/L	0.41	0.400	0.360	0.440	✓
Phosphate	mg/L	0.41	0.400	0.360	0.440	✓
Cyanide	mg/L	0.016	0.0150	0.0135	0.0165	✓

Material Used: Water Low

Date Acquired: Sep 25, 2002

Acquired By:



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Aggregate Organic Constituents

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Biochemical Oxygen Demand	mg/L	202	200	166	211	✓
Material Used:	Water High					
Date Acquired:	Sep 18, 2002					
Acquired By:	Paul Knaga					

Physical and Aggregate Properties

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Solids	mg/L	17	14	10.0	5.0	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Sep 18, 2002					
Acquired By:	Stacey Mebs					



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Routine Water

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
pH		7.46	7.42	10.00	0.10	✓
Conductivity	dS/m	1.01	0.995	10.000	0.002	✓
Calcium	mg/L	74.1	72.4	10.0	0.6	✓
Magnesium	mg/L	34.1	34.2	10.0	0.2	✓
Nitrate - N	mg/L	<0.04	<0.04	10.000	0.010	✓
Nitrite - N	mg/L	4.61	5.58	10.000	0.010	✓
P-Alkalinity	mg/L	<5	<5	10.0	5.0	✓
T-Alkalinity	mg/L	468	474	10.0	5.0	✓

Material Used: Edmonton Duplicate
Date Acquired: Sep 17, 2002
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Routine Water (Continued...)

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	9.4	10.00	9.00	11.00	✓
Magnesium	mg/L	49.2	50.0	45.0	55.0	✓
Material Used:	Metals High					
Date Acquired:	Sep 17, 2002					
Acquired By:	Jesse Dang					
pH		9.27	9.18	8.73	9.67	✓
Conductivity	dS/m	2.76	2.765	2.680	2.840	✓
Nitrate - N	mg/L	10.6	10.000	9.700	10.700	✓
Nitrite - N	mg/L	10.2	10.000	9.400	10.600	✓
P-Alkalinity	mg/L	526		490	557	✓
T-Alkalinity	mg/L	995	1000	972	1035	✓
Material Used:	Water High					
Date Acquired:	Sep 17, 2002					
Acquired By:	Stacey Mebs					
pH		6.90	6.86	6.82	6.91	✓
Conductivity	dS/m	0.076	0.0739	0.0740	0.0790	✓
Nitrate - N	mg/L	0.458	0.500	0.439	0.555	✓
Nitrite - N	mg/L	0.531	0.500	0.439	0.522	✓
P-Alkalinity	mg/L	67		46.8	71.0	✓
T-Alkalinity	mg/L	128	125	121	133	✓
Material Used:	Water Low					
Date Acquired:	Sep 17, 2002					
Acquired By:	Stacey Mebs					



**NORWEST
LABS**

Agri-Food & Environmental Group
Calgary Edmonton Winnipeg Lethbridge Surrey

Bill to: Echo Bay Mines Ltd.
Report to: Echo Bay Mines Ltd.

9818 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Hohnstein
Sampled By: D.Hohnstein
Company: Echo Bay Mines

Quality Control

Project
ID:
Name: Lupin Operation
Location:
LSD:
P.O.:
Acct. Code:

Norwest Labs
9938-67 Avenue
Edmonton, AB. T6E 0P5
Phone: (780) 438-5522
Fax: (780) 438-0396

NWL Lot ID: 192746
Control Number:
Date Received: Sep 17, 2002
Date Reported: Sep 25, 2002
Report Number: 303322

Page: 12 of 20

Metals Total

Blanks	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	<0.2	0.0000	-0.0312	0.2000	✓
Iron	mg/L	<0.1	0.0000	-0.0149	0.0290	✓
Magnesium	mg/L	<0.2	0.0000	-0.0305	0.0500	✓
Manganese	mg/L	<0.005	0.000000	-0.000700	0.001200	✓
Potassium	mg/L	<0.4	0.000	-0.102	0.400	✓
Silicon	mg/L	<0.05	0.0000	-0.0435	0.0933	✓
Sodium	mg/L	<0.4	0.000	-0.194	0.400	✓
Sulphur	mg/L	<0.05	0.0000	-0.0333	0.0447	✓

Material Used: Edmonton Method Blank
Date Acquired: Sep 17, 2002
Acquired By: To Thong



**NORWEST
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Agri-Food & Environmental Group
Calgary Edmonton Winnipeg Lethbridge Surrey

Bill to: Echo Bay Mines Ltd.
Report to: Echo Bay Mines Ltd.

9818 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Hohnstein
Sampled By: D.Hohnstein
Company: Echo Bay Mines

Quality Control

Project
ID:
Name: Lupin Operation
Location:
LSD:
P.O.:
Acct. Code:

Norwest Labs
9938-67 Avenue
Edmonton, AB. T6E 0P5
Phone: (780) 438-5522
Fax: (780) 438-0396

NWL Lot ID: 192746
Control Number:
Date Received: Sep 17, 2002
Date Reported: Sep 25, 2002
Report Number: 303322

Page: 13 of 20

Metals Total (Continued...)

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
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**NORWEST
LABS**

Agri-Food & Environmental Group
Calgary Edmonton Winnipeg Lethbridge Surrey

Bill to: Echo Bay Mines Ltd.
Report to: Echo Bay Mines Ltd.

9818 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Hohnstein
Sampled By: D.Hohnstein
Company: Echo Bay Mines

Quality Control

Norwest Labs
9938-67 Avenue
Edmonton, AB. T6E 0P5
Phone: (780) 438-5522
Fax: (780) 438-0396

Project
ID:
Name: Lupin Operation
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 192746
Control Number:
Date Received: Sep 17, 2002
Date Reported: Sep 25, 2002
Report Number: 303322

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Metals Total (Continued...)

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Calcium	mg/L	261	258	10.0	0.6	✓
Iron	mg/L	<0.5	<0.5	10.0	0.0	✓
Magnesium	mg/L	133	132	10.0	0.2	✓
Manganese	mg/L	17.7	17.3	10.000	0.001	✓
Potassium	mg/L	39.0	37.4	10.0	1.2	✓
Silicon	mg/L	9.72	9.67	10.00	0.01	✓
Sodium	mg/L	58.3	52.8	10.0	1.2	✓
Sulphur	mg/L	487	475	10.00	0.03	✓
Aluminum	ug/L	593	601	10.0	11.0	✓
Antimony	ug/L	0.4	0.5	10.0	0.4	✓
Arsenic	ug/L	3.5	3.4	10.0	0.4	✓
Barium	ug/L	29	29	10.0	2.2	✓
Beryllium	ug/L	0.5	0.5	10.0	0.2	✓
Bismuth	ug/L	<0.5	<0.5	10.0	1.1	✓
Boron	ug/L	174	171	10.0	4.4	✓
Cadmium	ug/L	2.09	2.09	10.00	0.02	✓
Chromium	ug/L	<0.5	<0.5	10.0	1.1	✓
Cobalt	ug/L	355	355	10.0	0.2	✓
Copper	ug/L	192	191	10.0	2.2	✓
Lead	ug/L	6.2	6.2	10.0	0.2	✓
Lithium	ug/L	79	77	10.0	2.2	✓
Molybdenum	ug/L	6	6	10.0	2.2	✓
Nickel	ug/L	848	858	10.0	1.1	✓
Selenium	ug/L	1.6	1.6	10.0	0.4	✓
Silver	ug/L	<0.1	<0.1	10.0	0.2	✓
Strontium	ug/L	578	576	10.0	2.2	✓
Thallium	ug/L	0.11	0.11	10.00	0.11	✓
Titanium	ug/L	7.8	7.6	10.0	1.1	✓
Uranium	ug/L	<0.5	<0.5	10.0	1.1	✓
Vanadium	ug/L	<0.1	<0.1	10.0	0.2	✓
Zinc	ug/L	4	5	10.0	2.2	✓
Zirconium	ug/L	<1	<1	10.0	2.2	✓



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Quality Control

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9938-67 Avenue
Edmonton, AB. T6E 0P5
Phone: (780) 438-5522
Fax: (780) 438-0396

Bill to: Echo Bay Mines Ltd.
Report to: Echo Bay Mines Ltd.

9818 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Hohnstein
Sampled By: D.Hohnstein
Company: Echo Bay Mines

Project
ID:
Name: Lupin Operation
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 192746
Control Number:
Date Received: Sep 17, 2002
Date Reported: Sep 25, 2002
Report Number: 303322

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Metals Total (Continued...)

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Material Used:	Edmonton Duplicate					
Date Acquired:	Sep 17, 2002					
Acquired By:	To Thong					



**NORWEST
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Calgary Edmonton Winnipeg Lethbridge Surrey

Quality Control

Norwest Labs
9938-67 Avenue
Edmonton, AB. T6E 0P5
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Fax: (780) 438-0396

Bill to: Echo Bay Mines Ltd.
Report to: Echo Bay Mines Ltd.

9818 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Hohnstein
Sampled By: D.Hohnstein
Company: Echo Bay Mines

Project
ID:
Name: Lupin Operation
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 192746
Control Number:
Date Received: Sep 17, 2002
Date Reported: Sep 25, 2002
Report Number: 303322

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Metals Total (Continued...)

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	0.9	1.000	0.900	1.100	✓
Iron	mg/L	0.5	0.500	0.478	0.552	✓
Magnesium	mg/L	5.0	5.00	4.48	5.19	✓
Manganese	mg/L	0.052	0.0500	0.0412	0.0539	✓
Potassium	mg/L	4.6	5.00	4.30	5.06	✓
Silicon	mg/L	2.20	2.00	1.70	2.16	✓
Sodium	mg/L	4.7	5.00	4.08	5.25	✓
Sulphur	mg/L	1.81	2.00	1.73	2.11	✓

Material Used: Edmonton Digestion Check
Date Acquired: Sep 17, 2002
Acquired By: To Thong

Calcium	mg/L	9.6	10.00	9.00	11.00	✓
Iron	mg/L	5.1	5.00	4.50	5.50	✓
Magnesium	mg/L	49.9	50.0	45.0	55.0	✓
Manganese	mg/L	0.502	0.500	0.450	0.550	✓
Potassium	mg/L	48.1	50.0	45.0	55.0	✓
Silicon	mg/L	23.4	20.00	16.00	24.00	✓
Sodium	mg/L	49.4	50.0	45.0	55.0	✓
Sulphur	mg/L	20.1	20.00	18.00	22.00	✓

Material Used: Metals High
Date Acquired: Sep 17, 2002
Acquired By: To Thong



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Calgary Edmonton Winnipeg Lethbridge Surrey

Quality Control

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Bill to: Echo Bay Mines Ltd.
Report to: Echo Bay Mines Ltd.

9818 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Hohnstein
Sampled By: D.Hohnstein
Company: Echo Bay Mines

Project
ID:
Name: Lupin Operation
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 192746
Control Number:
Date Received: Sep 17, 2002
Date Reported: Sep 25, 2002
Report Number: 303322

Page: 17 of 20

Metals Total (Continued...)

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	<0.2	0.1000	0.0800	0.1200	✓
Iron	mg/L	<0.1	0.0500	0.0400	0.0600	✓
Magnesium	mg/L	0.6	0.500	0.400	0.600	✓
Manganese	mg/L	0.005	0.00500	0.00400	0.00600	✓
Potassium	mg/L	0.4	0.500	0.400	0.600	✓
Silicon	mg/L	0.24	0.200	0.160	0.240	✓
Sodium	mg/L	0.4	0.500	0.400	0.600	✓
Sulphur	mg/L	0.20	0.200	0.160	0.240	✓
Aluminum	ug/L	215	200	180	220	✓
Antimony	ug/L	50.0	50.0	45.0	55.0	✓
Arsenic	ug/L	52.0	50.0	45.0	55.0	✓
Barium	ug/L	5	5.00	4.50	5.50	✓
Beryllium	ug/L	5.5	5.00	4.50	5.50	✓
Bismuth	ug/L	51.4	50.0	45.0	55.0	✓
Boron	ug/L	209	200	180	220	✓
Cadmium	ug/L	4.90	5.00	4.50	5.50	✓
Chromium	ug/L	9.8	10.00	9.00	11.00	✓
Cobalt	ug/L	10.4	10.00	9.00	11.00	✓
Copper	ug/L	11	10.00	9.00	11.00	✓
Lead	ug/L	20.6	20.0	18.0	22.0	✓
Lithium	ug/L	5	5.00	4.50	5.50	✓
Molybdenum	ug/L	10	10.00	9.00	11.00	✓
Nickel	ug/L	9.9	10.00	9.00	11.00	✓
Selenium	ug/L	50.9	50.0	45.0	55.0	✓
Silver	ug/L	9.9	10.00	9.00	11.00	✓
Strontium	ug/L	5	5.00	4.50	5.50	✓
Thallium	ug/L	51.4	50.00	45.00	55.00	✓
Titanium	ug/L	5.2	5.00	4.50	5.50	✓
Uranium	ug/L	496	500.0	450.0	550.0	✓
Vanadium	ug/L	9.9	10.00	9.00	11.00	✓
Zinc	ug/L	10	10.00	9.00	11.00	✓
Zirconium	ug/L	11	10.00	9.00	11.00	✓

Material Used: Metals Low
Date Acquired: Sep 17, 2002
Acquired By: To Thong



**NORWEST
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Agri-Food & Environmental Group
Calgary Edmonton Winnipeg Lethbridge Surrey

Quality Control

Norwest Labs
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Edmonton, AB. T6E 0P5
Phone: (780) 438-5522
Fax: (780) 438-0396

Bill to: Echo Bay Mines Ltd.
Report to: Echo Bay Mines Ltd.

9818 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Hohnstein
Sampled By: D.Hohnstein
Company: Echo Bay Mines

Project
ID:
Name: Lupin Operation
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **192746**
Control Number:
Date Received: Sep 17, 2002
Date Reported: Sep 25, 2002
Report Number: 303322

Page: 18 of 20

Metals Total (Continued...)

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/L	21	20.0	18.0	22.0	✓
Antimony	ug/L	5.0	5.00	4.50	5.50	✓
Arsenic	ug/L	5.2	5.00	4.50	5.50	✓
Barium	ug/L	<1	0.500	0.450	0.550	✓
Beryllium	ug/L	0.6	0.500	0.450	0.550	✓
Bismuth	ug/L	5.2	5.00	4.50	5.50	✓
Boron	ug/L	20	20.0	18.0	22.0	✓
Cadmium	ug/L	0.51	0.500	0.450	0.550	✓
Chromium	ug/L	0.9	1.000	0.900	1.100	✓
Cobalt	ug/L	1.1	1.000	0.900	1.100	✓
Copper	ug/L	1	1.000	0.900	1.100	✓
Lead	ug/L	2.1	2.00	1.80	2.20	✓
Lithium	ug/L	<1	0.500	0.450	0.550	✓
Molybdenum	ug/L	1	1.000	0.900	1.100	✓
Nickel	ug/L	1.0	1.000	0.900	1.100	✓
Selenium	ug/L	4.9	5.00	4.50	5.50	✓
Silver	ug/L	1.1	1.000	0.900	1.100	✓
Strontium	ug/L	<1	0.500	0.450	0.550	✓
Thallium	ug/L	5.18	5.00	4.50	5.50	✓
Titanium	ug/L	0.6	0.500	0.450	0.550	✓
Uranium	ug/L	53.0	50.0	45.0	55.0	✓
Vanadium	ug/L	1.0	1.000	0.900	1.100	✓
Zinc	ug/L	<1	1.000	0.900	1.100	✓
Zirconium	ug/L	<1	1.000	0.900	1.100	✓

Material Used: Metals Trace
Date Acquired: Sep 17, 2002
Acquired By: To Thong



Agri-Food & Environmental Group
Calgary Edmonton Winnipeg Lethbridge Surrey

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Report to: Echo Bay Mines Ltd.
9818 International Airport
Edmonton, AB, Canada
T5J2T2
Attn: David Hohnstein
Sampled By: D.Hohnstein
Company: Echo Bay Mines

Methodology and Notes

Norwest Labs
9938-67 Avenue
Edmonton, AB. T6E 0P5
Phone: (780) 438-5522
Fax: (780) 438-0396

Project ID:
Name: Lupin Operation
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 192746
Control Number:
Date Received: Sep 17, 2002
Date Reported: Sep 25, 2002
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Method of Analysis:

Test	Reference	Method	Date of Analysis	Location	Analyst
(Ortho)Phosphate in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	Sep 19, 2002	Norwest Labs Edmonton	Hanmei Li
Alkalinity, pH, and EC in water	APHA	* Conductivity - Laboratory Method, 2510 B	Sep 18, 2002	Norwest Labs Edmonton	Stacey Mebs
		* Electrometric Method, 4500-H+ B	Sep 18, 2002	Norwest Labs Edmonton	Stacey Mebs
		* Laboratory & Field Methods, 2550 B	Sep 18, 2002	Norwest Labs Edmonton	Stacey Mebs
		* Titration Method, 2320 B	Sep 18, 2002	Norwest Labs Edmonton	Stacey Mebs
Ammonium in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Sep 23, 2002	Norwest Labs Edmonton	Gordon Grensman
Anions (Routine) by Ion Chromatography	APHA	* Single-Column Ion Chromatography with Electronic Suppression, 4110 C	Sep 19, 2002	Norwest Labs Edmonton	Tina Knott
BOD in water	APHA	* 5 Day, 5210 B	Sep 23, 2002	Norwest Labs Edmonton	Tina Knott
Cyanide (Strong Acid Dissociable) in water	APHA	* Total Cyanide after Distillation, 4500-CN- C	Sep 25, 2002	Norwest Labs Edmonton	Gordon Grensman
Fecal Coliforms - MF	APHA	* Fecal Coliform Membrane Filter Procedure, 9222 D	Sep 24, 2002	Norwest Labs Calgary	Lisa Thorpe
Kjeldahl Nitrogen & Phosphorus (Total) in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	Sep 18, 2002	Norwest Labs Edmonton	Hanmei Li
		* Total Kjeldahl Nitrogen in Soil/Plant, 13-107-6-2-D	Sep 18, 2002	Norwest Labs Edmonton	Hanmei Li
Metals ICP-MS (Total) in water	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Sep 19, 2002	Norwest Labs Edmonton	To Thong
Metals Trace (Dissolved) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	Sep 18, 2002	Norwest Labs Edmonton	Jesse Dang
Metals Trace (Total) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	Sep 18, 2002	Norwest Labs Edmonton	To Thong
Solids Suspended (Total, Fixed and Volatile)	APHA	* TSS Dried at 103-105 C, 2540 D	Sep 18, 2002	Norwest Labs Edmonton	Stacey Mebs
Total Coliforms - MF	APHA	* Standard Total Coliform Membrane Filter Procedure, 9222 B	Sep 24, 2002	Norwest Labs Calgary	Lisa Thorpe

* Norwest method(s) is based on reference method

References:

APHA	Standard Methods for the Examination of Water and Wastewater
QuikChem Method	Lachat Instruments
US EPA	US Environmental Protection Agency Test Methods

Comments:

Accredited by the Standards Council of Canada (SCC) and by the Canadian Association for Environmental Analytical Laboratories (CAEAL) for specific tests registered with the Council and the Association