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Teck

September 23, 2009

Nunavut Water Board
Box 119
Gjoa Haven, NU
X0B 0J0

Attention: Phyllis Beaulieu, Manager of Licensing

Indian and Northern Affairs Canada
P.O. Box 100
Iqaluit, Nunavut
X0A 0H0

Attention: Spencer Dewar, Manager, Lands Administration

Dear Ms. Beaulieu and Mr. Dewar;

Re: Polaris Mine – 2009 1st and 2nd Decommissioning and Reclamation Monitoring Report (Water Licence #NWB1POL0311)

Please find attached the Polaris Mine 2009 1st and 2nd Quarter decommissioning and reclamation monitoring report.

The attached report is in paper format complete with a CD containing an electronic copy of the report in pdf format.

If there are any questions with regard to this report, please contact the undersigned.

Yours truly,



Bruce J. Donald
Reclamation Manager
Environment and Corporate Affairs
Teck Cominco Limited

Enclosures:

- 1st and 2nd Quarter 2009 Decommissioning and Reclamation Report

POLARIS MINE 2009 1ST AND 2ND QUARTER DECOMMISSIONING AND RECLAMATION REPORT

**FOR THE
NUNAVUT WATER BOARD
AND
INDIAN AND NORTHERN AFFAIRS CANADA**



2009 POLARIS MINE 1ST AND 2ND QUARTER POST-RECLAMATION MONITORING REPORT

INTRODUCTION

During the 1st and 2nd Quarters of 2009 the Polaris Mine site remained unoccupied due to winter weather conditions. As there was no effluent discharge from Garrow Lake, the only monitoring undertaken was the spring sampling of Garrow Lake. An executive summary of information for the 1st and 2nd Quarter in Inuktitut is provided in Appendix 1.

1st Quarter, 2009

During the 1st Quarter of 2009, the Polaris Mine remained un-occupied by personnel. No monitoring events occurred during the quarter.

The Water Licence requires a mid-winter sampling of Garrow Lake stratigraphy for water quality parameters. At mid-winter the site was not safely accessible. Charter aircraft will not fly to the site due to the dark conditions without the site having runway lighting and visual confirmation from the ground of landing conditions.

There was no data collected of temperature conditions in the Little Red Dog Landfill or the Operational Landfill as there was no one at the site during the quarter. However, data loggers are installed on the thermistors at both landfills so the data is being collected daily over the winter and the data will be retrieved in July and reported in the 2009 3rd quarter monitoring report.

Due to winter conditions at the site throughout the 1st Quarter reporting period, there was no discharge from Garrow Lake and thus there was no effluent discharge to monitor.

Appendix 4 contains the 1st Quarter expenditure report. There was no reclamation work conducted at the site during the quarter and all quarterly expenditures relate to either late invoicing received for 2008 work or for preparation of reports for the Water Board and INAC.

2nd Quarter, 2009

During the majority of the 2nd Quarter the Polaris Mine site remained un-occupied by personnel. However, monitoring of the water column of Garrow Lake was completed in early June to capture the Maximum Ice Thickness conditions as required by the Water Licence. Ice conditions were abnormally thick this year with the ice being approximately 3 to 3.5m thick).

There was no effluent flow to monitor from the site during the quarter there is no effluent data to report.

1. Garrow Lake Water Quality and Stratigraphy Monitoring

Please find attached to this report the sample analysis from ALS Laboratories for the June 12, 2009 sampling event of Garrow Lake (Appendix 2). This represents the Maximum Ice Thickness monitoring event required by the Water Licence. Appendix 3 contains the field data collected with a Hydro-lab sampler which collects water temperature, conductivity, dissolved oxygen and redox potentials at various depths within the water column.

2009 POLARIS MINE 1ST AND 2ND QUARTER POST-RECLAMATION MONITORING REPORT

The data continues to confirm that the stratigraphy of the lake is intact and stable and that zinc concentrations in the water column are low.

2. Notification of Intent to Initiate Planned Discharge of Effluent from the Tailings Impoundment Area (Part D, Section 1)

The date of initiation of effluent discharge is no longer under the control of Teck Cominco as siphoning is no longer required. As part of the approved site decommissioning plan, Garrow Dam was removed in 2004 and discharge from the lake occurs naturally. This normally occurs during early July.

3. Water Quality and Environmental Effects Monitoring Program

There was no effluent discharge from Garrow Lake in the 2nd Quarter.

4. Landfill Temperature Monitoring

Landfill temperature data was not collected during the Quarter as there was only one day where anyone was on site (and were fully occupied collecting Garrow Lake data). As there are data loggers on the landfill thermistors, the data will be collected during the 3rd Quarter and reported at along with the other 3rd Quarter data collected.

5. Quarterly Expenditure Reports

Appendix 4 contains the expenditure report for the 2nd Quarter of 2009. The only work undertaken during the quarter was the mid-winter sampling of Garrow Lake.

Electronic File of Report

Refer to Appendix 5 for an electronic copy of this report in pdf format.

POLARIS MINE
2009 1ST AND 2ND QUARTER
DECOMMISSIONING AND RECLAMATION
MONITORING REPORT

LIST OF APPENDICES

APPENDIX 1 – Executive Summary in Inuktitut

APPENDIX 2 - June 12, 2009 Garrow Lake Water Quality and Stratigraphy Monitoring Results

APPENDIX 3 - June 12, 2009 Garrow Lake Field Monitoring Results

APPENDIX 4 – 1st and 2nd Quarter Expenditure Report

APPENDIX 5 - CD with electronic version (pdf) of the 2009 1st and 2nd Quarter Decommissioning and Reclamation Monitoring Report

APPENDIX 1

EXECUTIVE SUMMARY OF 1ST AND 2ND QUARTER 2009

POLARIS MINE POST RECLAMATION MONITORING

REPORT

TRANSLATED INTO INUKTITUT

[illegible]

ርዕሩ በበከፍተኛ ሽጦት መሰረት ደረሰው ምርት ለጋራ ጥቅም ሆኖ ለሌሎች ምርቶች ማስተካከል ይጠቅማል።

2. ደረሰው ምርት ለጋራ ጥቅም ሆኖ ለሌሎች ምርቶች ማስተካከል ይጠቅማል።
ሌላውም ምርት ለጋራ ጥቅም ሆኖ ለሌሎች ምርቶች ማስተካከል ይጠቅማል።
3. ለሌሎች ምርቶች ማስተካከል ይጠቅማል።
ሌላውም ምርት ለጋራ ጥቅም ሆኖ ለሌሎች ምርቶች ማስተካከል ይጠቅማል።
4. ለሌሎች ምርቶች ማስተካከል ይጠቅማል።
ሌላውም ምርት ለጋራ ጥቅም ሆኖ ለሌሎች ምርቶች ማስተካከል ይጠቅማል።
5. ለሌሎች ምርቶች ማስተካከል ይጠቅማል።
ሌላውም ምርት ለጋራ ጥቅም ሆኖ ለሌሎች ምርቶች ማስተካከል ይጠቅማል።

ከሌሎች ምርቶች ማስተካከል ይጠቅማል።

ርዕሩ ለሌሎች ምርቶች ማስተካከል ይጠቅማል።

APPENDIX 2

June 12, 2009 GARROW LAKE

WATER QUALITY AND STRATIGRAPHY

MONITORING RESULTS

POLARIS MINE - 2009 2nd QUARTER GARROW LAKE MONITORING EVENT
RESULTS FOR STATION 262-3

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779771
Date Received 17-Jun-09
Date 02-Jul-09

RESULTS OF ANALYSIS

Sample ID	GLC 2M	GLC 3M	GLC 4M	GLC 5M	GLC 6M	GLC 7M	GLC 8M	GLC 9M	GLC 10M	GLC 11M	GLC 12M	GLC 13M
Date Sampled	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09
Time Sampled	17:11	17:13	17:15	17:17	17:20	17:24	17:27	17:30	17:33	17:36	17:38	17:41
ALS Sample ID	L779771-1	L779771-2	L779771-3	L779771-4	L779771-5	L779771-6	L779771-7	L779771-8	L779771-9	L779771-10	L779771-11	L779771-12
Matrix	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests												
Conductivity	16300	16400	16400	16400	16400	16300	16300	16300	23900	81100	86800	88200
Hardness (as CaCO3)	2090	2050	2130	2100	2100	2100	2100	2190	3260	12800	13300	13600
pH	8.13	8.21	8.24	8.22	8.21	8.21	8.21	8.20	8.11	8.11	8.11	8.20
Salinity (EC)	9.9	10.0	10.0	9.9	10.0	9.9	9.9	9.9	15.0	59.0	63.9	65.1
Total Suspended Solids	3.8	3.8	5.8	4.4	3.1	<3.0	3.8	4.4	<3.0	21.1	19.1	18.4
Anions and Nutrients												
Alkalinity, Total (as CaCO3)	159	162	160	159	161	163	161	160	166	406	440	440
Sulphide as S	-	-	-	-	<0.020	-	-	-	-	-	-	-
Cyanides												
Cyanide, Total	-	<0.0050	-	-	-	-	-	-	<0.0050	-	-	-
Total Metals												
Aluminum (Al)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.20	<0.30	<0.30
Antimony (Sb)-Total	-	0.00023	-	-	-	-	-	-	0.00025	-	-	-
Arsenic (As)-Total	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00022	<0.00020	<0.00020
Cadmium (Cd)-Total	0.000719	0.000688	0.000704	0.000701	0.000680	0.000693	0.000687	0.000689	0.000963	0.000474	0.000022	<0.000020
Calcium (Ca)-Total	171	170	174	176	174	172	175	178	240	825	835	855
Copper (Cu)-Total	0.00167	0.00114	0.00119	0.00112	0.00108	0.00110	0.00108	0.00115	0.00129	0.00104	0.000409	0.000438
Iron (Fe)-Total	0.051	<0.010	0.011	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.060	0.090	0.361
Lead (Pb)-Total	0.0110	0.000386	0.000442	0.000574	0.000275	0.000265	0.000135	0.000145	0.000148	0.00115	0.000482	0.000827
Magnesium (Mg)-Total	403	395	410	403	406	406	405	423	647	2620	2720	2780
Manganese (Mn)-Total	0.00664	0.00598	0.00603	0.00587	0.00565	0.00570	0.00565	0.00558	0.0208	0.161	0.151	0.127
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	0.0026	<0.0025	<0.0025	0.0025	0.0032	0.0026	0.0025	0.0027	0.0033	<0.010	<0.015	<0.015
Nickel (Ni)-Total	0.00544	0.00530	0.00536	0.00526	0.00518	0.00515	0.00522	0.00512	0.00586	0.00882	0.00780	0.00540
Zinc (Zn)-Total	0.266	0.264	0.272	0.260	0.254	0.257	0.261	0.255	0.452	0.381	0.0201	0.0146

POLARIS MINE - 2009 2nd QUARTER GARROW LAKE MONITORING EVENT
RESULTS FOR STATION 262-3

Project
Report To
ALS File No.
Date Received
Date

RESULTS OF ANALYSIS

Sample ID	GLC 14M	GLC 15M	GLC 16M	GLC 17M	GLC 18M	GLC 19M	GLC 20M	GLC 22M	GLC 30M	GLC 40M
Date Sampled	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09
Time Sampled	17:45	17:47	17:50	17:52	17:54	17:58	18:00	18:04	18:30	18:44
ALS Sample ID	L779771-13	L779771-14	L779771-15	L779771-16	L779771-17	L779771-18	L779771-19	L779771-20	L779771-21	L779771-22
Matrix	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests										
Conductivity	88600	88300	88100	87800	87900	87800	87700	88000	86600	87900
Hardness (as CaCO3)	13700	14000	13600	13700	13400	13600	13500	13500	13400	13900
pH	8.13	8.11	8.11	8.10	8.11	8.09	8.11	8.19	8.10	8.07
Salinity (EC)	65.5	65.2	65.0	64.8	64.9	64.8	64.7	64.9	63.7	64.8
Total Suspended Solids	24.4	25.8	21.8	21.8	27.1	17.8	8.4	20.4	24.4	132
Anions and Nutrients										
Alkalinity, Total (as CaCO3)	444	443	442	442	436	440	443	443	435	422
Sulphide as S	0.053	-	-	-	-	-	0.058	0.052	0.82	2.03
Cyanides										
Cyanide, Total	-	-	-	-	-	-	-	-	-	-
Total Metals										
Aluminum (Al)-Total	<0.30	<0.30	<0.30	<0.20	<0.30	<0.30	<0.30	<0.30	<0.20	<0.30
Antimony (Sb)-Total	-	-	-	-	-	-	-	-	-	-
Arsenic (As)-Total	0.00032	0.00084	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cadmium (Cd)-Total	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000031	<0.000020
Calcium (Ca)-Total	863	876	858	856	833	862	850	838	838	867
Copper (Cu)-Total	0.000337	0.000343	0.000317	0.000320	0.000377	0.000362	0.000597	0.000323	0.000274	0.000243
Iron (Fe)-Total	0.369	0.371	0.365	0.375	0.366	0.374	0.380	0.389	0.322	0.178
Lead (Pb)-Total	0.000653	0.000608	0.000601	0.000722	0.000613	0.000649	0.000699	0.000719	0.000607	0.000332
Magnesium (Mg)-Total	2790	2860	2790	2800	2750	2790	2770	2740	2740	2840
Manganese (Mn)-Total	0.131	0.127	0.126	0.129	0.125	0.129	0.128	0.127	0.108	0.0745
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	<0.015	<0.015	<0.015	<0.010	<0.015	<0.015	<0.015	<0.015	<0.010	<0.015
Nickel (Ni)-Total	0.00563	0.00533	0.00529	0.00558	0.00550	0.00553	0.00558	0.00571	0.00320	0.00138
Zinc (Zn)-Total	0.0153	0.0153	0.0149	0.0152	0.0151	0.0153	0.0154	0.0154	0.0261	0.0119

Project	112986
Report To	BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No.	L779771
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[illegible][illegible]

Alkalinity, Total (as CaCO ₃)	2	2	2	2	2	2	2	2	2	2	2	2
Sulphide as S	-	-	-	-	0.02	-	-	-	-	-	-	-

Cyanide, Total	-	0.005	-	-	-	-	-	-	0.005	-	-	-
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Project
Report To
ALS File No.
Date Received
Date

[illegible]

Conductivity	2	2	2	2	2	2	2	2	2
Hardness (as CaCO ₃)	7	7	7	7	7	7	7	7	7
pH	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Salinity (EC)	1	1	1	1	1	1	1	1	1
Total Suspended Solids	3	3	3	3	3	3	3	3	3

Alkalinity, Total (as CaCO ₃)	2	2	2	2	2	2	2	2	2
Sulphide as S	0.02	-	-	-	-	-	0.02	0.02	0.1

Cyanide, Total	-	-	-	-	-	-	-	-	-
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[illegible]

POLARIS MINE - 2009 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
UNITS AT STATION 262-3

Project	112986
Report To	BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No.	L779771
Date Received	17-Jun-09
Date	02-Jul-09

UNITS

[illegible]

Physical Tests

[illegible]

Anions and Nutrients

Alkalinity, Total (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sulphide as S	-	-	-	-	mg/L	-	-	-	-	-

Cyanides

Cyanide, Total	-	mg/L	-	-	-	-	-	-	mg/L	-
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Total Metals

[illegible]

POLARIS MINE - 2009 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
UNITS AT STATION 262-3

[illegible]

POLARIS MINE - 2009 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
 REPLICATE RESULTS AT STATION 262-3

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779771
Date Received 17-Jun-09
Date 02-Jul-09

REPLICATE RESULTS

Sample ID	Matrix	ALS ID	Analyte	Replicate 1	Replicate 2	Units	RPD	RPD Limit	Diff	Diff Limit	Qualifier
Physical Tests											
L779771-1	Seawater	WG961335-10	Conductivity	16300	16300	uS/cm	0.25	39	-	-	-
L779771-1	Seawater	WG961335-10	pH	8.13	8.20	pH	0.88	39	-	-	-
Anions and Nutrients											
L779771-1	Seawater	WG961405-22	Alkalinity, Total (as CaCO3)	159	156	mg/L	2.0	39	-	-	-
Total Metals											
L779771-1	Seawater	WG962375-10	Mercury (Hg)-Total	<0.000010	<0.000010	mg/L	N/A	20	-	-	RPD-NA
Physical Tests											
L779771-4	Seawater	WG964967-6	Total Suspended Solids	4.4	3.8	mg/L	-	-	0.7	12	J
Total Metals											
L779771-11	Seawater	WG962839-2	Cadmium (Cd)-Total	0.000022	0.000022	mg/L	-	-	0.000000	0.00008	J
L779771-11	Seawater	WG962839-2	Copper (Cu)-Total	0.000409	0.000447	mg/L	-	-	0.000038	0.0002	J
L779771-11	Seawater	WG962839-2	Iron (Fe)-Total	0.090	0.091	mg/L	-	-	0.000	0.04	J
L779771-11	Seawater	WG962839-2	Lead (Pb)-Total	0.000482	0.000481	mg/L	-	-	0.000002	0.0002	J
L779771-11	Seawater	WG962839-2	Manganese (Mn)-Total	0.151	0.155	mg/L	2.4	20	-	-	-
L779771-11	Seawater	WG962839-2	Nickel (Ni)-Total	0.00780	0.00768	mg/L	1.4	20	-	-	-
L779771-11	Seawater	WG962839-2	Zinc (Zn)-Total	0.0201	0.0197	mg/L	2.2	20	-	-	-
Anions and Nutrients											
L779771-19	Seawater	WG961790-4	Sulphide as S	0.058	0.053	mg/L	-	-	0.005	0.08	J
Total Metals											
L779771-20	Seawater	WG962995-7	Mercury (Hg)-Total	<0.000010	<0.000010	mg/L	N/A	20	-	-	RPD-NA
Anions and Nutrients											
L779771-21	Seawater	WG961405-25	Alkalinity, Total (as CaCO3)	435	441	mg/L	1.4	39	-	-	-

POLARIS MINE - 2009 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
QC RESULTS AT STATION 262-3

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779771
Date Received 17-Jun-09
Date 02-Jul-09

QUALITY CONTROL RESULTS

Matrix	QC Type	Analyte	QC Spl. No.	Reference	Result	Target	Units	%	Limits	Qualifier
Physical Tests										
Seawater	CRM	Conductivity	WG961335-6	VA-EC-PCT-CONTROL	146	147	uS/cm	99	90-110	
Seawater	CRM	pH	WG961335-7	VA-PH7-BUF	6.98	7.00	pH	6.98	6.9-7.1	
Seawater	CRM	Total Suspended Solids	WG964967-2	VA-TSS-INFUS-75	75.7	75.0	mg/L	101	80-120	
Seawater	CRM	Total Suspended Solids	WG964967-5	VA-TSS-INFUS-75	67.7	75.0	mg/L	90	80-120	
Seawater	CRM	Total Suspended Solids	WG964967-8	VA-TSS-INFUS-75	73.7	75.0	mg/L	98	80-120	
Seawater	MB	Conductivity	WG961335-2		<2.0	<2	uS/cm	-	2	
Seawater	MB	Conductivity	WG961335-3		<2.0	<2	uS/cm	-	2	
Seawater	MB	Conductivity	WG961335-4		<2.0	<2	uS/cm	-	2	
Seawater	MB	Salinity (EC)	WG962530-1		<1.0	<1	g/L	-	1	
Seawater	MB	Total Suspended Solids	WG964967-1		<3.0	<3	mg/L	-	3	
Seawater	MB	Total Suspended Solids	WG964967-4		<3.0	<3	mg/L	-	3	
Seawater	MB	Total Suspended Solids	WG964967-7		<3.0	<3	mg/L	-	3	
Anions and Nutrients										
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-3	VA-ALKL-CONTROL	14.9	15.0	mg/L	99	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-6	VA-ALKM-CONTROL	81.0	75.0	mg/L	108	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-9	VA-ALKH-CONTROL	253	250	mg/L	101	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-12	VA-ALKL-CONTROL	15.1	15.0	mg/L	101	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-15	VA-ALKM-CONTROL	79.6	75.0	mg/L	106	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-18	VA-ALKH-CONTROL	259	250	mg/L	104	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-21	VA-ALKL-CONTROL	15.3	15.0	mg/L	102	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-24	VA-ALKM-CONTROL	80.5	75.0	mg/L	107	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-27	VA-ALKH-CONTROL	252	250	mg/L	101	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-30	VA-ALKL-CONTROL	14.7	15.0	mg/L	98	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-33	VA-ALKM-CONTROL	81.8	75.0	mg/L	109	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-36	VA-ALKH-CONTROL	252	250	mg/L	101	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-39	VA-ALKL-CONTROL	15.0	15.0	mg/L	100	85-115	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-2		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-5		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-8		<2.0	<2	mg/L	-	2	
Seawater	MB	Sulphide as S	WG961790-1		<0.020	<0.02	mg/L	-	0.02	
Seawater	MB	Sulphide as S	WG961790-2		<0.020	<0.02	mg/L	-	0.02	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-11		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-14		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-17		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-20		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-23		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-26		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-29		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-32		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-35		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-38		<2.0	<2	mg/L	-	2	
Total Metals										
Seawater	CRM	Antimony (Sb)-Total	WG959429-4	VA-HIGH-WATRM	0.855	1.00	mg/L	85	80-120	
Seawater	CRM	Antimony (Sb)-Total	WG959429-4	VA-HIGH-WATRM	0.855	1.00	mg/L	85	80-120	
Seawater	CRM	Arsenic (As)-Total	WG959429-4	VA-HIGH-WATRM	0.891	1.00	mg/L	89	80-120	
Seawater	CRM	Arsenic (As)-Total	WG959429-4	VA-HIGH-WATRM	0.891	1.00	mg/L	89	80-120	
Seawater	CRM	Copper (Cu)-Total	WG962257-3	VA-NRC-CASS4	0.000689	0.000592	mg/L	116	80-120	
Seawater	CRM	Manganese (Mn)-Total	WG962257-3	VA-NRC-CASS4	0.00258	0.00278	mg/L	93	80-120	
Seawater	CRM	Nickel (Ni)-Total	WG962257-3	VA-NRC-CASS4	0.000295	0.000314	mg/L	94	80-120	
Seawater	CRM	Copper (Cu)-Total	WG962257-4	VA-NRC-NASS5	0.000340	0.000297	mg/L	114	80-120	
Seawater	CRM	Manganese (Mn)-Total	WG962257-4	VA-NRC-NASS5	0.000814	0.000919	mg/L	89	80-120	
Seawater	CRM	Nickel (Ni)-Total	WG962257-4	VA-NRC-NASS5	0.000244	0.000253	mg/L	97	80-120	
Seawater	CRM	Mercury (Hg)-Total	WG962375-2	VA-HG-WATRM	0.000094	0.000100	mg/L	94	88-112	
Seawater	CRM	Aluminum (Al)-Total	WG962622-2	VA-HIGH-WATRM	2.05	2.00	mg/L	102	90-110	
Seawater	CRM	Calcium (Ca)-Total	WG962622-2	VA-HIGH-WATRM	50.9	50.0	mg/L	102	85-115	
Seawater	CRM	Magnesium (Mg)-Total	WG962622-2	VA-HIGH-WATRM	52.4	50.0	mg/L	105	85-115	
Seawater	CRM	Molybdenum (Mo)-Total	WG962622-2	VA-HIGH-WATRM	0.260	0.250	mg/L	104	90-110	
Seawater	CRM	Copper (Cu)-Total	WG962839-3	VA-NRC-CASS4	0.000601	0.000592	mg/L	101	80-120	
Seawater	CRM	Manganese (Mn)-Total	WG962839-3	VA-NRC-CASS4	0.00255	0.00278	mg/L	92	80-120	
Seawater	CRM	Nickel (Ni)-Total	WG962839-3	VA-NRC-CASS4	0.000298	0.000314	mg/L	95	80-120	
Seawater	CRM	Copper (Cu)-Total	WG962839-4	VA-NRC-NASS5	0.000355	0.000297	mg/L	119	80-120	
Seawater	CRM	Manganese (Mn)-Total	WG962839-4	VA-NRC-NASS5	0.000926	0.000919	mg/L	101	80-120	
Seawater	CRM	Nickel (Ni)-Total	WG962839-4	VA-NRC-NASS5	0.000257	0.000253	mg/L	101	80-120	
Seawater	CRM	Mercury (Hg)-Total	WG962995-2	VA-HG-WATRM	0.000092	0.000100	mg/L	92	88-112	
Seawater	MB	Antimony (Sb)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Antimony (Sb)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Arsenic (As)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Arsenic (As)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Cadmium (Cd)-Total	WG962257-1		<0.000020	<0.00002	mg/L	-	0.00002	
Seawater	MB	Copper (Cu)-Total	WG962257-1		0.000082	<0.00005	mg/L	-	0.00005	MB-LOR
Seawater	MB	Iron (Fe)-Total	WG962257-1		<0.010	<0.01	mg/L	-	0.01	
Seawater	MB	Lead (Pb)-Total	WG962257-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Manganese (Mn)-Total	WG962257-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Nickel (Ni)-Total	WG962257-1		0.000057	<0.00005	mg/L	-	0.00005	MB-LOR
Seawater	MB	Zinc (Zn)-Total	WG962257-1		0.00072	<0.0005	mg/L	-	0.0005	MB-LOR
Seawater	MB	Mercury (Hg)-Total	WG962375-1		<0.000010	<0.00001	mg/L	-	0.00001	
Seawater	MB	Aluminum (Al)-Total	WG962622-1		<0.0010	<0.001	mg/L	-	0.001	
Seawater	MB	Antimony (Sb)-Total	WG962622-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Calcium (Ca)-Total	WG962622-1		<0.050	<0.05	mg/L	-	0.05	
Seawater	MB	Magnesium (Mg)-Total	WG962622-1		<0.10	<0.1	mg/L	-	0.1	
Seawater	MB	Molybdenum (Mo)-Total	WG962622-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Cadmium (Cd)-Total	WG962839-1		<0.000020	<0.00002	mg/L	-	0.00002	
Seawater	MB	Copper (Cu)-Total	WG962839-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Iron (Fe)-Total	WG962839-1		<0.010	<0.01	mg/L	-	0.01	
Seawater	MB	Lead (Pb)-Total	WG962839-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Manganese (Mn)-Total	WG962839-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Nickel (Ni)-Total	WG962839-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Zinc (Zn)-Total	WG962839-1		<0.00050	<0.0005	mg/L	-	0.0005	
Seawater	MB	Mercury (Hg)-Total	WG962995-1		<0.000010	<0.00001	mg/L	-	0.00001	



Environmental Division

Certificate of Analysis

TECK COMINCO METALS LTD.

ATTN: BRUCE DONALD

BAG 2000

KIMBERLEY BC V1A 3E1

Report Date: 02-JUL-09 17:35 (MT)

Version: FINAL

Lab Work Order #: L779771

Date Received: 17-JUN-09

Project P.O. #: 7696

Job Reference: 112986

Legal Site Desc: POLARIS MINE

CofC Numbers: 09-026762, 09-026763

Other Information:

Comments: Please note that some of the metals detection limits have been increased due to interferences encountered during analysis.


LINDSAY JONES
Account Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L779771-1	L779771-2	L779771-3	L779771-4	L779771-5
		12-JUN-09 17:11 GLC 2M	12-JUN-09 17:13 GLC 3M	12-JUN-09 17:15 GLC 4M	12-JUN-09 17:17 GLC 5M	12-JUN-09 17:20 GLC 6M
Grouping	Analyte					
SEAWATER						
Physical Tests	Conductivity (uS/cm)	16300	16400	16400	16400	16400
	Hardness (as CaCO3) (mg/L)	2090	2050	2130	2100	2100
	pH (pH)	8.13	8.21	8.24	8.22	8.21
	Salinity (EC) (g/L)	9.9	10.0	10.0	9.9	10.0
	Total Suspended Solids (mg/L)	3.8	3.8	5.8	4.4	3.1
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	159	162	160	159	161
	Sulphide as S (mg/L)					<0.020
Cyanides	Cyanide, Total (mg/L)		<0.0050			
Total Metals	Aluminum (Al)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Antimony (Sb)-Total (mg/L)		0.00023			
	Arsenic (As)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Cadmium (Cd)-Total (mg/L)	0.000719	0.000688	0.000704	0.000701	0.000680
	Calcium (Ca)-Total (mg/L)	171	170	174	176	174
	Copper (Cu)-Total (mg/L)	0.00167	0.00114	0.00119	0.00112	0.00108
	Iron (Fe)-Total (mg/L)	0.051	<0.010	0.011	0.010	<0.010
	Lead (Pb)-Total (mg/L)	0.0110	0.000386	0.000442	0.000574	0.000275
	Magnesium (Mg)-Total (mg/L)	403	395	410	403	406
	Manganese (Mn)-Total (mg/L)	0.00664	0.00598	0.00603	0.00587	0.00565
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.0026	<0.0025	<0.0025	0.0025	0.0032
	Nickel (Ni)-Total (mg/L)	0.00544	0.00530	0.00536	0.00526	0.00518
	Zinc (Zn)-Total (mg/L)	0.266	0.264	0.272	0.260	0.254

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L779771-6	L779771-7	L779771-8	L779771-9	L779771-10
		12-JUN-09 17:24 GLC 7M	12-JUN-09 17:27 GLC 8M	12-JUN-09 17:30 GLC 9M	12-JUN-09 17:33 GLC 10M	12-JUN-09 17:36 GLC 11M
Grouping	Analyte					
SEAWATER						
Physical Tests	Conductivity (uS/cm)	16300	16300	16300	23900	81100
	Hardness (as CaCO3) (mg/L)	2100	2100	2190	3260	12800
	pH (pH)	8.21	8.21	8.20	8.11	8.11
	Salinity (EC) (g/L)	9.9	9.9	9.9	15.0	59.0
	Total Suspended Solids (mg/L)	<3.0	3.8	4.4	<3.0	21.1
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	163	161	160	166	406
	Sulphide as S (mg/L)					
Cyanides	Cyanide, Total (mg/L)				<0.0050	
Total Metals	Aluminum (Al)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.20
	Antimony (Sb)-Total (mg/L)				0.00025	
	Arsenic (As)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	0.00022
	Cadmium (Cd)-Total (mg/L)	0.000693	0.000687	0.000689	0.000963	0.000474
	Calcium (Ca)-Total (mg/L)	172	175	178	240	825
	Copper (Cu)-Total (mg/L)	0.00110	0.00108	0.00115	0.00129	0.00104
	Iron (Fe)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	0.060
	Lead (Pb)-Total (mg/L)	0.000265	0.000135	0.000145	0.000148	0.00115
	Magnesium (Mg)-Total (mg/L)	406	405	423	647	2620
	Manganese (Mn)-Total (mg/L)	0.00570	0.00565	0.00558	0.0208	0.161
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.0026	0.0025	0.0027	0.0033	<0.010
	Nickel (Ni)-Total (mg/L)	0.00515	0.00522	0.00512	0.00586	0.00882
	Zinc (Zn)-Total (mg/L)	0.257	0.261	0.255	0.452	0.381

		Sample ID	L779771-11	L779771-12	L779771-13	L779771-14	L779771-15
		Description					
		Sampled Date	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09
		Sampled Time	17:38	17:41	17:45	17:47	17:50
		Client ID	GLC 12M	GLC 13M	GLC 14M	GLC 15M	GLC 16M
Grouping	Analyte						
SEAWATER							
Physical Tests	Conductivity (uS/cm)	86800	88200	88600	88300	88100	
	Hardness (as CaCO3) (mg/L)	13300	13600	13700	14000	13600	
	pH (pH)	8.11	8.20	8.13	8.11	8.11	
	Salinity (EC) (g/L)	63.9	65.1	65.5	65.2	65.0	
	Total Suspended Solids (mg/L)	19.1	18.4	24.4	25.8	21.8	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	440	440	444	443	442	
	Sulphide as S (mg/L)			0.053			
Cyanides	Cyanide, Total (mg/L)						
Total Metals	Aluminum (Al)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30	
	Antimony (Sb)-Total (mg/L)						
	Arsenic (As)-Total (mg/L)	<0.00020	<0.00020	0.00032	0.00084	<0.00020	
	Cadmium (Cd)-Total (mg/L)	0.000022	<0.000020	<0.000020	<0.000020	<0.000020	
	Calcium (Ca)-Total (mg/L)	835	855	863	876	858	
	Copper (Cu)-Total (mg/L)	0.000409	0.000438	0.000337	0.000343	0.000317	
	Iron (Fe)-Total (mg/L)	0.090	0.361	0.369	0.371	0.365	
	Lead (Pb)-Total (mg/L)	0.000482	0.000827	0.000653	0.000608	0.000601	
	Magnesium (Mg)-Total (mg/L)	2720	2780	2790	2860	2790	
	Manganese (Mn)-Total (mg/L)	0.151	0.127	0.131	0.127	0.126	
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
	Molybdenum (Mo)-Total (mg/L)	<0.015	<0.015	<0.015	<0.015	<0.015	
	Nickel (Ni)-Total (mg/L)	0.00780	0.00540	0.00563	0.00533	0.00529	
	Zinc (Zn)-Total (mg/L)	0.0201	0.0146	0.0153	0.0153	0.0149	

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L779771-16	L779771-17	L779771-18	L779771-19	L779771-20
		12-JUN-09 17:52 GLC 17M	12-JUN-09 17:54 GLC 18M	12-JUN-09 17:58 GLC 19M	12-JUN-09 18:00 GLC 20M	12-JUN-09 18:04 GLC 22M
Grouping	Analyte					
SEAWATER						
Physical Tests	Conductivity (uS/cm)	87800	87900	87800	87700	88000
	Hardness (as CaCO3) (mg/L)	13700	13400	13600	13500	13500
	pH (pH)	8.10	8.11	8.09	8.11	8.19
	Salinity (EC) (g/L)	64.8	64.9	64.8	64.7	64.9
	Total Suspended Solids (mg/L)	21.8	27.1	17.8	8.4	20.4
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	442	436	440	443	443
	Sulphide as S (mg/L)				0.058	0.052
Cyanides	Cyanide, Total (mg/L)					
Total Metals	Aluminum (Al)-Total (mg/L)	<0.20	<0.30	<0.30	<0.30	<0.30
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Cadmium (Cd)-Total (mg/L)	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
	Calcium (Ca)-Total (mg/L)	856	833	862	850	838
	Copper (Cu)-Total (mg/L)	0.000320	0.000377	0.000362	0.000597	0.000323
	Iron (Fe)-Total (mg/L)	0.375	0.366	0.374	0.380	0.389
	Lead (Pb)-Total (mg/L)	0.000722	0.000613	0.000649	0.000699	0.000719
	Magnesium (Mg)-Total (mg/L)	2800	2750	2790	2770	2770
	Manganese (Mn)-Total (mg/L)	0.129	0.125	0.129	0.128	0.127
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.010	<0.015	<0.015	<0.015	<0.015
	Nickel (Ni)-Total (mg/L)	0.00558	0.00550	0.00553	0.00558	0.00571
	Zinc (Zn)-Total (mg/L)	0.0152	0.0151	0.0153	0.0154	0.0154

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID				
		Description				
		Sampled Date				
		Sampled Time				
		Client ID				
		L779771-21		L779771-22		
		12-JUN-09		12-JUN-09		
		18:30		18:44		
		GLC 30M		GLC 40M		
Grouping	Analyte					
SEAWATER						
Physical Tests	Conductivity (uS/cm)	86600		87900		
	Hardness (as CaCO3) (mg/L)	13400		13900		
	pH (pH)	8.10		8.07		
	Salinity (EC) (g/L)	63.7		64.8		
	Total Suspended Solids (mg/L)	24.4		132		
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	435		422		
	Sulphide as S (mg/L)	0.82		2.03		
Cyanides	Cyanide, Total (mg/L)					
Total Metals	Aluminum (Al)-Total (mg/L)	<0.20		<0.30		
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)	<0.00020		<0.00020		
	Cadmium (Cd)-Total (mg/L)	0.000031		<0.000020		
	Calcium (Ca)-Total (mg/L)	838		867		
	Copper (Cu)-Total (mg/L)	0.000274		0.000243		
	Iron (Fe)-Total (mg/L)	0.322		0.178		
	Lead (Pb)-Total (mg/L)	0.000607		0.000332		
	Magnesium (Mg)-Total (mg/L)	2740		2840		
	Manganese (Mn)-Total (mg/L)	0.108		0.0745		
	Mercury (Hg)-Total (mg/L)	<0.000010		<0.000010		
	Molybdenum (Mo)-Total (mg/L)	<0.010		<0.015		
	Nickel (Ni)-Total (mg/L)	0.00320		0.00138		
	Zinc (Zn)-Total (mg/L)	0.0261		0.0119		

Reference Information

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comments
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Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
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ALK-C-COL-VA Seawater Alkalinity by Colourimetric (seawater) APHA 310.2

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

AS-T-HVAF-VA Seawater Total Arsenic in Seawater by HVAFS PUGET SOUND PRT/ISO 17378&9-1 2006:DRAFT

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by atomic fluorescence spectrophotometry (ISO/CD 17378&9-1 2006: DRAFT).

CN-C-T-MID-HH-COL-VA Seawater Total Cyanide by HH Distil. (seawater) APHA 4500-CN Cyanide

This analysis is carried out using procedures adapted from APHA Method 4500-CN "Cyanide". Total or strong acid dissociable (SAD) cyanide are determined by sample distillation and analysis using the chloramine-T colourimetric method.

EC-C-PCT-VA Seawater Conductivity (Automated) (seawater) APHA 2510 Auto. Conduc.

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

HARDNESS-CALC-VA Seawater Hardness APHA 2340B

Hardness is calculated from Calcium and Magnesium concentrations, and is expressed as calcium carbonate equivalents.

HG-TOT-C-CVAFS-VA Seawater Total Mercury in Seawater by CVAFS PUGET SOUND PROTOCOLS, EPA 245.7

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedure involves a cold-oxidation of the acidified seawater sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

MET-TOT-C-ICP-VA Seawater Total Metals in Seawater by ICPOES PUGET SOUND PROTOCOLS, EPA 6010B

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-TOT-C-LOW-MS-VA Seawater Total Metals in Seawater by ICPMS PUGET SOUND PROTOCOLS, EPA 6020A

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion or filtration (EPA Method 3005A). Instrumental analysis is by atomic inductively coupled plasma - mass spectrometry (EPA Method 6020A).

MET-TOT-SPE-MS-VA Seawater Total Metals in Seawater by SPE ICPMS PUGET SOUND PROTOCOLS, EPA 6020A

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995, and with procedures adapted from Cetac Technologies Incorporated. A suspended particulate resin (SPR), consisting of immobilized iminodiacetate (IDA) on a divinylbenzene polymer, is used to chelate and preconcentrate metals in seawater. Instrumental analysis is by inductively coupled plasma mass spectrometry (ICPMS).

PH-C-PCT-VA Seawater pH by Meter (Automated) (seawater) APHA 4500-H pH Value

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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
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S2-C-T-COL-VA Seawater Tot. Sulphide by Colorimetric (seawater) APHA 4500-S2 Sulphide

This analysis is carried out using procedures adapted from APHA Method 4500-S2 "Sulphide". Sulphide is determined using the methylene blue colourimetric method.

SALINITY-C-EC-VA Seawater Salinity by calc. using EC (seawater) APHA 2520 B

This analysis is carried out using procedures adapted from APHA Method 2520 "Salinity". Salinity is determined using a samples conductivity and the Practical Salinity Scale.

SB-T-HVAF-VA Seawater Total Antimony in Seawater by HVAFS PUGET SOUND PRT/ISO 17378&9-1 2006:DRAFT

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by atomic fluorescence spectrophotometry (ISO/CD 17378&9-1 2006: DRAFT).

TSS-C-VA Seawater Solids by Gravimetric (seawater) APHA 2540 Gravimetric

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

**** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.**

The last two letters of the above ALS Test Code column indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
VA	ALS LABORATORY GROUP - VANCOUVER, BC, CANADA		

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in enviromental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

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.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.



Environmental Division

Report To				Report Format / Distribution				Service Requested: (Rush subject to availability)																							
Company: <u>Teck Resources Ltd.</u>				Standard: ☒ Other (specify):				☒ Regular (Standard Turnaround Times))																							
Contact: <u>Bruce Donald</u>				Select: PDF ☒ Excel ☒ Digital ☐ Fax ☐				Priority, Date Req'd: _____ (Surcharges apply)																							
Address: <u>Bag 2000 Kimberley, BC</u>				Email 1: <u>bruce.donald@teck.com</u>				Emergency (1 Business Day) - 100% Surcharge																							
<u>VIA 361</u>				Email 2:				For Emergency < 1 Day, ASAP or Weekend - Contact ALS																							
Phone: <u>250-427-8405</u> Fax: <u>250-427-8451</u>																															
Invoice To Same as Report? (circle) <u>Yes</u> or No (if No, provide details)				Client / Project Information				Analysis Request																							
Copy of Invoice with Report? (circle) Yes or No				Job #: <u>112986</u>				(Indicate Filtered or Preserved, F/P)																							
Company:				PO / AFE:				<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">pH</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">Conductivity</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">Salinity</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">TSS</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">Alkalinity</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">Hardness</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Metals (seawater)</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">Sulphide</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Antimony</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Cyanide</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">Number of Containers</td> </tr> <tr></tr> <tr></tr> <tr></tr> </table>										pH	Conductivity	Salinity	TSS	Alkalinity	Hardness	Total Metals (seawater)	Sulphide	Total Antimony	Total Cyanide	Number of Containers			
pH	Conductivity	Salinity	TSS	Alkalinity	Hardness	Total Metals (seawater)	Sulphide																						Total Antimony	Total Cyanide	Number of Containers
Contact:				LSD: <u>Polaris mine</u>																											
Address:																															
Phone:				Quote #:																											
Lab Work Order # (lab use only) <u>L779771</u>				ALS Contact:				Sampler: <u>C. Kidd</u>																							
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	pH	Conductivity	Salinity	TSS	Alkalinity	Hardness	Total Metals (seawater)	Sulphide	Total Antimony	Total Cyanide	Number of Containers																
1	GLC 2m	12/06/09	5:11 pm	Seawater	X	X	X	X	X	X	X																				
2	GLC 3m	"	5:13	"	X	X	X	X	X	X	X		X	X																	
3	GLC 4m	"	5:15	"	X	X	X	X	X	X	X																				
4	GLC 5m	"	5:17	"	X	X	X	X	X	X	X																				
5	GLC 6m	"	5:20	"	X	X	X	X	X	X	X	X																			
6	GLC 7m	"	5:24	"	X	X	X	X	X	X	X																				
7	GLC 8m	"	5:27	"	X	X	X	X	X	X	X																				
8	GLC 9m	"	5:30	"	X	X	X	X	X	X	X																				
9	GLC 10m	"	5:33	"	X	X	X	X	X	X	X		X	X																	
10	GLC 11m	"	5:36	"	X	X	X	X	X	X	X																				
11	GLC 12m	"	5:38	"	X	X	X	X	X	X	X																				
12	GLC 13m	"	5:41	"	X	X	X	X	X	X	X																				
Special Instructions / Regulations / Hazardous Details																															
Water is hypersaline, for TSS measurement run 1-2 L distilled through filter CC: alexdvm@SRK.com Total metals have been preserved with HNO3; No preservative for general parameters. Sulfide has been preserved with NaOH and Zinc Acetate.																															
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																															
By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.																															
SHIPMENT RELEASE (client use)				SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)																							
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations:																					
<u>Curtis Kidd</u>	<u>June 13/09</u>	<u>1:00 pm</u>	<u>HD</u>	<u>09/06/17</u>	<u>2:59</u>	<u>8 °C</u>					Yes / No ? If Yes add SIF																				



Report To			Report Format / Distribution			Service Requested: (Rush subject to availability)												
Company: <u>Teck Resources Limited</u>			Standard: ☒ Other (specify):			☒ Regular (Standard Turnaround Times))												
Contact: <u>Bruce Donald</u>			Select: PDF ☒ Excel ☒ Digital ☐ Fax ☐			Priority, Date Req'd: _____ (Surcharges apply)												
Address: <u>Bag 2000</u>			Email 1:			Emergency (1 Business Day) - 100% Surcharge												
<u>Kimberley BC V1A 3E1</u>			Email 2:			For Emergency < 1 Day, ASAP or Weekend - Contact ALS												
Phone: <u>250-427-8405</u> Fax: <u>250-427-8451</u>																		
Invoice To Same as Report ? (circle) ☒ Yes or No (if No, provide details)			Client / Project Information			Analysis Request												
Copy of Invoice with Report? (circle) Yes or No			Job #: <u>112986</u>			(Indicate Filtered or Preserved, F/P)												
Company:			PO / AFE:															
Contact:			LSD: <u>Polaris mine</u>															
Address:																		
Phone:			Quote #:															
Fax:																		
Lab Work Order # (lab use only)			ALS Contact:			Sampler: <u>C. Kidd</u>												
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	pH	Conductivity	Salinity	TSS	Alkalinity	Hardness	Total metals seawater	Sulphide	Total Antimony	Total Cyanide	Number of Containers			
13	GLC-14m	12/06/09	5:45pm	Seawater	X	X	X	X	X	X	X	X						
14	GLC-15m	"	5:47	"	X	X	X	X	X	X	X							
15	GLC-16m	"	5:50	"	X	X	X	X	X	X	X							
16	GLC-17m	"	5:52	"	X	X	X	X	X	X	X							
17	GLC-18m	"	5:54	"	X	X	X	X	X	X	X							
18	GLC-19m	"	5:58	"	X	X	X	X	X	X	X							
19	GLC-20m	"	6:00	"	X	X	X	X	X	X	X	X						
20	GLC-22m	"	6:04	"	X	X	X	X	X	X	X	X						
21	GLC-30m	"	6:30	"	X	X	X	X	X	X	X	X						
22	GLC-40m	"	6:44	"	X	X	X	X	X	X	X	X						

Special Instructions / Regulations / Hazardous Details

Refer to page 1

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

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

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)			SHIPMENT VERIFICATION (lab use only)				
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations:
<u>Cynthia Kidd</u>	<u>June 13/09</u>	<u>1:00 pm</u>	<u>HTD</u>	<u>06/06/09</u>	<u>1455</u>	<u>9 °C</u>				Yes / No ? If Yes add SIF

POLARIS MINE - 2009 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
DATA RESULTS FOR STATION 262-3a

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779770
Date Received 17-Jun-09
Date 02-Jul-09

RESULTS OF ANALYSIS

Sample ID	GLS 2M	GLS 3M	GLS 4M	GLS 5M	GLS 6M	GLS 7M	GLS 8M	GLS 9M	GLS 10M	GLS 11M
Date Sampled	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09
Time Sampled	15:00	15:02	15:05	15:08	15:12	15:15	15:18	15:21	15:23	15:25
ALS Sample ID	L779770-1	L779770-2	L779770-3	L779770-4	L779770-5	L779770-6	L779770-7	L779770-8	L779770-9	L779770-10
Matrix	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater

Physical Tests

Conductivity	16300	16200	16300	16200	16200	16200	16200	16300	43000	86500
Hardness (as CaCO3)	2130	2130	2130	2160	2100	2120	2060	2060	6310	13700
pH	8.12	8.17	8.17	8.18	8.19	8.18	8.18	8.17	8.05	8.06
Salinity (EC)	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	28.7	63.6
Total Suspended Solids	17.1	<3.0	5.1	3.8	4.4	3.8	5.1	5.1	9.8	12.4

Anions and Nutrients

Alkalinity, Total (as CaCO3)	159	159	152	158	159	158	159	158	213	435
Sulphide as S	-	-	-	-	<0.020	-	-	-	-	-

Cyanides

Cyanide, Total	-	<0.0050	-	-	-	-	-	-	<0.0050	-
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Total Metals

Aluminum (Al)-Total	0.655	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.10	<0.20
Antimony (Sb)-Total	-	<0.00020	-	-	-	-	-	-	0.00044	-
Arsenic (As)-Total	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cadmium (Cd)-Total	0.000926	0.000654	0.000672	0.000653	0.000653	0.000745	0.000683	0.000689	0.00153	0.000061
Calcium (Ca)-Total	174	173	174	176	171	173	170	170	429	870
Copper (Cu)-Total	0.0118	0.00159	0.00142	0.00119	0.00130	0.00124	0.00112	0.00109	0.00199	0.000602
Iron (Fe)-Total	0.139	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.072
Lead (Pb)-Total	0.0616	0.00152	0.00629	0.00301	0.00119	0.000347	0.000264	0.000420	0.000733	0.000786
Magnesium (Mg)-Total	411	412	412	417	406	409	398	397	1270	2800
Manganese (Mn)-Total	0.00792	0.00586	0.00589	0.00579	0.00579	0.00649	0.00588	0.00597	0.0675	0.152
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	<0.0025	<0.0025	0.0028	0.0026	<0.0025	<0.0025	<0.0025	<0.0025	<0.0050	<0.010
Nickel (Ni)-Total	0.00611	0.00557	0.00564	0.00559	0.00559	0.00540	0.00498	0.00510	0.00771	0.00779
Zinc (Zn)-Total	0.282	0.271	0.272	0.275	0.276	0.281	0.253	0.256	0.704	0.0375

POLARIS MINE - 2009 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
DATA RESULTS FOR STATION 262-3a

Project
Report To
ALS File No.
Date Received
Date

RESULTS OF ANALYSIS

Sample ID	GLS 12M	GLS 13M	GLS 14M	GLS 15M	GLS 16M	GLS 17M	GLS 18M	GLS 19M	GLS 20M
Date Sampled	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09
Time Sampled	15:28	15:30	15:32	15:34	15:36	15:38	15:42	15:46	15:53
ALS Sample ID	L779770-11	L779770-12	L779770-13	L779770-14	L779770-15	L779770-16	L779770-17	L779770-18	L779770-19
Matrix	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater

Physical Tests

Conductivity	86900	87700	87700	87600	87400	87500	87500	88000	87900
Hardness (as CaCO ₃)	13300	13600	13700	14100	13600	13700	13700	13500	13900
pH	8.06	8.06	8.07	8.06	8.08	8.05	8.07	8.10	8.11
Salinity (EC)	64.0	64.7	64.6	64.4	64.4	64.5	64.5	64.9	64.9
Total Suspended Solids	14.4	12.4	13.1	22.4	20.4	7.8	9.8	6.4	4.4

Anions and Nutrients

Alkalinity, Total (as CaCO ₃)	444	443	444	437	446	444	451	448	449
Sulphide as S	-	-	0.058	-	-	-	-	-	0.054

Cyanides

Cyanide, Total	-	-	-	-	-	-	-	-	-
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Total Metals

Aluminum (Al)-Total	<0.20	<0.30	<0.20	<0.30	<0.20	<0.30	<0.30	<0.30	<0.30
Antimony (Sb)-Total	-	-	-	-	-	-	-	-	-
Arsenic (As)-Total	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cadmium (Cd)-Total	0.000026	<0.000020	<0.000020	0.000026	<0.000020	0.000022	<0.000020	<0.000020	<0.000020
Calcium (Ca)-Total	828	868	863	889	854	869	876	839	877
Copper (Cu)-Total	0.000426	0.000474	0.000337	0.000423	0.000339	0.000408	0.000403	0.000386	0.000405
Iron (Fe)-Total	0.094	0.382	0.396	0.358	0.347	0.350	0.375	0.371	0.342
Lead (Pb)-Total	0.000844	0.00150	0.000780	0.000745	0.000738	0.000711	0.000792	0.000902	0.000687
Magnesium (Mg)-Total	2720	2780	2810	2880	2780	2800	2810	2760	2840
Manganese (Mn)-Total	0.142	0.114	0.119	0.118	0.113	0.113	0.111	0.112	0.114
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	<0.010	<0.015	<0.010	<0.015	<0.010	<0.015	<0.015	<0.015	<0.015
Nickel (Ni)-Total	0.00741	0.00500	0.00527	0.00533	0.00514	0.00505	0.00496	0.00504	0.00517
Zinc (Zn)-Total	0.0195	0.0149	0.0149	0.0144	0.0142	0.0145	0.0143	0.0139	0.0141

Project	112986
Report To	BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No.	L779770
Date Received	17-Jun-09
Date	02-Jul-09

[illegible][illegible]

Alkalinity, Total (as CaCO3)	2	2	2	2	2	2	2	2	2	2
Sulphide as S	-	-	-	-	0.02	-	-	-	-	-

[illegible][illegible]

Project
Report To
ALS File No.
Date Received
Date

[illegible]

Physical Tests								
Conductivity	2	2	2	2	2	2	2	2
Hardness (as CaCO ₃)	7	7	7	7	7	7	7	7
pH	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Salinity (EC)	1	1	1	1	1	1	1	1
Total Suspended Solids	3	3	3	3	3	3	3	3

Alkalinity, Total (as CaCO3)	2	2	2	2	2	2	2
Sulphide as S	-	0.02	-	-	-	-	0.02

Cyanide, Total	-	-	-	-	-	-	-
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[illegible]

Project	112986
Report To	BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No.	L779770
Date Received	17-Jun-09
Date	02-Jul-09

[illegible][illegible]

Alkalinity, Total (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sulphide as S	-	-	-	-	mg/L	-	-	-	-	-	-

Cyanide, Total	-	mg/L	-	-	-	-	-	-	mg/L	-
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[illegible]

Project
Report To
ALS File No.
Date Received
Date

[illegible][illegible]

Alkalinity, Total (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sulphide as S	-	mg/L	-	-	-	-	-	mg/L

Cyanide, Total	-	-	-	-	-	-	-	-
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[illegible]

POLARIS MINE - 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
 REPLICATE RESULTS - STATION 262-3a

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779770
Date Received 17-Jun-09
Date 02-Jul-09

REPLICATE RESULTS

Sample ID	Matrix	ALS ID	Analyte	Replicate 1	Replicate 2	Units	RPD	RPD Limit	Diff	Diff Limit	Qualifier
Physical Tests											
L779770-1	Seawater	WG964967-3	Total Suspended Solids	17.1	17.1	mg/L	-	-	0.0	12	J
Total Metals											
L779770-15	Seawater	WG962257-2	Cadmium (Cd)-Total	<0.000020	<0.000020	mg/L	N/A	20	-	-	RPD-NA
L779770-15	Seawater	WG962257-2	Copper (Cu)-Total	0.000339	0.000363	mg/L	-	-	0.000024	0.0002	J
L779770-15	Seawater	WG962257-2	Iron (Fe)-Total	0.347	0.355	mg/L	2.2	20	-	-	-
L779770-15	Seawater	WG962257-2	Lead (Pb)-Total	0.000738	0.000740	mg/L	0.34	20	-	-	-
L779770-15	Seawater	WG962257-2	Manganese (Mn)-Total	0.113	0.116	mg/L	2.3	20	-	-	-
L779770-15	Seawater	WG962257-2	Nickel (Ni)-Total	0.00514	0.00515	mg/L	0.24	20	-	-	-
L779770-15	Seawater	WG962257-2	Zinc (Zn)-Total	0.0142	0.0141	mg/L	0.65	20	-	-	-

POLARIS MINE - 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
QUALITY CONTROL RESULTS - STATION 262-3a

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779770
Date Received 17-Jun-09
Date 02-Jul-09

QUALITY CONTROL RESULTS

Matrix	QC Type	Analyte	QC Spl. No.	Reference	Result	Target	Units	%	Limits	Qualifier
Physical Tests										
Seawater	CRM	Conductivity	WG961335-6	VA-EC-PCT-CONTROL	146	147	uS/cm	99	90-110	
Seawater	CRM	pH	WG961335-7	VA-PH7-BUF	6.98	7.00	pH	6.98	6.9-7.1	
Seawater	CRM	Total Suspended Solids	WG964967-2	VA-TSS-INFUS-75	75.7	75.0	mg/L	101	80-120	
Seawater	CRM	Total Suspended Solids	WG964967-5	VA-TSS-INFUS-75	67.7	75.0	mg/L	90	80-120	
Seawater	CRM	Total Suspended Solids	WG964967-8	VA-TSS-INFUS-75	73.7	75.0	mg/L	98	80-120	
Seawater	MB	Conductivity	WG961335-2		<2.0	<2	uS/cm	-	2	
Seawater	MB	Conductivity	WG961335-3		<2.0	<2	uS/cm	-	2	
Seawater	MB	Conductivity	WG961335-4		<2.0	<2	uS/cm	-	2	
Seawater	MB	Salinity (EC)	WG962530-1		<1.0	<1	g/L	-	1	
Seawater	MB	Total Suspended Solids	WG964967-1		<3.0	<3	mg/L	-	3	
Seawater	MB	Total Suspended Solids	WG964967-4		<3.0	<3	mg/L	-	3	
Seawater	MB	Total Suspended Solids	WG964967-7		<3.0	<3	mg/L	-	3	
Anions and Nutrients										
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-3	VA-ALKL-CONTROL	14.9	15.0	mg/L	99	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-6	VA-ALKM-CONTROL	81.0	75.0	mg/L	108	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-9	VA-ALKH-CONTROL	253	250	mg/L	101	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-12	VA-ALKL-CONTROL	15.1	15.0	mg/L	101	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-15	VA-ALKM-CONTROL	79.6	75.0	mg/L	106	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-18	VA-ALKH-CONTROL	259	250	mg/L	104	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-21	VA-ALKL-CONTROL	15.3	15.0	mg/L	102	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-24	VA-ALKM-CONTROL	80.5	75.0	mg/L	107	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-27	VA-ALKH-CONTROL	252	250	mg/L	101	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-30	VA-ALKL-CONTROL	14.7	15.0	mg/L	98	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-33	VA-ALKM-CONTROL	81.8	75.0	mg/L	109	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-36	VA-ALKH-CONTROL	252	250	mg/L	101	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-39	VA-ALKL-CONTROL	15.0	15.0	mg/L	100	85-115	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-2		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-5		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-8		<2.0	<2	mg/L	-	2	
Seawater	MB	Sulphide as S	WG961790-1		<0.020	<0.02	mg/L	-	0.02	
Seawater	MB	Sulphide as S	WG961790-2		<0.020	<0.02	mg/L	-	0.02	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-11		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-14		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-17		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-20		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-23		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-26		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-29		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-32		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-35		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-38		<2.0	<2	mg/L	-	2	
Total Metals										
Seawater	CRM	Antimony (Sb)-Total	WG959429-4	VA-HIGH-WATRM	0.855	1.00	mg/L	85	80-120	
Seawater	CRM	Antimony (Sb)-Total	WG959429-4	VA-HIGH-WATRM	0.855	1.00	mg/L	85	80-120	
Seawater	CRM	Arsenic (As)-Total	WG959429-4	VA-HIGH-WATRM	0.891	1.00	mg/L	89	80-120	
Seawater	CRM	Arsenic (As)-Total	WG959429-4	VA-HIGH-WATRM	0.891	1.00	mg/L	89	80-120	
Seawater	CRM	Copper (Cu)-Total	WG961675-3	VA-NRC-CASS4	0.000630	0.000592	mg/L	106	80-120	
Seawater	CRM	Manganese (Mn)-Total	WG961675-3	VA-NRC-CASS4	0.00266	0.00278	mg/L	96	80-120	
Seawater	CRM	Nickel (Ni)-Total	WG961675-3	VA-NRC-CASS4	0.000337	0.000314	mg/L	107	80-120	
Seawater	CRM	Manganese (Mn)-Total	WG961675-4	VA-NRC-NASS5	0.000939	0.000919	mg/L	102	80-120	
Seawater	CRM	Copper (Cu)-Total	WG962257-3	VA-NRC-CASS4	0.000689	0.000592	mg/L	116	80-120	
Seawater	CRM	Manganese (Mn)-Total	WG962257-3	VA-NRC-CASS4	0.00258	0.00278	mg/L	93	80-120	
Seawater	CRM	Nickel (Ni)-Total	WG962257-3	VA-NRC-CASS4	0.000295	0.000314	mg/L	94	80-120	
Seawater	CRM	Copper (Cu)-Total	WG962257-4	VA-NRC-NASS5	0.000340	0.000297	mg/L	114	80-120	
Seawater	CRM	Manganese (Mn)-Total	WG962257-4	VA-NRC-NASS5	0.000814	0.000919	mg/L	89	80-120	
Seawater	CRM	Nickel (Ni)-Total	WG962257-4	VA-NRC-NASS5	0.000244	0.000253	mg/L	97	80-120	
Seawater	CRM	Mercury (Hg)-Total	WG962375-2	VA-HG-WATRM	0.000094	0.000100	mg/L	94	88-112	
Seawater	MB	Antimony (Sb)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Antimony (Sb)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Arsenic (As)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Arsenic (As)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Cadmium (Cd)-Total	WG961675-1		<0.000020	<0.00002	mg/L	-	0.00002	
Seawater	MB	Copper (Cu)-Total	WG961675-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Iron (Fe)-Total	WG961675-1		<0.010	<0.01	mg/L	-	0.01	
Seawater	MB	Lead (Pb)-Total	WG961675-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Manganese (Mn)-Total	WG961675-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Nickel (Ni)-Total	WG961675-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Zinc (Zn)-Total	WG961675-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Cadmium (Cd)-Total	WG962257-1		<0.000020	<0.00002	mg/L	-	0.00002	
Seawater	MB	Copper (Cu)-Total	WG962257-1		0.000082	<0.00005	mg/L	-	0.00005	MB-LOR
Seawater	MB	Iron (Fe)-Total	WG962257-1		<0.010	<0.01	mg/L	-	0.01	
Seawater	MB	Lead (Pb)-Total	WG962257-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Manganese (Mn)-Total	WG962257-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Nickel (Ni)-Total	WG962257-1		0.000057	<0.00005	mg/L	-	0.00005	MB-LOR
Seawater	MB	Zinc (Zn)-Total	WG962257-1		0.000072	<0.00005	mg/L	-	0.00005	MB-LOR
Seawater	MB	Mercury (Hg)-Total	WG962375-1		<0.000010	<0.00001	mg/L	-	0.00001	



Environmental Division

Certificate of Analysis

TECK COMINCO METALS LTD.

ATTN: BRUCE DONALD

BAG 2000

KIMBERLEY BC V1A 3E1

Report Date: 02-JUL-09 17:32 (MT)

Version: FINAL

Lab Work Order #: L779770

Date Received: 17-JUN-09

Project P.O. #: 7696

Job Reference: 112986

Legal Site Desc: POLARIS MINE

CofC Numbers: 09-026759, 09-026761

Other Information:

Comments: Please note that some of the metals detection limits have been increased due to interferences encountered during analysis.


LINDSAY JONES
Account Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L779770-1	L779770-2	L779770-3	L779770-4	L779770-5
		12-JUN-09 15:00 GLS 2M	12-JUN-09 15:02 GLS 3M	12-JUN-09 15:05 GLS 4M	12-JUN-09 15:08 GLS 5M	12-JUN-09 15:12 GLS 6M
Grouping	Analyte					
SEAWATER						
Physical Tests	Conductivity (uS/cm)	16300	16200	16300	16200	16200
	Hardness (as CaCO3) (mg/L)	2130	2130	2130	2160	2100
	pH (pH)	8.12	8.17	8.17	8.18	8.19
	Salinity (EC) (g/L)	9.9	9.9	9.9	9.9	9.9
	Total Suspended Solids (mg/L)	17.1	<3.0	5.1	3.8	4.4
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	159	159	152	158	159
	Sulphide as S (mg/L)					<0.020
Cyanides	Cyanide, Total (mg/L)		<0.0050			
Total Metals	Aluminum (Al)-Total (mg/L)	0.655	<0.050	<0.050	<0.050	<0.050
	Antimony (Sb)-Total (mg/L)		<0.00020			
	Arsenic (As)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Cadmium (Cd)-Total (mg/L)	0.000926	0.000654	0.000672	0.000653	0.000653
	Calcium (Ca)-Total (mg/L)	174	173	174	176	171
	Copper (Cu)-Total (mg/L)	0.0118	0.00159	0.00142	0.00119	0.00130
	Iron (Fe)-Total (mg/L)	0.139	<0.010	0.011	<0.010	<0.010
	Lead (Pb)-Total (mg/L)	0.0616	0.00152	0.00629	0.00301	0.00119
	Magnesium (Mg)-Total (mg/L)	411	412	412	417	406
	Manganese (Mn)-Total (mg/L)	0.00792	0.00586	0.00589	0.00579	0.00579
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.0025	<0.0025	0.0028	0.0026	<0.0025
	Nickel (Ni)-Total (mg/L)	0.00611	0.00557	0.00564	0.00559	0.00559
	Zinc (Zn)-Total (mg/L)	0.282	0.271	0.272	0.275	0.276

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L779770-6	L779770-7	L779770-8	L779770-9	L779770-10
		12-JUN-09 15:15 GLS 7M	12-JUN-09 15:18 GLS 8M	12-JUN-09 15:21 GLS 9M	12-JUN-09 15:23 GLS 10M	12-JUN-09 15:25 GLS 11M
Grouping	Analyte					
SEAWATER						
Physical Tests	Conductivity (uS/cm)	16200	16200	16300	43000	86500
	Hardness (as CaCO3) (mg/L)	2120	2060	2060	6310	13700
	pH (pH)	8.18	8.18	8.17	8.05	8.06
	Salinity (EC) (g/L)	9.9	9.9	9.9	28.7	63.6
	Total Suspended Solids (mg/L)	3.8	5.1	5.1	9.8	12.4
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	158	159	158	213	435
	Sulphide as S (mg/L)					
Cyanides	Cyanide, Total (mg/L)				<0.0050	
Total Metals	Aluminum (Al)-Total (mg/L)	<0.050	<0.050	<0.050	<0.10	<0.20
	Antimony (Sb)-Total (mg/L)				0.00044	
	Arsenic (As)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Cadmium (Cd)-Total (mg/L)	0.000745	0.000683	0.000689	0.00153	0.000061
	Calcium (Ca)-Total (mg/L)	173	170	170	429	870
	Copper (Cu)-Total (mg/L)	0.00124	0.00112	0.00109	0.00199	0.000602
	Iron (Fe)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	0.072
	Lead (Pb)-Total (mg/L)	0.000347	0.000264	0.000420	0.000733	0.000786
	Magnesium (Mg)-Total (mg/L)	409	398	397	1270	2800
	Manganese (Mn)-Total (mg/L)	0.00649	0.00588	0.00597	0.0675	0.152
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.0025	<0.0025	<0.0025	<0.0050	<0.010
	Nickel (Ni)-Total (mg/L)	0.00540	0.00498	0.00510	0.00771	0.00779
	Zinc (Zn)-Total (mg/L)	0.281	0.253	0.256	0.704	0.0375

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L779770-11	L779770-12	L779770-13	L779770-14	L779770-15
		12-JUN-09 15:28 GLS 12M	12-JUN-09 15:30 GLS 13M	12-JUN-09 15:32 GLS 14M	12-JUN-09 15:34 GLS 15M	12-JUN-09 15:36 GLS 16M
Grouping	Analyte					
SEAWATER						
Physical Tests	Conductivity (uS/cm)	86900	87700	87700	87600	87400
	Hardness (as CaCO3) (mg/L)	13300	13600	13700	14100	13600
	pH (pH)	8.06	8.06	8.07	8.06	8.08
	Salinity (EC) (g/L)	64.0	64.7	64.6	64.4	64.4
	Total Suspended Solids (mg/L)	14.4	12.4	13.1	22.4	20.4
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	444	443	444	437	446
	Sulphide as S (mg/L)			0.058		
Cyanides	Cyanide, Total (mg/L)					
Total Metals	Aluminum (Al)-Total (mg/L)	<0.20	<0.30	<0.20	<0.30	<0.20
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Cadmium (Cd)-Total (mg/L)	0.000026	<0.000020	<0.000020	0.000026	<0.000020
	Calcium (Ca)-Total (mg/L)	828	868	863	889	854
	Copper (Cu)-Total (mg/L)	0.000426	0.000474	0.000337	0.000423	0.000339
	Iron (Fe)-Total (mg/L)	0.094	0.382	0.396	0.358	0.347
	Lead (Pb)-Total (mg/L)	0.000844	0.00150	0.000780	0.000745	0.000738
	Magnesium (Mg)-Total (mg/L)	2720	2780	2810	2880	2780
	Manganese (Mn)-Total (mg/L)	0.142	0.114	0.119	0.118	0.113
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.010	<0.015	<0.010	<0.015	<0.010
	Nickel (Ni)-Total (mg/L)	0.00741	0.00500	0.00527	0.00533	0.00514
	Zinc (Zn)-Total (mg/L)	0.0195	0.0149	0.0149	0.0144	0.0142

Sample ID Description Sampled Date Sampled Time Client ID		L779770-16	L779770-17	L779770-18	L779770-19	
		12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	
		15:38	15:42	15:46	15:53	
		GLS 17M	GLS 18M	GLS 19M	GLS 20M	
Grouping	Analyte					
SEAWATER						
Physical Tests	Conductivity (uS/cm)	87500	87500	88000	87900	
	Hardness (as CaCO3) (mg/L)	13700	13700	13500	13900	
	pH (pH)	8.05	8.07	8.10	8.11	
	Salinity (EC) (g/L)	64.5	64.5	64.9	64.9	
	Total Suspended Solids (mg/L)	7.8	9.8	6.4	4.4	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	444	451	448	449	
	Sulphide as S (mg/L)				0.054	
Cyanides	Cyanide, Total (mg/L)					
Total Metals	Aluminum (Al)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	
	Cadmium (Cd)-Total (mg/L)	0.000022	<0.000020	<0.000020	<0.000020	
	Calcium (Ca)-Total (mg/L)	869	876	839	877	
	Copper (Cu)-Total (mg/L)	0.000408	0.000403	0.000386	0.000405	
	Iron (Fe)-Total (mg/L)	0.350	0.375	0.371	0.342	
	Lead (Pb)-Total (mg/L)	0.000711	0.000792	0.000902	0.000687	
	Magnesium (Mg)-Total (mg/L)	2800	2810	2760	2840	
	Manganese (Mn)-Total (mg/L)	0.113	0.111	0.112	0.114	
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	
	Molybdenum (Mo)-Total (mg/L)	<0.015	<0.015	<0.015	<0.015	
	Nickel (Ni)-Total (mg/L)	0.00505	0.00496	0.00504	0.00517	
	Zinc (Zn)-Total (mg/L)	0.0145	0.0143	0.0139	0.0141	

Reference Information

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comments
Methods Listed (if applicable):			
ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
ALK-C-COL-VA	Seawater	Alkalinity by Colourimetric (seawater)	APHA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
AS-T-HVAF-VA	Seawater	Total Arsenic in Seawater by HVAFS	PUGET SOUND PRT/ISO 17378&9-1 2006:DRAFT
This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by atomic fluorescence spectrophotometry (ISO/CD 17378&9-1 2006: DRAFT).			
CN-C-T-MID-HH-COL-VA	Seawater	Total Cyanide by HH Distil. (seawater)	APHA 4500-CN Cyanide
This analysis is carried out using procedures adapted from APHA Method 4500-CN "Cyanide". Total or strong acid dissociable (SAD) cyanide are determined by sample distillation and analysis using the chloramine-T colourimetric method.			
EC-C-PCT-VA	Seawater	Conductivity (Automated) (seawater)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
HARDNESS-CALC-VA	Seawater	Hardness	APHA 2340B
Hardness is calculated from Calcium and Magnesium concentrations, and is expressed as calcium carbonate equivalents.			
HG-TOT-C-CVAFS-VA	Seawater	Total Mercury in Seawater by CVAFS	PUGET SOUND PROTOCOLS, EPA 245.7
This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedure involves a cold-oxidation of the acidified seawater sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-TOT-C-ICP-VA	Seawater	Total Metals in Seawater by ICPOES	PUGET SOUND PROTOCOLS, EPA 6010B
This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
MET-TOT-C-LOW-MS-VA	Seawater	Total Metals in Seawater by ICPMS	PUGET SOUND PROTOCOLS, EPA 6020A
This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion or filtration (EPA Method 3005A). Instrumental analysis is by atomic inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
MET-TOT-SPE-MS-VA	Seawater	Total Metals in Seawater by SPE ICPMS	PUGET SOUND PROTOCOLS, EPA 6020A
This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995, and with procedures adapted from Cetac Technologies Incorporated. A suspended particulate resin (SPR), consisting of immobilized iminodiacetate (IDA) on a divinylbenzene polymer, is used to chelate and preconcentrate metals in seawater. Instrumental analysis is by inductively coupled plasma mass spectrometry (ICPMS).			
PH-C-PCT-VA	Seawater	pH by Meter (Automated) (seawater)	APHA 4500-H pH Value
This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode			

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
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S2-C-T-COL-VA Seawater Tot. Sulphide by Colorimetric (seawater) APHA 4500-S2 Sulphide

This analysis is carried out using procedures adapted from APHA Method 4500-S2 "Sulphide". Sulphide is determined using the methylene blue colourimetric method.

SALINITY-C-EC-VA Seawater Salinity by calc. using EC (seawater) APHA 2520 B

This analysis is carried out using procedures adapted from APHA Method 2520 "Salinity". Salinity is determined using a samples conductivity and the Practical Salinity Scale.

SB-T-HVAF-VA Seawater Total Antimony in Seawater by HVAFS PUGET SOUND PRT/ISO 17378&9-1 2006:DRAFT

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by atomic fluorescence spectrophotometry (ISO/CD 17378&9-1 2006: DRAFT).

TSS-C-VA Seawater Solids by Gravimetric (seawater) APHA 2540 Gravimetric

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

**** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.**

The last two letters of the above ALS Test Code column indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
----------------------------	---------------------	----------------------------	---------------------

VA	ALS LABORATORY GROUP - VANCOUVER, BC, CANADA
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GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

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.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.

Environmental Division



Report To		Report Format / Distribution		Service Requested: (Rush subject to availability)	
Company: Teck Resources Limited		Standard: ☒ Other (specify):		☒ Regular (Standard Turnaround Times)	
Contact: Bruce Donald		Select: PDF ☒ Excel ☒ Digital ☒ Fax		Priority, Date Req'd: (Surcharges apply)	
Address: Bag 2000 Kimberley, BC		Email 1: bruce.donald@teck.com		Emergency (1 Business Day) - 100% Surcharge	
VIA 3E1		Email 2:		For Emergency < 1 Day, ASAP or Weekend - Contact ALS	
Phone: 250-427-8405 Fax: 250-427-8451					
Invoice To Same as Report? (circle) ☒ Yes or No		Client / Project Information		Analysis Request	
Copy of Invoice with Report? (circle) Yes or No		Job #: 112986		(Indicate Filtered or Preserved, FIP)	
Company:		PO / AFE:			
Contact:		LSD: Polar's mine			
Address:		Quote #:			
Phone:		ALS Contact: Andre Lavalais			
Lab Work Order # (lab use only) L779770		Sampler: C. Kidd Accom			
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	Number of Containers
GLS 2m		12/06/09	3:00 pm	Seawater	
GLS 3m		"	3:02	"	
GLS 4m		"	3:05	"	
GLS 5m		"	3:08	"	
GLS 6m		"	3:12	"	
GLS 7m		"	3:15	"	
GLS 8m		"	3:18	"	
GLS 9m		"	3:21	"	
GLS 10m		"	3:23	"	
GLS 11m		"	3:25	"	
GLS 12m		"	3:28	"	
GLS 13m		"	3:30	"	
				Conductivity	
				TSS	
				Alkalinity	
				Hardness	
				Total Metals (Seawater)	
				Sulphide	
				Total Arsenic	
				Total Cyanide	

Special Instructions / Regulations / Hazardous Details

Water is hypersaline; for TSS measurement run 1-2 L distilled through filters CC: cadmium & SRR: com
Total metals have been preserved with HNO3; No preservative for General Parameters; Sulphide has been preserved with NaOH and Zinc Acetate

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

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

SHIPMENT RELEASE (client use)		SHIPMENT RECEPTION (lab use only)		SHIPMENT VERIFICATION (lab use only)	
Released by:	Date:	Received by:	Date:	Verified by:	Date:
Chris Kiedel	June 13/09 1:00pm	HS	09/06/17 14:55		
	Time:	Temperature:		Time:	Observations:
		9 °C			Yes / No ?
					If Yes add SIF



Environmental Division

[illegible]

Refer to page 1

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

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SHIPMENT RELEASE (client use)		SHIPMENT RECEPTION (lab use only)		SHIPMENT VERIFICATION (lab use only)	
Released by:	Date:	Received by:	Date:	Verified by:	Date:
<i>Cristo Velez</i>	June 13/09	HFD	09/06/17		
	Time:		Temperature:		
	1:00pm		13 °C		
				Observations:	
				Yes / No ?	
				If Yes add SIF	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

GENF 18.01 Front

POLARIS MINE - 2009 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
RESULTS FOR DUPLICATES
STATIONS 262-3 AND 262-3a

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779772
Date Received 17-Jun-09
Date 02-Jul-09

RESULTS OF ANALYSIS

Sample ID	GLS 6AM	GLS 20AM	GLC 9AM	GLC 20AM	GL-BLANK
Date Sampled	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09
Time Sampled	15:12	15:53	17:30	18:00	18:44
ALS Sample ID	L779772-1	L779772-2	L779772-3	L779772-4	L779772-5
Matrix	Seawater	Seawater	Seawater	Seawater	Seawater

Physical Tests

Conductivity	16300	86700	16100	86300	-
Hardness (as CaCO3)	2100	13100	2020	13400	<1.0
pH	8.08	7.65	8.00	7.65	-
Salinity (EC)	9.9	63.8	9.8	63.4	-
Total Suspended Solids	<3.0	4.4	3.1	7.1	-

Anions and Nutrients

Alkalinity, Total (as CaCO3)	153	436	156	439	-
Sulphide as S	-	0.042	-	0.043	-

Cyanides

Cyanide, Total	-	0.0071	-	0.0109	-
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Total Metals

Aluminum (Al)-Total	<0.050	<0.10	<0.050	<0.10	<0.0010
Antimony (Sb)-Total	-	<0.00020	-	<0.00020	-
Arsenic (As)-Total	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cadmium (Cd)-Total	0.000675	0.000020	0.000651	<0.000020	<0.000020
Calcium (Ca)-Total	174	846	173	872	<0.050
Copper (Cu)-Total	0.00125	0.000309	0.00134	0.000326	<0.000050
Iron (Fe)-Total	<0.010	0.362	<0.010	0.349	<0.010
Lead (Pb)-Total	0.000524	0.000608	0.000156	0.000671	<0.000050
Magnesium (Mg)-Total	404	2680	386	2730	<0.10
Manganese (Mn)-Total	0.00595	0.107	0.00594	0.104	<0.000050
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	<0.0025	<0.0050	<0.0025	<0.0050	<0.000050
Nickel (Ni)-Total	0.00535	0.00549	0.00544	0.00536	<0.000050
Zinc (Zn)-Total	0.264	0.0153	0.270	0.0139	<0.00050

POLARIS MINE - 2009 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
DETECTION LIMITS FOR DUPLICATES
STATIONS 262-3 AND 262-3A

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779772
Date Received 17-Jun-09
Date 02-Jul-09

DETECTION LIMITS

Sample ID	GLS 6AM	GLS 20AM	GLC 9AM	GLC 20AM	GL-BLANK
Date Sampled	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09
Time Sampled	15:12	15:53	17:30	18:00	18:44
ALS Sample ID	L779772-1	L779772-2	L779772-3	L779772-4	L779772-5
Matrix	Seawater	Seawater	Seawater	Seawater	Seawater

Physical Tests

Conductivity	2	2	2	2	-
Hardness (as CaCO3)	3.1	7	3.1	7	1
pH	0.1	0.1	0.1	0.1	-
Salinity (EC)	1	1	1	1	-
Total Suspended Solids	3	3	3	3	-

Anions and Nutrients

Alkalinity, Total (as CaCO3)	2	2	2	2	-
Sulphide as S	-	0.02	-	0.02	-

Cyanides

Cyanide, Total	-	0.005	-	0.005	-
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Total Metals

Aluminum (Al)-Total	0.05	0.1	0.05	0.1	0.001
Antimony (Sb)-Total	-	0.0002	-	0.0002	-
Arsenic (As)-Total	0.0002	0.0002	0.0002	0.0002	0.0002
Cadmium (Cd)-Total	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium (Ca)-Total	0.5	2.5	0.5	2.5	0.05
Copper (Cu)-Total	0.00005	0.00005	0.00005	0.00005	0.00005
Iron (Fe)-Total	0.01	0.01	0.01	0.01	0.01
Lead (Pb)-Total	0.00005	0.00005	0.00005	0.00005	0.00005
Magnesium (Mg)-Total	1	5	1	5	0.1
Manganese (Mn)-Total	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury (Hg)-Total	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum (Mo)-Total	0.0025	0.005	0.0025	0.005	0.00005
Nickel (Ni)-Total	0.00005	0.00005	0.00005	0.00005	0.00005
Zinc (Zn)-Total	0.0005	0.0005	0.0005	0.0005	0.0005

POLARIS MINE - 2009 2nd QUARTER MONITORING EVENT FOR GARROW LAKE
UNITS FOR DUPLICATES
STATIONS 262-3 AND 262-3a

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779772
Date Received 17-Jun-09
Date 02-Jul-09

UNITS

Sample ID	GLS 6AM	GLS 20AM	GLC 9AM	GLC 20AM	GL-BLANK
Date Sampled	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09	12-JUN-09
Time Sampled	15:12	15:53	17:30	18:00	18:44
ALS Sample ID	L779772-1	L779772-2	L779772-3	L779772-4	L779772-5
Matrix	Seawater	Seawater	Seawater	Seawater	Seawater

Physical Tests

Conductivity	uS/cm	uS/cm	uS/cm	uS/cm	-
Hardness (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L
pH	pH	pH	pH	pH	-
Salinity (EC)	g/L	g/L	g/L	g/L	-
Total Suspended Solids	mg/L	mg/L	mg/L	mg/L	-

Anions and Nutrients

Alkalinity, Total (as CaCO3)	mg/L	mg/L	mg/L	mg/L	-
Sulphide as S	-	mg/L	-	mg/L	-

Cyanides

Cyanide, Total	-	mg/L	-	mg/L	-
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Total Metals

Aluminum (Al)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Antimony (Sb)-Total	-	mg/L	-	mg/L	-
Arsenic (As)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Cadmium (Cd)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Calcium (Ca)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Copper (Cu)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Iron (Fe)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Lead (Pb)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Magnesium (Mg)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Manganese (Mn)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Mercury (Hg)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Molybdenum (Mo)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Nickel (Ni)-Total	mg/L	mg/L	mg/L	mg/L	mg/L
Zinc (Zn)-Total	mg/L	mg/L	mg/L	mg/L	mg/L

POLARIS MINE - 2009 2nd QUARTER GARROW LAKE MONITORING EVENT
REPLICATE RESULTS
STATIONS 262-3 AND 262-3a

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779772
Date Received 17-Jun-09
Date 02-Jul-09

REPLICATE RESULTS

Sample ID	Matrix	ALS ID	Analyte	Replicate 1	Replicate 2	Units	RPD	RPD Limit	Diff	Diff Limit	Qualifier
Cyanides L779772-4	Seawater	WG962094-3	Cyanide, Total	0.0109	0.0071	mg/L	-	-	0.0038	0.02	J
Total Metals L779772-5	Seawater	WG962375-11	Mercury (Hg)-Total	<0.000010	<0.000010	mg/L	N/A	20	-	-	RPD-NA

POLARIS MINE - 2009 2nd QUARTER MONITORING EVENT - GARROW LAKE

QC RESULTS FOR DUPLICATES

STATIONS 262-3 AND 262-3a

Project 112986
Report To BRUCE DONALD, TECK COMINCO METALS LTD.
ALS File No. L779772
Date Received 17-Jun-09
Date 02-Jul-09

QUALITY CONTROL RESULTS

Matrix	QC Type	Analyte	QC Spl. No.	Reference	Result	Target	Units	%	Limits	Qualifier
Physical Tests										
Seawater	CRM	Conductivity	WG960788-8	A-EC-PCT-CONTRC	146	147	uS/cm	99	90-110	
Seawater	CRM	pH	WG960788-9	VA-PH7-BUF	7.00	7.00	pH	7.00	6.9-7.1	
Seawater	CRM	Conductivity	WG961335-6	A-EC-PCT-CONTRC	146	147	uS/cm	99	90-110	
Seawater	CRM	pH	WG961335-7	VA-PH7-BUF	6.98	7.00	pH	6.98	6.9-7.1	
Seawater	CRM	Total Suspended Solids	WG964967-2	VA-TSS-INFUS-75	75.7	75.0	mg/L	101	80-120	
Seawater	CRM	Total Suspended Solids	WG964967-5	VA-TSS-INFUS-75	67.7	75.0	mg/L	90	80-120	
Seawater	CRM	Total Suspended Solids	WG964967-8	VA-TSS-INFUS-75	73.7	75.0	mg/L	98	80-120	
Seawater	MB	Conductivity	WG960788-1		<2.0	<2	uS/cm	-	2	
Seawater	MB	Conductivity	WG960788-2		<2.0	<2	uS/cm	-	2	
Seawater	MB	Conductivity	WG960788-3		<2.0	<2	uS/cm	-	2	
Seawater	MB	Conductivity	WG961335-2		<2.0	<2	uS/cm	-	2	
Seawater	MB	Conductivity	WG961335-3		<2.0	<2	uS/cm	-	2	
Seawater	MB	Conductivity	WG961335-4		<2.0	<2	uS/cm	-	2	
Seawater	MB	Salinity (EC)	WG962530-1		<1.0	<1	g/L	-	1	
Seawater	MB	Total Suspended Solids	WG964967-1		<3.0	<3	mg/L	-	3	
Seawater	MB	Total Suspended Solids	WG964967-4		<3.0	<3	mg/L	-	3	
Seawater	MB	Total Suspended Solids	WG964967-7		<3.0	<3	mg/L	-	3	
Anions and Nutrients										
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-3	/A-ALKL-CONTROI	14.9	15.0	mg/L	99	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-6	/A-ALKM-CONTROI	81.0	75.0	mg/L	108	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-9	/A-ALKH-CONTROI	253	250	mg/L	101	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-12	/A-ALKL-CONTROI	15.1	15.0	mg/L	101	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-15	/A-ALKM-CONTROI	79.6	75.0	mg/L	106	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-18	/A-ALKH-CONTROI	259	250	mg/L	104	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-21	/A-ALKL-CONTROI	15.3	15.0	mg/L	102	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-24	/A-ALKM-CONTROI	80.5	75.0	mg/L	107	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-27	/A-ALKH-CONTROI	252	250	mg/L	101	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-30	/A-ALKL-CONTROI	14.7	15.0	mg/L	98	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-33	/A-ALKM-CONTROI	81.8	75.0	mg/L	109	85-115	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-36	/A-ALKH-CONTROI	252	250	mg/L	101	88-112	
Seawater	CRM	Alkalinity, Total (as CaCO3)	WG961405-39	/A-ALKL-CONTROI	15.0	15.0	mg/L	100	85-115	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-2		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-5		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-8		<2.0	<2	mg/L	-	2	
Seawater	MB	Sulphide as S	WG961790-1		<0.020	<0.02	mg/L	-	0.02	
Seawater	MB	Sulphide as S	WG961790-2		<0.020	<0.02	mg/L	-	0.02	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-11		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-14		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-17		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-20		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-23		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-26		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-29		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-32		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-35		<2.0	<2	mg/L	-	2	
Seawater	MB	Alkalinity, Total (as CaCO3)	WG961405-38		<2.0	<2	mg/L	-	2	
Total Metals										
Seawater	CRM	Antimony (Sb)-Total	WG959429-4	VA-HIGH-WATRM	0.855	1.00	mg/L	85	80-120	
Seawater	CRM	Antimony (Sb)-Total	WG959429-4	VA-HIGH-WATRM	0.855	1.00	mg/L	85	80-120	
Seawater	CRM	Arsenic (As)-Total	WG959429-4	VA-HIGH-WATRM	0.891	1.00	mg/L	89	80-120	
Seawater	CRM	Arsenic (As)-Total	WG959429-4	VA-HIGH-WATRM	0.891	1.00	mg/L	89	80-120	
Seawater	CRM	Copper (Cu)-Total	WG961675-3	VA-NRC-CASS4	0.000630	0.000592	mg/L	106	80-120	
Seawater	CRM	Manganese (Mn)-Total	WG961675-3	VA-NRC-CASS4	0.00266	0.00278	mg/L	96	80-120	
Seawater	CRM	Nickel (Ni)-Total	WG961675-3	VA-NRC-CASS4	0.000337	0.000314	mg/L	107	80-120	
Seawater	CRM	Manganese (Mn)-Total	WG961675-4	VA-NRC-NASS5	0.000939	0.000919	mg/L	102	80-120	
Seawater	CRM	Mercury (Hg)-Total	WG962375-2	VA-HG-WATRM	0.000094	0.000100	mg/L	94	88-112	
Seawater	MB	Antimony (Sb)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Antimony (Sb)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Arsenic (As)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Arsenic (As)-Total	WG959429-1		<0.00020	<0.0002	mg/L	-	0.0002	
Seawater	MB	Cadmium (Cd)-Total	WG961675-1		<0.000020	<0.00002	mg/L	-	0.00002	
Seawater	MB	Copper (Cu)-Total	WG961675-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Iron (Fe)-Total	WG961675-1		<0.010	<0.01	mg/L	-	0.01	
Seawater	MB	Lead (Pb)-Total	WG961675-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Manganese (Mn)-Total	WG961675-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Nickel (Ni)-Total	WG961675-1		<0.000050	<0.00005	mg/L	-	0.00005	
Seawater	MB	Zinc (Zn)-Total	WG961675-1		<0.00050	<0.0005	mg/L	-	0.0005	
Seawater	MB	Mercury (Hg)-Total	WG962375-1		<0.000010	<0.00001	mg/L	-	0.00001	



Environmental Division

Certificate of Analysis

TECK COMINCO METALS LTD.

ATTN: BRUCE DONALD

BAG 2000

KIMBERLEY BC V1A 3E1

Report Date: 02-JUL-09 17:42 (MT)

Version: FINAL

Lab Work Order #: L779772

Date Received: 17-JUN-09

Project P.O. #: 7696

Job Reference: 112986

Legal Site Desc: POLARIS MINE

CofC Numbers: 09-026758

Other Information:

Comments: Please note that some of the metals detection limits have been increased due to interferences encountered during analysis.


LINDSAY JONES
Account Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L779772-1	L779772-2	L779772-3	L779772-4	L779772-5
		12-JUN-09 15:12 GLS 6AM	12-JUN-09 15:53 GLS 20AM	12-JUN-09 17:30 GLC 9AM	12-JUN-09 18:00 GLC 20AM	12-JUN-09 18:44 GL-BLANK
Grouping	Analyte					
SEAWATER						
Physical Tests	Conductivity (uS/cm)	16300	86700	16100	86300	
	Hardness (as CaCO3) (mg/L)	2100	13100	2020	13400	<1.0
	pH (pH)	8.08	7.65	8.00	7.65	
	Salinity (EC) (g/L)	9.9	63.8	9.8	63.4	
	Total Suspended Solids (mg/L)	<3.0	4.4	3.1	7.1	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	153	436	156	439	
	Sulphide as S (mg/L)		0.042		0.043	
Cyanides	Cyanide, Total (mg/L)		0.0071		0.0109	
Total Metals	Aluminum (Al)-Total (mg/L)	<0.050	<0.10	<0.050	<0.10	<0.0010
	Antimony (Sb)-Total (mg/L)		<0.00020		<0.00020	
	Arsenic (As)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Cadmium (Cd)-Total (mg/L)	0.000675	0.000020	0.000651	<0.000020	<0.000020
	Calcium (Ca)-Total (mg/L)	174	846	173	872	<0.050
	Copper (Cu)-Total (mg/L)	0.00125	0.000309	0.00134	0.000326	<0.000050
	Iron (Fe)-Total (mg/L)	<0.010	0.362	<0.010	0.349	<0.010
	Lead (Pb)-Total (mg/L)	0.000524	0.000608	0.000156	0.000671	<0.000050
	Magnesium (Mg)-Total (mg/L)	404	2680	386	2730	<0.10
	Manganese (Mn)-Total (mg/L)	0.00595	0.107	0.00594	0.104	<0.000050
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.0025	<0.0050	<0.0025	<0.0050	<0.000050
	Nickel (Ni)-Total (mg/L)	0.00535	0.00549	0.00544	0.00536	<0.000050
	Zinc (Zn)-Total (mg/L)	0.264	0.0153	0.270	0.0139	<0.00050

Reference Information

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comments
Methods Listed (if applicable):			
ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
ALK-C-COL-VA	Seawater	Alkalinity by Colourimetric (seawater)	APHA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
AS-T-HVAF-VA	Seawater	Total Arsenic in Seawater by HVAFS	PUGET SOUND PRT/ISO 17378&9-1 2006:DRAFT
This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by atomic fluorescence spectrophotometry (ISO/CD 17378&9-1 2006: DRAFT).			
CN-C-T-MID-HH-COL-VA	Seawater	Total Cyanide by HH Distil. (seawater)	APHA 4500-CN Cyanide
This analysis is carried out using procedures adapted from APHA Method 4500-CN "Cyanide". Total or strong acid dissociable (SAD) cyanide are determined by sample distillation and analysis using the chloramine-T colourimetric method.			
EC-C-PCT-VA	Seawater	Conductivity (Automated) (seawater)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
HARDNESS-CALC-VA	Seawater	Hardness	APHA 2340B
Hardness is calculated from Calcium and Magnesium concentrations, and is expressed as calcium carbonate equivalents.			
HG-TOT-C-CVAFS-VA	Seawater	Total Mercury in Seawater by CVAFS	PUGET SOUND PROTOCOLS, EPA 245.7
This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedure involves a cold-oxidation of the acidified seawater sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-TOT-C-ICP-VA	Seawater	Total Metals in Seawater by ICPOES	PUGET SOUND PROTOCOLS, EPA 6010B
This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
MET-TOT-C-LOW-MS-VA	Seawater	Total Metals in Seawater by ICPMS	PUGET SOUND PROTOCOLS, EPA 6020A
This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion or filtration (EPA Method 3005A). Instrumental analysis is by atomic inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
MET-TOT-SPE-MS-VA	Seawater	Total Metals in Seawater by SPE ICPMS	PUGET SOUND PROTOCOLS, EPA 6020A
This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995, and with procedures adapted from Cetac Technologies Incorporated. A suspended particulate resin (SPR), consisting of immobilized iminodiacetate (IDA) on a divinylbenzene polymer, is used to chelate and preconcentrate metals in seawater. Instrumental analysis is by inductively coupled plasma mass spectrometry (ICPMS).			
PH-C-PCT-VA	Seawater	pH by Meter (Automated) (seawater)	APHA 4500-H pH Value
This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode			

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
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S2-C-T-COL-VA Seawater Tot. Sulphide by Colorimetric (seawater) APHA 4500-S2 Sulphide

This analysis is carried out using procedures adapted from APHA Method 4500-S2 "Sulphide". Sulphide is determined using the methylene blue colourimetric method.

SALINITY-C-EC-VA Seawater Salinity by calc. using EC (seawater) APHA 2520 B

This analysis is carried out using procedures adapted from APHA Method 2520 "Salinity". Salinity is determined using a samples conductivity and the Practical Salinity Scale.

SB-T-HVAF-VA Seawater Total Antimony in Seawater by HVAFS PUGET SOUND PRT/ISO 17378&9-1 2006:DRAFT

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by atomic fluorescence spectrophotometry (ISO/CD 17378&9-1 2006: DRAFT).

TSS-C-VA Seawater Solids by Gravimetric (seawater) APHA 2540 Gravimetric

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

**** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.**

The last two letters of the above ALS Test Code column indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
VA	ALS LABORATORY GROUP - VANCOUVER, BC, CANADA		

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

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.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.

GENF 18.01 Front

APPENDIX 3

June 12, 2009 GARROW LAKE

FIELD MEASUREMENTS

TABLE 1
2009 HYDROLAB RESULTS - GARROW LAKE - June 12th 2009
STATION 262-3 (Centre Station)

Depth	Temp (°C)	DO (mg/L)	Cond (mS/cm)	pH	Redox (mV)
2	-0.65	15.56	17.5	7.67	328
3	-0.62	15.93	17	8.3	315
4	-0.64	15.73	15.9	8.58	307
5	-0.64	16.56	17	8.82	295
6	-0.64	15.73	16.9	8.91	291
7	-0.64	15.09	17	8.97	287
8	-0.62	20.53	16.9	9.04	283
9	-0.57	16.82	17	9.05	281
9.5	0.26	11.16	20.5	8.82	282
10	3.05	6.27	52.9	8.29	289
11	5.86	0.8	81.9	8.3	230
12	6	0.48	85	8.33	189
13	6.3	0.37	87	8.32	117
14	6.38	0.31	87.8	8.33	49
15	6.37	0.28	88	8.33	36
16	6.38	0.27	88	8.34	3
17	6.38	0.26	88.1	8.35	-12
18	6.38	0.25	88.1	8.35	-24
19	6.38	0.25	88.2	8.36	-32
20	6.38	0.22	88.1	8.37	-40
22	6.38	0.22	88.2	8.37	-48
30	6.55	0.11	88.2	8.34	-87
38	7.35	0.18	89.4	8.17	-124

Ice Thickness - 11.5 ft (3.5m)

TABLE 2
2009 HYDROLAB RESULTS - GARROW LAKE - June 12th 2009
STATION 262-3a (South Station)

Depth	Temp (°C)	DO (mg/L)	Cond (mS/cm)	pH	Redox (mV)
2	-0.62	15.6	17.9	8.91	310
3	-0.62	15.67	17.1	9.1	303
4	-0.62	15.66	16.9	9.19	296
5	-0.62	15.66	16.9	9.29	296
6	-0.62	15.62	16.9	9.27	292
7	-0.62	16.86	17	9.24	287
8	-0.62	16.76	17	9.24	285
9	-0.48	15.33	17	9.23	282
10	3.23	4.2	56.7	8.36	296
10.5	4.76	1.28	71.7	8.33	282
11	5.82	0.65	84.3	8.33	192
12	6	0.4	85.6	8.35	156
13	6.35	0.38	83.8	8.33	118
14	6.37	0.3	83.8	8.34	87
15	6.37	0.25	83.6	8.35	66
16	6.37	0.21	93.7	8.36	44
17	6.38	0.27	82.7	8.38	22
18	6.37	0.24	88.3	8.38	3
19	6.38	0.2	90.8	8.39	-14
20	6.38	0.19	89.9	8.39	-22

Ice Thickness - 10 ft (3m)

APPENDIX 4

1ST AND 2ND QUARTER EXPENDITURE REPORT

POLARIS MINE DECOMMISSIONING, RECLAMATION AND MONITORING - ACTUAL EXPENDITURES AND ESTIMATED REMAINING LIABILITY

Page 1 of 2

POLARIS MINE DECOMMISSIONING, RECLAMATION AND MONITORING - ACTUAL EXPENDITURES AND ESTIMATED REMAINING LIABILITY

	APPROVED CLOSURE PLAN BUDGET		ACTUAL EXPENDITURES TO DATE						FORECAST OF REMAINING OUTSTANDING LIABILITY							
			Expended To December 31, 2007		Expended In 2008		Project Total To Date		2009 Forecast		2010 Forecast		2011 Forecast		Total Forecast to 2011	
	By Code	Subtotals	By Code	Subtotals	By Code	Subtotals	By Code	Subtotals	By Code	Subtotals	By Code	Subtotals	By Code	Subtotals	By Code	Subtotals
CONTRACTOR INDIRECTS																
HO MOB & DEMOB SUPPORT																
Mob & Demob	1,912,000		1,912,376		-		1,912,376								-	
		\$ 1,912,000		\$ 1,912,376		\$ -		\$ 1,912,376		\$ -		\$ -		\$ -		\$ -
CONTRACTOR MANAGEMENT SUPPORT																
Personnel	3,928,932		3,928,932		-		3,928,932								-	
Safety & First Aid Personnel to Provide Overlap	184,068		183,644		-		183,644								-	
		\$ 4,113,000		\$ 4,112,576		\$ -		\$ 4,112,576		\$ -		\$ -		\$ -		\$ -
OTHER CONTRACTOR INDIRECTS																
Contractor's General Indirects	4,952,000		7,470,401		-		7,470,401								-	
		\$ 4,952,000		\$ 7,470,401		\$ -		\$ 7,470,401		\$ -		\$ -		\$ -		\$ -
ENGINEERING / PROJECT MANAGEMENT																
ENVIRONMENTAL SITE ASSESSMENT																
Environmental Consultants - Site Assessment	275,787		354,711		-		354,711								-	
Site Assessment - Unallocated	207,674		105,263		-		105,263								-	
Escalation Allowance	2,339		-		-		-								-	
		\$ 486,000		\$ 459,974		\$ -		\$ 459,974		\$ -		\$ -		\$ -		\$ -
CLOSURE PLAN																
Environmental Consultants - Closure Plan	415,772		372,272		-		372,272								-	
Escalation Allowance	2,228		-		-		-								-	
		\$ 418,000		\$ 372,272		\$ -		\$ 372,272		\$ -		\$ -		\$ -		\$ -
ENGINEERING / SPECIAL CONSULTANTS																
Design Consultants - Dock / Loadout	1,316		1,320		-		1,320								-	
Design Consultants - Tailings / Garrow Lake	3,520		3,515		-		3,515								-	
Design Consultants - Dock / Loadout	79,684		65,354		-		65,354								-	
Design Consultants - Tailings / Garrow Lake	54,780		45,328		-		45,328								-	
Sitework & Demolition Procedures - Design Services	18,300		46,825		-		46,825								-	
Escalation Allowance	2,400		-		-		-								-	
		\$ 160,000		\$ 162,342		\$ -		\$ 162,342		\$ -		\$ -		\$ -		\$ -
PROJECT MANAGEMENT CONSULTANT (HO STAFF)																
Project Management - Salaries	411,069		1,289,847		-		1,289,847								-	
Project Management - Reimb Expenses	100,000		85,492		-		85,492								-	
Escalation Allowance	31,931		-		-		-								-	
		\$ 543,000		\$ 1,375,339		\$ -		\$ 1,375,339		\$ -		\$ -		\$ -		\$ -
CONSTRUCTION MANAGEMENT (FIELD STAFF)																
Construction Management - Salaries	2,142,878		1,915,004		-		1,915,004								-	
Escalation Allowance	179,122		-		-		-								-	
		\$ 2,322,000		\$ 1,915,004		\$ -		\$ 1,915,004		\$ -		\$ -		\$ -		\$ -
ENVIRONMENTAL TESTING AND SAMPLING																
Environmental Reclamation Supervision - Staff	337,123		1,038,747		-		1,038,747								-	
Escalation Allowance	29,550		-		-		-								-	
Environmental Reclamation Supervision - Testing	330,000		171,498		-		171,498								-	
Additional Sampling and Consultant Services (MMER)	0		354,386		-		354,386								-	
Escalation Allowance	26,327		-		-		-								-	
		\$ 723,000		\$ 1,564,631		\$ -		\$ 1,564,631		\$ -		\$ -		\$ -		\$ -
OWNER'S COSTS																
SALARIES & EXPENSES																
Teck HO Proj Mgmnt (Staff Lab)	374,631		476,911		-		476,911								-	
Teck HO Proj Mgmnt (Misc Material & Exp)	199,149		221,031		-		221,031								-	
Escalation Allowance	34,220		-		-		-								-	
		\$ 608,000		\$ 697,942		\$ -		\$ 697,942		\$ -		\$ -		\$ -		\$ -
OVERHEAD / HO SUPPORT																
Land Leases, Licences	175,000		96,979		-		96,979								-	
Miscellaneous Permits	45,000		16,889		-		16,889								-	
Insurance	445,900		319,459		-		319,459								-	
Property Taxes	495,000		180,412		-		180,412								-	
Home Office General Admin (Labour & Exp)	722,384		16,700		-		16,700								-	
Public Relations	74,292		58,718		-		58,718								-	
Legal	57,540		48,421		-		48,421								-	
Escalation Allowance	168,560		-		-		-								-	
Misc Owner's Overhead	6,324		13,882		-		13,882								-	
		\$ 2,190,000		\$ 751,460		\$ -		\$ 751,460		\$ -		\$ -		\$ -		\$ -
GENERAL ADMIN																
Closure Management - Polaris Personnel	54,000		-		-		-								-	
Escalation Allowance	2,880		-		-		-								-	
Closure Wrap Up	5,120		-		-		-								-	
		\$ 62,000		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -
POST RECLAMATION COSTS (2005 - 2011)																
SITE MONITORING AND HOLDING COSTS																
Annual Post Closure Environmental Monitoring (2005 to 2011)	510,000		862,300		261,000		1,123,300		242,500		324,500		248,500		815,500	
Final Sampling Program, Data Evaluation and Reporting in 2011	160,000		-		-		-								-	
Land Lease/Licence costs from 2005 to 2011	126,000		-		-		-								-	
Property Taxes - 2005 to 2011	70,000		-		-		-								-	
Escalation Allowance	135,000		-		-		-								-	
		\$ 1,001,000		\$ 862,300		\$ 261,000		\$ 1,123,300		\$ 242,500		\$ 324,500		\$ 248,500		\$ 815,500
TOTAL DECOMMISSIONING / RECLAMATION & MONITORING COSTS		\$ 47,500,000		\$ 69,252,587		\$ 261,000		\$ 69,513,587		\$ 300,500		\$ 440,000		\$ 483,500		\$ 1,224,000

Note: For actual and forecast expenditures have not included Land Lease costs, Licence Costs or Property Taxes as these do not represent a potential cost or liability to the government

APPENDIX 5

**Electronic File (pdf) of Report
On Cd**