



Environmental Division

Certificate of Analysis

HOPE BAY MINING LTD

ATTN: JILL TURK

300, 889 HARBOURSIDE DRIVE

NORTH VANCOUVER BC V7P 3S1

Report Date: 02-FEB-10 16:25 (MT)

Version: FINAL

Lab Work Order #: L857021

Date Received: 26-JAN-10

Project P.O. #: H00288

Job Reference: COMPLIANCE WATER SAMPLES

Legal Site Desc:

CofC Numbers:

Other Information:

Comments: detection limits adjusted for matrix effect.
Sean Whitaker

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 Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L857021-1 GEOTECH 2 10TDD692 487M Sampled By: J. TURK on 25-JAN-10 @ 09:30 Matrix: WATER Total Metals - CCME Mercury (Hg) - Total Mercury (Hg)-Total	<0.00010		0.00010	mg/L		28-JAN-10	R1144069
Total Metals in Water by ICPMS (Low) Aluminum (Al)-Total	6.14	DLM	0.20	mg/L		01-FEB-10	R1146326
Antimony (Sb)-Total	<0.0080	DLM	0.0080	mg/L		01-FEB-10	R1146326
Arsenic (As)-Total	0.0080	DLM	0.0080	mg/L		01-FEB-10	R1146326
Barium (Ba)-Total	0.691	DLM	0.0040	mg/L		01-FEB-10	R1146326
Beryllium (Be)-Total	<0.020	DLM	0.020	mg/L		01-FEB-10	R1146326
Boron (B)-Total	0.315	DLM	0.080	mg/L		01-FEB-10	R1146326
Cadmium (Cd)-Total	<0.0010	DLM	0.0010	mg/L		01-FEB-10	R1146326
Chromium (Cr)-Total	0.023	DLM	0.016	mg/L		01-FEB-10	R1146326
Cobalt (Co)-Total	<0.0040	DLM	0.0040	mg/L		01-FEB-10	R1146326
Copper (Cu)-Total	<0.020	DLM	0.020	mg/L		01-FEB-10	R1146326
Lead (Pb)-Total	0.0072	DLM	0.0020	mg/L		01-FEB-10	R1146326
Lithium (Li)-Total	<0.12	DLM	0.12	mg/L		01-FEB-10	R1146326
Molybdenum (Mo)-Total	0.0248	DLM	0.0050	mg/L		01-FEB-10	R1146326
Nickel (Ni)-Total	0.0165	DLM	0.0040	mg/L		01-FEB-10	R1146326
Selenium (Se)-Total	0.0152	DLM	0.0080	mg/L		01-FEB-10	R1146326
Silver (Ag)-Total	<0.010	DLM	0.010	mg/L		01-FEB-10	R1146326
Thallium (Tl)-Total	<0.0020	DLM	0.0020	mg/L		01-FEB-10	R1146326
Tin (Sn)-Total	<0.050	DLM	0.050	mg/L		01-FEB-10	R1146326
Titanium (Ti)-Total	0.101	DLM	0.012	mg/L		01-FEB-10	R1146326
Uranium (U)-Total	<0.0020	DLM	0.0020	mg/L		01-FEB-10	R1146326
Vanadium (V)-Total	0.011	DLM	0.010	mg/L		01-FEB-10	R1146326
Zinc (Zn)-Total	0.088	DLM	0.080	mg/L		01-FEB-10	R1146326
Total Metals in Water by ICPOES (Low) Calcium (Ca)-Total	217		0.50	mg/L		29-JAN-10	R1145706
Iron (Fe)-Total	8.37		0.010	mg/L		29-JAN-10	R1145706
Magnesium (Mg)-Total	37.8		0.10	mg/L		29-JAN-10	R1145706
Manganese (Mn)-Total	0.435		0.0020	mg/L		29-JAN-10	R1145706
Potassium (K)-Total	23.9		0.10	mg/L		29-JAN-10	R1145706
Sodium (Na)-Total	484		1.0	mg/L		29-JAN-10	R1145706
Miscellaneous Parameters Ammonia-N	0.332		0.050	mg/L		28-JAN-10	R1144039
Phosphorus, Total	0.191		0.020	mg/L	29-JAN-10	29-JAN-10	R1145726
Total Organic Carbon	10.1		1.0	mg/L		28-JAN-10	R1144132
Total Nitrogen Nitrogen, Total Nitrogen, Total	1.80		0.70	mg/L		01-FEB-10	
Total Kjeldahl Nitrogen Total Kjeldahl Nitrogen	0.76		0.20	mg/L	28-JAN-10	28-JAN-10	R1144309
Routine Water: Major Ions, Fluoride Chloride by IC Chloride (Cl)	1140	DLA	5.0	mg/L		29-JAN-10	R1146011
Dissolved Metals in Water by ICPOES Calcium (Ca)-Dissolved	215		0.50	mg/L		01-FEB-10	R1146251
Magnesium (Mg)-Dissolved	34.3		0.10	mg/L		01-FEB-10	R1146251
Potassium (K)-Dissolved	20.7		0.50	mg/L		01-FEB-10	R1146251
Sodium (Na)-Dissolved	447		1.0	mg/L		01-FEB-10	R1146251
Fluoride by IC Fluoride (F)	<0.50	DLM	0.50	mg/L		29-JAN-10	R1146011
Ion Balance Calculation							

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

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Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Potassium (K)-Total	B	L857021-1
Matrix Spike	Calcium (Ca)-Total	E	L857021-1
Matrix Spike	Sodium (Na)-Total	E	L857021-1

Sample Parameter Qualifier Key:

Qualifier	Description
B	Method Blank exceeds ALS DQO. All associated sample results are at least 5 times greater than blank levels and are considered reliable.
DLA	Detection Limit Adjusted For required dilution
DLM	Detection Limit Adjustment For Sample Matrix Effects
E	Matrix Spike recovery outside ALS DQO due to analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
C-TOT-ORG-ED	Water	Total Organic Carbon	APHA 5310 B-Instrumental
CL-IC-ED	Water	Chloride by IC	APHA 4110 B-ION CHROMATOGRAPHY
ETL-N-TOT-CALC-ED	Water	Nitrogen, Total	APHA 4500 N-Calculated
F-IC-ED	Water	Fluoride by IC	APHA 4110 B-ION CHROMATOGRAPHY
HG-T-CVAA-ED	Water	Mercury (Hg) - Total	EPA 245.7 / EPA 245.1
IONBALANCE-ED	Water	Ion Balance Calculation	APHA 1030E
MET-D-ICP-ED	Water	Dissolved Metals in Water by ICPOES	APHA 3120 B-ICP-OES
MET-T-L-ICP-ED	Water	Total Metals in Water by ICPOES (Low)	APHA 3120 B-ICP-OES
MET-T-L-MS-ED	Water	Total Metals in Water by ICPMS (Low)	SW 846 - 6020-ICPMS
N-TOTKJ-ED	Water	Total Kjeldahl Nitrogen	APHA 4500N-C -Dig.-Auto-Colorimetry
NH4-ED	Water	Ammonia-N	APHA4500NH3F Colorimetry
NO2+NO3-CALC-ED	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-ED	Water	Nitrite as N by IC	APHA 4110 B-ION CHROMATOGRAPHY
NO3-IC-ED	Water	Nitrate as N by IC	APHA 4110 B-ION CHROMATOGRAPHY
P-TOTAL-ED	Water	Phosphorus, Total	APHA 4500 P B,E-Auto-Colorimetry
PH/EC/ALK-ED	Water	pH, Conductivity and Total Alkalinity	APHA 4500-H, 2510, 2320
SO4-IC-ED	Water	Sulfate by IC	APHA 4110 B-ION CHROMATOGRAPHY

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

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

Laboratory Definition Code	Laboratory Location
ED	ALS LABORATORY GROUP - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
mk/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.

< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

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

