



Hope Bay Mining Ltd.  
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October 5, 2012

Andrew Keim  
Water Resource Officer  
Aboriginal Affairs and Northern Development Canada  
Building 915, P.O. Box 100  
Iqaluit, NU X0A 0H0  
[Andrew.Keim@aandc-aadnc.gc.ca](mailto:Andrew.Keim@aandc-aadnc.gc.ca)

**Re: 2AM-DOH0713 Location of Discharge of Compliant Water from the Doris Firewater Tank**

Dear Mr. Keim,

As discussed during your site inspection on October 3-4, 2012, Hope Bay Mining Ltd. has received approval from Eva Paul to discharge the water from the 500,000L Doris Fire Water Tank on our receipt of compliant results.

We have received these results and request your approval to discharge the water to a location directly southwest of the firewater tank at location 68° 08' 17.4", 106° 36' 51.6". This location is to east of the main Doris road, and the water will funnel under the road via a culvert and drain out onto coarse run of quarry grade rock before reaching the tundra, reducing any potential erosion. Water will be filtered by having to pass under the Windy road and Helicopter Pad before continuing towards the closest waterbody (Doris Lake) (see photo).

Kindly acknowledge receipt of this request and direct any questions to the undersigned. If you have any questions please feel free to contact [chris.hanks@newmont.com](mailto:chris.hanks@newmont.com) or (720) 917-4489 or [angela.holzapfel@newmont.com](mailto:angela.holzapfel@newmont.com) or (604) 345-3122.

Sincerely,

Angela Holzapfel  
Manager of Environmental Compliance  
Hope Bay Mining Ltd.

cc. Phyllis Beaulieu, Nunavut Water Board

attachments: Discharge notice letter, Certificate of Analysis of lab results





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September 25, 2012

Eva Paul  
Water Resource Officer  
Aboriginal Affairs and Northern Development Canada  
Building 915, P.O. Box 100  
Iqaluit, NU X0A 0H0  
[Eva.Paul@aandc-aadnc.gc.ca](mailto:Eva.Paul@aandc-aadnc.gc.ca)

David Hohnstein  
Director Technical Services  
Nunavut Water Board  
P.O. Box 119, Gjoa Haven, NU X0B 1J0  
[dts@nunavutwaterboard.org](mailto:dts@nunavutwaterboard.org)

Dear Eva and David,

**Re: 2AM-DOH0713 Notification of Discharge from Doris Camp Fire Water Tank**

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Please be advised that HBML, under Part G: Item 1 of the Hope Bay Type A Water Licence, is providing written notice to the Inspector prior to a planned discharge of water from the fire water tank at the Doris North Project site. The fire water tank contains 500 m<sup>3</sup> of fresh water taken from Doris Lake. HBML does not believe there is cause for this water to be contaminated, but samples have been collected to ensure this is the case.

In the absence of discharge criteria for this water, HBML will compare the water quality results to that of all the individual parameters listed for the various containment berms and ponds in the 2AM-DOH0713 licence. Water will only be discharged to the tundra only after receipt of compliant water quality results. If the results are non-compliant with any of the parameters, HBML will transport the water to the TIA. The water quality results and actual volume of water removed will be included in the monthly SNP regulatory report.

Kindly acknowledge receipt of this notification and direct any questions to the undersigned. If you have any questions please feel free to contact me at [angela.holzapfel@newmont.com](mailto:angela.holzapfel@newmont.com).

Sincerely,

Angela Holzapfel  
Manager of Environmental Compliance  
Hope Bay Mining Ltd.

cc. Phyllis Beaulieu, Nunavut Water Board



HOPE BAY MINING LTD  
ATTN: Sr. Env. Co-ordinator  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Date Received: 21-SEP-12  
Report Date: 02-OCT-12 16:59 (MT)  
Version: FINAL REV. 3

Client Phone: 604-985-2572

## Certificate of Analysis

**Lab Work Order #:** L1213056  
**Project P.O. #:** CR0262  
**Job Reference:** COMPLIANCE SAMPLING PROGRAM  
**C of C Numbers:**  
**Legal Site Desc:**

**Comments:** ADDITIONAL 01-OCT-12 14:53  
01-OCT-12: REVISED REPORT - SAMPLE ID EDIT  
02-OCT-12: ADDITIONAL CYANIDE

  
\_\_\_\_\_  
Jessica Spira  
Senior Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1213056-1 DOHMISC-21SEP12							
Sampled By: CLIENT on 21-SEP-12 @ 06:05							
Matrix: WATER							
Anions by Ion Chromatography							
Bromide by Ion Chromatography							
Bromide (Br)	0.248		0.050	mg/L		26-SEP-12	R2444665
Chloride by Ion Chromatography							
Chloride (Cl)	68.1		0.50	mg/L		26-SEP-12	R2444665
Fluoride by Ion Chromatography							
Fluoride (F)	0.119		0.020	mg/L		26-SEP-12	R2444665
Nitrate in Water by Ion Chromatography							
Nitrate (as N)	<0.0050		0.0050	mg/L		26-SEP-12	R2444665
Nitrite in Water by Ion Chromatography							
Nitrite (as N)	<0.0010		0.0010	mg/L		26-SEP-12	R2444665
Sulfate by Ion Chromatography							
Sulfate (SO4)	<0.50		0.50	mg/L		26-SEP-12	R2444665
BETX+MTBE in Water by P&T GCMS							
BTEX/MTBE/Styrene by Headspace GCMS							
Benzene	<0.00050		0.00050	mg/L	26-SEP-12	27-SEP-12	R2443424
Ethylbenzene	<0.00050		0.00050	mg/L	26-SEP-12	27-SEP-12	R2443424
Methyl t-butyl ether (MTBE)	<0.00050		0.00050	mg/L	26-SEP-12	27-SEP-12	R2443424
Toluene	<0.00050		0.00050	mg/L	26-SEP-12	27-SEP-12	R2443424
meta- & para-Xylene	<0.00050		0.00050	mg/L	26-SEP-12	27-SEP-12	R2443424
ortho-Xylene	<0.00050		0.00050	mg/L	26-SEP-12	27-SEP-12	R2443424
Sum of Xylene Isomer Concentrations							
Xylenes	<0.00075		0.00075	mg/L		27-SEP-12	
VOC7 and/or VOC Surrogates for Waters							
Surrogate: 1,4-Difluorobenzene (SS)	99.8		70-130	%		27-SEP-12	R2443424
Surrogate: 4-Bromofluorobenzene (SS)	90.4		70-130	%		27-SEP-12	R2443424
Total Metals in Water (CCME/BCWQG)							
Hardness							
Hardness (as CaCO3)	45.1		0.50	mg/L		26-SEP-12	
Total Mercury in Water by CVAFS(Low)							
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		26-SEP-12	R2443902
Total Metals in Water by ICPMS (CCME)							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L		26-SEP-12	R2443946
Antimony (Sb)-Total	<0.00050		0.00050	mg/L		26-SEP-12	R2443946
Arsenic (As)-Total	<0.00050		0.00050	mg/L		26-SEP-12	R2443946
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		26-SEP-12	R2443946
Cadmium (Cd)-Total	0.000665		0.000017	mg/L		26-SEP-12	R2443946
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		26-SEP-12	R2443946
Cobalt (Co)-Total	<0.00030		0.00030	mg/L		26-SEP-12	R2443946
Copper (Cu)-Total	<0.0010		0.0010	mg/L		26-SEP-12	R2443999
Lead (Pb)-Total	0.00064		0.00050	mg/L		26-SEP-12	R2443946
Lithium (Li)-Total	<0.0050		0.0050	mg/L		26-SEP-12	R2443946
Manganese (Mn)-Total	0.0701		0.00030	mg/L		26-SEP-12	R2443946
Molybdenum (Mo)-Total	<0.0010		0.0010	mg/L		26-SEP-12	R2443946
Nickel (Ni)-Total	<0.0010		0.0010	mg/L		26-SEP-12	R2443946
Selenium (Se)-Total	<0.0010		0.0010	mg/L		26-SEP-12	R2443946
Silver (Ag)-Total	<0.000020		0.000020	mg/L		26-SEP-12	R2443946
Thallium (Tl)-Total	<0.00020		0.00020	mg/L		26-SEP-12	R2443946
Tin (Sn)-Total	<0.00050		0.00050	mg/L		26-SEP-12	R2443946
Uranium (U)-Total	<0.00020		0.00020	mg/L		26-SEP-12	R2443946
Vanadium (V)-Total	<0.0010		0.0010	mg/L		26-SEP-12	R2443946
Total Metals in Water by ICPOES							
Barium (Ba)-Total	<0.020		0.020	mg/L		26-SEP-12	R2444043

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

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1213056-1	DOHMISC-21SEP12							
Sampled By:	CLIENT on 21-SEP-12 @ 06:05							
Matrix:	WATER							
<b>Total Metals in Water by ICPOES</b>								
Boron (B)-Total	<0.10			0.10	mg/L		26-SEP-12	R2444043
Calcium (Ca)-Total	7.55			0.10	mg/L		26-SEP-12	R2444043
Iron (Fe)-Total	0.318			0.030	mg/L		26-SEP-12	R2444043
Magnesium (Mg)-Total	6.37			0.10	mg/L		26-SEP-12	R2444043
Potassium (K)-Total	2.8			2.0	mg/L		26-SEP-12	R2444043
Sodium (Na)-Total	35.9			2.0	mg/L		26-SEP-12	R2444043
Titanium (Ti)-Total	<0.010			0.010	mg/L		26-SEP-12	R2444043
Zinc (Zn)-Total	0.0078			0.0050	mg/L		26-SEP-12	R2444043
<b>Miscellaneous Parameters</b>								
Ammonia, Total (as N)	0.186			0.0050	mg/L		26-SEP-12	R2444230
Cyanide, Free	<0.0050		SRU	0.0050	mg/L		02-OCT-12	R2447840
Nitrate and Nitrite (as N)	<0.0051			0.0051	mg/L		27-SEP-12	
Oil And Grease (Visible Sheen)	no visible sheen present					27-SEP-12	27-SEP-12	R2444709
Oil and Grease	<1.0			1.0	mg/L	27-SEP-12	27-SEP-12	R2444710
Cyanide, Total	<0.0050		SRU	0.0050	mg/L		02-OCT-12	R2447839
Total Dissolved Solids	149			10	mg/L		25-SEP-12	R2444406
Total Suspended Solids	<3.0			3.0	mg/L		25-SEP-12	R2443903
pH	7.60			0.10	pH		25-SEP-12	R2443112
<b>Alkalinity by colour or titration</b>								
Alkalinity, Total (as CaCO3)	27.8			2.0	mg/L		26-SEP-12	R2444393
Alkalinity, Bicarbonate (as CaCO3)	27.8			2.0	mg/L		26-SEP-12	R2444393
Alkalinity, Carbonate (as CaCO3)	<2.0			2.0	mg/L		26-SEP-12	R2444393
Alkalinity, Hydroxide (as CaCO3)	<2.0			2.0	mg/L		26-SEP-12	R2444393
<b>Ion Balance Calculation</b>								
Cation - Anion Balance	1.7				%		27-SEP-12	
Anion Sum	2.48				meq/L		27-SEP-12	
Cation Sum	2.57				meq/L		27-SEP-12	

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

## Reference Information

## Sample Parameter Qualifier Key:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
SRU	Sample Received Unpreserved. Results may be biased low for indicated parameter(s)

## Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-SCR-VA	Water	Alkalinity by colour or titration	EPA 310.2 OR APHA 2320
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method. OR This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.			
ANIONS-BR-IC-VA	Water	Bromide by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-F-IC-VA	Water	Fluoride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-N+N-CALC-VA	Water	Nitrite & Nitrate in Water (Calculation)	EPA 300.0
Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).			
ANIONS-NO2-IC-VA	Water	Nitrite in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrite is detected by UV absorbance.			
ANIONS-NO3-IC-VA	Water	Nitrate in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrate is detected by UV absorbance.			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
CN-FREE-CFA-VA	Water	Free Cyanide in water by CFA	ASTM 7237
This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.			
CN-T-CFA-VA	Water	Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified 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).			
IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E
Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.			



## Reference Information

## Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:			
Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]			
MET-TOT-CCME-MS-VA	Water	Total Metals in Water by ICPMS (CCME)	EPA SW-846 3005A/6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
NH3-F-VA	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.			
OGG-LLE-ED	Water	Oil and Grease-Gra	APHA 5520 B HEXANE MTBE EXT. GRAVIME
OGG-VISIBLE-SHEEN-ED	Water	Oil and Grease - Visible Sheen	Alberta Environment Regs. (Ind. Runoff)
PH-PCT-VA	Water	pH by Meter (Automated)	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			
It is recommended that this analysis be conducted in the field.			
PH-PCT-VA	Water	pH by Meter (Automated)	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			
It is recommended that this analysis be conducted in the field.			
TDS-VA	Water	Total Dissolved Solids by Gravimetric	APHA 2540 C - GRAVIMETRIC
This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius.			
TSS-VA	Water	Total Suspended Solids by Gravimetric	APHA 2540 D - 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.			
VOC7-HSMS-VA	Water	BTEX/MTBE/Styrene by Headspace GCMS	EPA8260B, 5021
The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.			
VOC7/VOC-SURR-MS-VA	Water	VOC7 and/or VOC Surrogates for Waters	EPA8260B, 5021
XYLENES-CALC-VA	Water	Sum of Xylene Isomer Concentrations	CALCULATION
Calculation of Total Xylenes			
Total Xylenes is the sum of the concentrations of the ortho, meta, and para Xylene isomers. Results below detection limit (DL) are treated as zero. The DL for Total Xylenes is set to a value no less than the square root of the sum of the squares of the DLs of the individual Xylenes.			
** ALS test methods may incorporate modifications from specified reference methods to improve performance.			

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

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

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

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - 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.



**Environmental**

## Quality Control Report

Workorder: L1213056

Report Date: 02-OCT-12

Page 1 of 14

Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Contact: Sr. Env. Co-ordinator

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>ALK-SCR-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444393</b>							
<b>WG1554605-2 CRM</b>		<b>VA-ALKL-CONTROL</b>						
Alkalinity, Total (as CaCO3)			92.4		%		85-115	26-SEP-12
<b>WG1554605-5 CRM</b>		<b>VA-ALKM-CONTROL</b>						
Alkalinity, Total (as CaCO3)			98.6		%		85-115	26-SEP-12
<b>WG1554605-10 DUP</b>		<b>L1211760-18</b>						
Alkalinity, Total (as CaCO3)		<2.0	<2.0	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1554605-3 DUP</b>		<b>L1208919-2</b>						
Alkalinity, Total (as CaCO3)		N/A	134		mg/L	0.6	20	26-SEP-12
<b>WG1554605-6 DUP</b>		<b>L1211708-4</b>						
Alkalinity, Total (as CaCO3)		2.8	2.8		mg/L	0.5	20	26-SEP-12
<b>WG1554605-9 DUP</b>		<b>L1211708-13</b>						
Alkalinity, Total (as CaCO3)		<2.0	<2.0	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1554605-1 MB</b>								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	26-SEP-12
<b>WG1554605-4 MB</b>								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	26-SEP-12
<b>WG1554605-7 MB</b>								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	26-SEP-12
<b>ANIONS-BR-IC-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444665</b>							
<b>WG1553809-10 DUP</b>		<b>L1214152-7</b>						
Bromide (Br)		<1.0	<1.0	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1553809-7 DUP</b>		<b>L1212108-4</b>						
Bromide (Br)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1553809-16 LCS</b>								
Bromide (Br)			104.9		%		85-115	26-SEP-12
<b>WG1553809-2 LCS</b>								
Bromide (Br)			103.7		%		85-115	26-SEP-12
<b>WG1553809-1 MB</b>								
Bromide (Br)			<0.050		mg/L		0.05	26-SEP-12
<b>WG1553809-11 MB</b>								
Bromide (Br)			<0.050		mg/L		0.05	26-SEP-12
<b>WG1553809-14 MB</b>								
Bromide (Br)			<0.050		mg/L		0.05	26-SEP-12
<b>WG1553809-3 MB</b>								
Bromide (Br)			<0.050		mg/L		0.05	26-SEP-12
<b>WG1553809-5 MB</b>								
Bromide (Br)			<0.050		mg/L		0.05	26-SEP-12





**Environmental**

## Quality Control Report

Workorder: L1213056

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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Contact: Sr. Env. Co-ordinator

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>ANIONS-F-IC-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444665</b>							
<b>WG1553809-10</b>	<b>DUP</b>	<b>L1214152-7</b>						
Fluoride (F)		<0.40	<0.40	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1553809-13</b>	<b>DUP</b>	<b>L1213074-5</b>						
Fluoride (F)		0.024	0.024		mg/L	0.9	20	26-SEP-12
<b>WG1553809-4</b>	<b>DUP</b>	<b>L1206814-1</b>						
Fluoride (F)		0.089	0.088		mg/L	1.3	20	26-SEP-12
<b>WG1553809-7</b>	<b>DUP</b>	<b>L1212108-4</b>						
Fluoride (F)		0.027	0.027		mg/L	2.5	20	26-SEP-12
<b>WG1553809-16</b>	<b>LCS</b>							
Fluoride (F)			108.2		%		85-115	26-SEP-12
<b>WG1553809-2</b>	<b>LCS</b>							
Fluoride (F)			106.8		%		85-115	26-SEP-12
<b>WG1553809-1</b>	<b>MB</b>							
Fluoride (F)			<0.020		mg/L		0.02	26-SEP-12
<b>WG1553809-11</b>	<b>MB</b>							
Fluoride (F)			<0.020		mg/L		0.02	26-SEP-12
<b>WG1553809-14</b>	<b>MB</b>							
Fluoride (F)			<0.020		mg/L		0.02	26-SEP-12
<b>WG1553809-3</b>	<b>MB</b>							
Fluoride (F)			<0.020		mg/L		0.02	26-SEP-12
<b>WG1553809-5</b>	<b>MB</b>							
Fluoride (F)			<0.020		mg/L		0.02	26-SEP-12
<b>WG1553809-8</b>	<b>MB</b>							
Fluoride (F)			<0.020		mg/L		0.02	26-SEP-12
<b>WG1553809-12</b>	<b>MS</b>	<b>L1212108-5</b>						
Fluoride (F)			85.7		%		75-125	26-SEP-12
<b>WG1553809-15</b>	<b>MS</b>	<b>L1213074-4</b>						
Fluoride (F)			107.7		%		75-125	26-SEP-12
<b>WG1553809-6</b>	<b>MS</b>	<b>L1210628-1</b>						
Fluoride (F)			86.2		%		75-125	26-SEP-12
<b>WG1553809-9</b>	<b>MS</b>	<b>L1212108-2</b>						
Fluoride (F)			84.6		%		75-125	26-SEP-12
<b>ANIONS-NO2-IC-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444665</b>							
<b>WG1553809-10</b>	<b>DUP</b>	<b>L1214152-7</b>						
Nitrite (as N)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1553809-13</b>	<b>DUP</b>	<b>L1213074-5</b>						
Nitrite (as N)		0.0074	0.0092	J	mg/L	0.0018	0.002	26-SEP-12

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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Contact: Sr. Env. Co-ordinator

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>ANIONS-NO2-IC-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444665</b>							
<b>WG1553809-4</b>	<b>DUP</b>	<b>L1206814-1</b>						
Nitrite (as N)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1553809-7</b>	<b>DUP</b>	<b>L1212108-4</b>						
Nitrite (as N)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1553809-16</b>	<b>LCS</b>							
Nitrite (as N)			103.4		%		85-115	26-SEP-12
<b>WG1553809-2</b>	<b>LCS</b>							
Nitrite (as N)			101.2		%		85-115	26-SEP-12
<b>WG1553809-1</b>	<b>MB</b>							
Nitrite (as N)			<0.0010		mg/L		0.001	26-SEP-12
<b>WG1553809-11</b>	<b>MB</b>							
Nitrite (as N)			<0.0010		mg/L		0.001	26-SEP-12
<b>WG1553809-14</b>	<b>MB</b>							
Nitrite (as N)			<0.0010		mg/L		0.001	26-SEP-12
<b>WG1553809-3</b>	<b>MB</b>							
Nitrite (as N)			<0.0010		mg/L		0.001	26-SEP-12
<b>WG1553809-5</b>	<b>MB</b>							
Nitrite (as N)			<0.0010		mg/L		0.001	26-SEP-12
<b>WG1553809-8</b>	<b>MB</b>							
Nitrite (as N)			<0.0010		mg/L		0.001	26-SEP-12
<b>WG1553809-12</b>	<b>MS</b>	<b>L1212108-5</b>						
Nitrite (as N)			76.6		%		75-125	26-SEP-12
<b>WG1553809-15</b>	<b>MS</b>	<b>L1213074-4</b>						
Nitrite (as N)			101.3		%		75-125	26-SEP-12
<b>WG1553809-6</b>	<b>MS</b>	<b>L1210628-1</b>						
Nitrite (as N)			77.1		%		75-125	26-SEP-12
<b>ANIONS-NO3-IC-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444665</b>							
<b>WG1553809-10</b>	<b>DUP</b>	<b>L1214152-7</b>						
Nitrate (as N)		<0.10	<0.10	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1553809-13</b>	<b>DUP</b>	<b>L1213074-5</b>						
Nitrate (as N)		5.89	5.83		mg/L	1.0	20	26-SEP-12
<b>WG1553809-4</b>	<b>DUP</b>	<b>L1206814-1</b>						
Nitrate (as N)		0.273	0.274		mg/L	0.4	20	26-SEP-12
<b>WG1553809-7</b>	<b>DUP</b>	<b>L1212108-4</b>						
Nitrate (as N)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1553809-16</b>	<b>LCS</b>							
Nitrate (as N)			103.8		%		85-115	26-SEP-12



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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Contact: Sr. Env. Co-ordinator

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>ANIONS-NO3-IC-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444665</b>							
<b>WG1553809-2</b>	<b>LCS</b>							
Nitrate (as N)			102.0		%		85-115	26-SEP-12
<b>WG1553809-1</b>	<b>MB</b>							
Nitrate (as N)			<0.0050		mg/L		0.005	26-SEP-12
<b>WG1553809-11</b>	<b>MB</b>							
Nitrate (as N)			<0.0050		mg/L		0.005	26-SEP-12
<b>WG1553809-14</b>	<b>MB</b>							
Nitrate (as N)			<0.0050		mg/L		0.005	26-SEP-12
<b>WG1553809-3</b>	<b>MB</b>							
Nitrate (as N)			<0.0050		mg/L		0.005	26-SEP-12
<b>WG1553809-5</b>	<b>MB</b>							
Nitrate (as N)			<0.0050		mg/L		0.005	26-SEP-12
<b>WG1553809-8</b>	<b>MB</b>							
Nitrate (as N)			<0.0050		mg/L		0.005	26-SEP-12
<b>WG1553809-15</b>	<b>MS</b>	<b>L1213074-4</b>	N/A	MS-B	%		-	26-SEP-12
Nitrate (as N)								
<b>ANIONS-SO4-IC-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444665</b>							
<b>WG1553809-10</b>	<b>DUP</b>	<b>L1214152-7</b>						
Sulfate (SO4)		273	273		mg/L	0.2	20	26-SEP-12
<b>WG1553809-13</b>	<b>DUP</b>	<b>L1213074-5</b>						
Sulfate (SO4)		26.3	26.0		mg/L	1.0	20	26-SEP-12
<b>WG1553809-4</b>	<b>DUP</b>	<b>L1206814-1</b>						
Sulfate (SO4)		23.5	23.5		mg/L	0.1	20	26-SEP-12
<b>WG1553809-7</b>	<b>DUP</b>	<b>L1212108-4</b>						
Sulfate (SO4)		0.97	0.98		mg/L	0.9	20	26-SEP-12
<b>WG1553809-16</b>	<b>LCS</b>							
Sulfate (SO4)			104.4		%		85-115	26-SEP-12
<b>WG1553809-2</b>	<b>LCS</b>							
Sulfate (SO4)			103.3		%		85-115	26-SEP-12
<b>WG1553809-1</b>	<b>MB</b>							
Sulfate (SO4)			<0.50		mg/L		0.5	26-SEP-12
<b>WG1553809-11</b>	<b>MB</b>							
Sulfate (SO4)			<0.50		mg/L		0.5	26-SEP-12
<b>WG1553809-14</b>	<b>MB</b>							
Sulfate (SO4)			<0.50		mg/L		0.5	26-SEP-12
<b>WG1553809-3</b>	<b>MB</b>							
Sulfate (SO4)			<0.50		mg/L		0.5	26-SEP-12



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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Contact: Sr. Env. Co-ordinator

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>ANIONS-SO4-IC-VA</b>								
<b>Water</b>								
<b>Batch</b>	<b>R2444665</b>							
<b>WG1553809-5 MB</b>								
Sulfate (SO4)			<0.50		mg/L		0.5	26-SEP-12
<b>WG1553809-8 MB</b>								
Sulfate (SO4)			<0.50		mg/L		0.5	26-SEP-12
<b>WG1553809-15 MS</b>		<b>L1213074-4</b>						
Sulfate (SO4)			100.5		%		75-125	26-SEP-12
<b>CN-FREE-CFA-VA</b>								
<b>Water</b>								
<b>Batch</b>	<b>R2447840</b>							
<b>WG1558522-2 LCS</b>								
Cyanide, Free			99.2		%		80-120	02-OCT-12
<b>WG1558522-1 MB</b>								
Cyanide, Free			<0.0050		mg/L		0.005	02-OCT-12
<b>CN-T-CFA-VA</b>								
<b>Water</b>								
<b>Batch</b>	<b>R2447839</b>							
<b>WG1558521-2 LCS</b>								
Cyanide, Total			86.9		%		80-120	02-OCT-12
<b>WG1558521-1 MB</b>								
Cyanide, Total			<0.0050		mg/L		0.005	02-OCT-12
<b>HG-TOT-LOW-CVAFS-VA</b>								
<b>Water</b>								
<b>Batch</b>	<b>R2443902</b>							
<b>WG1554374-12 DUP</b>		<b>L1213056-1</b>						
Mercury (Hg)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1554374-25 DUP</b>		<b>L1213011-1</b>						
Mercury (Hg)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1554374-5 DUP</b>		<b>L1208900-1</b>						
Mercury (Hg)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	26-SEP-12
<b>WG1554374-3 LCS</b>								
Mercury (Hg)-Total			97.8		%		80-120	26-SEP-12
<b>WG1554374-4 LCS</b>								
Mercury (Hg)-Total			93.5		%		80-120	26-SEP-12
<b>WG1554374-1 MB</b>								
Mercury (Hg)-Total			<0.000010		mg/L		0.00001	26-SEP-12
<b>WG1554374-2 MB</b>								
Mercury (Hg)-Total			<0.000010		mg/L		0.00001	26-SEP-12
<b>WG1554374-19 MS</b>		<b>L1213056-1</b>						
Mercury (Hg)-Total			90.1		%		70-130	26-SEP-12
<b>WG1554374-22 MS</b>		<b>L1211276-11</b>						





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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Contact: Sr. Env. Co-ordinator

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>HG-TOT-LOW-CVAFS-VA Water</b>								
<b>Batch</b>	<b>R2443902</b>							
<b>WG1554374-22 MS</b>		<b>L1211276-11</b>						
Mercury (Hg)-Total			91.1		%		70-130	26-SEP-12
<b>WG1554374-26 MS</b>		<b>L1213011-16</b>						
Mercury (Hg)-Total			92.0		%		70-130	26-SEP-12
<b>WG1554374-7 MS</b>		<b>L1213427-3</b>						
Mercury (Hg)-Total			92.8		%		70-130	26-SEP-12
<b>MET-TOT-CCME-MS-VA Water</b>								
<b>Batch</b>	<b>R2443907</b>							
<b>WG1553674-1 MB</b>								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	26-SEP-12
Antimony (Sb)-Total			<0.00050		mg/L		0.0005	26-SEP-12
Arsenic (As)-Total			<0.00050		mg/L		0.0005	26-SEP-12
Beryllium (Be)-Total			<0.0010		mg/L		0.001	26-SEP-12
Cadmium (Cd)-Total			<0.000010		mg/L		0.00001	26-SEP-12
Chromium (Cr)-Total			<0.0010		mg/L		0.001	26-SEP-12
Cobalt (Co)-Total			<0.00030		mg/L		0.0003	26-SEP-12
Copper (Cu)-Total			<0.0010		mg/L		0.001	26-SEP-12
Lead (Pb)-Total			<0.00050		mg/L		0.0005	26-SEP-12
Lithium (Li)-Total			<0.0050		mg/L		0.005	26-SEP-12
Manganese (Mn)-Total			<0.00030		mg/L		0.0003	26-SEP-12
Molybdenum (Mo)-Total			<0.0010		mg/L		0.001	26-SEP-12
Nickel (Ni)-Total			<0.0010		mg/L		0.001	26-SEP-12
Selenium (Se)-Total			<0.0010		mg/L		0.001	26-SEP-12
Silver (Ag)-Total			<0.000020		mg/L		0.00002	26-SEP-12
Thallium (Tl)-Total			<0.00020		mg/L		0.0002	26-SEP-12
Tin (Sn)-Total			<0.00050		mg/L		0.0005	26-SEP-12
Uranium (U)-Total			<0.00020		mg/L		0.0002	26-SEP-12
Vanadium (V)-Total			<0.0010		mg/L		0.001	26-SEP-12
<b>Batch</b>	<b>R2446604</b>							
<b>WG1553674-3 CRM</b>		<b>VA-HIGH-WATRM</b>						
Aluminum (Al)-Total			102.1		%		80-120	28-SEP-12
Antimony (Sb)-Total			84.5		%		80-120	28-SEP-12
Arsenic (As)-Total			99.6		%		80-120	28-SEP-12
Beryllium (Be)-Total			81.9		%		80-120	28-SEP-12
Cadmium (Cd)-Total			103.9		%		80-120	28-SEP-12

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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Contact: Sr. Env. Co-ordinator

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-TOT-CCME-MS-VA Water</b>								
Batch	R2446604							
WG1553674-3 CRM	VA-HIGH-WATRM							
Chromium (Cr)-Total			98.7		%		80-120	28-SEP-12
Cobalt (Co)-Total			98.0		%		80-120	28-SEP-12
Copper (Cu)-Total			100.3		%		80-120	28-SEP-12
Lead (Pb)-Total			80.2		%		80-120	28-SEP-12
Lithium (Li)-Total			86.3		%		80-120	28-SEP-12
Manganese (Mn)-Total			101.8		%		80-120	28-SEP-12
Molybdenum (Mo)-Total			82.6		%		80-120	28-SEP-12
Nickel (Ni)-Total			100.3		%		80-120	28-SEP-12
Selenium (Se)-Total			99.2		%		80-120	28-SEP-12
Silver (Ag)-Total			82.0		%		80-120	28-SEP-12
Tin (Sn)-Total			82.3		%		80-120	28-SEP-12
Vanadium (V)-Total			102.2		%		80-120	28-SEP-12
<b>MET-TOT-ICP-VA Water</b>								
Batch	R2444043							
WG1553674-3 CRM	VA-HIGH-WATRM							
Barium (Ba)-Total			101.6		%		80-120	26-SEP-12
Boron (B)-Total			100.4		%		80-120	26-SEP-12
Calcium (Ca)-Total			106.5		%		80-120	26-SEP-12
Iron (Fe)-Total			103.4		%		80-120	26-SEP-12
Magnesium (Mg)-Total			105.6		%		80-120	26-SEP-12
Potassium (K)-Total			104.3		%		80-120	26-SEP-12
Sodium (Na)-Total			102.1		%		80-120	26-SEP-12
Titanium (Ti)-Total			104.1		%		80-120	26-SEP-12
Zinc (Zn)-Total			98.8		%		80-120	26-SEP-12
WG1553674-1 MB								
Barium (Ba)-Total			<0.010		mg/L		0.01	26-SEP-12
Boron (B)-Total			<0.10		mg/L		0.1	26-SEP-12
Calcium (Ca)-Total			<0.050		mg/L		0.05	26-SEP-12
Iron (Fe)-Total			<0.030		mg/L		0.03	26-SEP-12
Magnesium (Mg)-Total			<0.10		mg/L		0.1	26-SEP-12
Potassium (K)-Total			<2.0		mg/L		2	26-SEP-12
Sodium (Na)-Total			<2.0		mg/L		2	26-SEP-12
Titanium (Ti)-Total			<0.010		mg/L		0.01	26-SEP-12
Zinc (Zn)-Total			<0.0050		mg/L		0.005	26-SEP-12

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
MET-TOT-ICP-VA		Water							
Batch	R2446082								
WG1553674-2	DUP	L1212456-2							
Barium (Ba)-Total			<0.010	<0.010	RPD-NA	mg/L	N/A	20	27-SEP-12
Boron (B)-Total			<0.10	<0.10	RPD-NA	mg/L	N/A	20	27-SEP-12
Calcium (Ca)-Total			7.70	7.73		mg/L	0.4	20	27-SEP-12
Iron (Fe)-Total			<0.030	<0.030	RPD-NA	mg/L	N/A	20	27-SEP-12
Magnesium (Mg)-Total			1.11	1.12		mg/L	0.7	20	27-SEP-12
Potassium (K)-Total			<2.0	<2.0	RPD-NA	mg/L	N/A	20	27-SEP-12
Sodium (Na)-Total			<2.0	<2.0	RPD-NA	mg/L	N/A	20	27-SEP-12
Titanium (Ti)-Total			<0.010	<0.010	RPD-NA	mg/L	N/A	20	27-SEP-12
Zinc (Zn)-Total			<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	27-SEP-12
WG1553674-4	MS	L1212456-4							
Boron (B)-Total				99.8		%		70-130	27-SEP-12
Calcium (Ca)-Total				99.4		%		70-130	27-SEP-12
Iron (Fe)-Total				95.6		%		70-130	27-SEP-12
Magnesium (Mg)-Total				101.3		%		70-130	27-SEP-12
Potassium (K)-Total				106.7		%		70-130	27-SEP-12
Sodium (Na)-Total				106.0		%		70-130	27-SEP-12
Titanium (Ti)-Total				106.2		%		70-130	27-SEP-12
Zinc (Zn)-Total				91.9		%		70-130	27-SEP-12
NH3-F-VA		Water							
Batch	R2444230								
WG1553702-10	CRM	VA-NH3-F							
Ammonia, Total (as N)				95.5		%		85-115	26-SEP-12
WG1553702-2	CRM	VA-NH3-F							
Ammonia, Total (as N)				106.7		%		85-115	26-SEP-12
WG1553702-4	CRM	VA-NH3-F							
Ammonia, Total (as N)				91.2		%		85-115	26-SEP-12
WG1553702-6	CRM	VA-NH3-F							
Ammonia, Total (as N)				90.6		%		85-115	26-SEP-12
WG1553702-8	CRM	VA-NH3-F							
Ammonia, Total (as N)				92.4		%		85-115	26-SEP-12
WG1553702-11	DUP	L1209734-2							
Ammonia, Total (as N)			0.0059	0.0061		mg/L	2.5	20	26-SEP-12
WG1553702-1	MB								
Ammonia, Total (as N)				<0.0050		mg/L		0.005	26-SEP-12
WG1553702-3	MB								

## Quality Control Report

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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Contact: Sr. Env. Co-ordinator

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>NH3-F-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444230</b>							
<b>WG1553702-3 MB</b>								
Ammonia, Total (as N)			<0.0050		mg/L		0.005	26-SEP-12
<b>WG1553702-5 MB</b>								
Ammonia, Total (as N)			<0.0050		mg/L		0.005	26-SEP-12
<b>WG1553702-7 MB</b>								
Ammonia, Total (as N)			<0.0050		mg/L		0.005	26-SEP-12
<b>WG1553702-9 MB</b>								
Ammonia, Total (as N)			<0.0050		mg/L		0.005	26-SEP-12
<b>WG1553702-12 MS</b>		<b>L1209734-2</b>						
Ammonia, Total (as N)			91.1		%		75-125	26-SEP-12
<b>OGG-LLE-ED</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444710</b>							
<b>WG1555223-2 LCS</b>								
Oil and Grease			97.0		%		70-130	27-SEP-12
<b>WG1555223-1 MB</b>								
Oil and Grease			<1.0		mg/L		1	27-SEP-12
<b>PH-PCT-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2443112</b>							
<b>WG1553049-24 CRM</b>		<b>VA-PH7-BUF</b>						
pH			7.03		pH		6.9-7.1	25-SEP-12
<b>WG1553049-25 CRM</b>		<b>VA-PH7-BUF</b>						
pH			7.03		pH		6.9-7.1	25-SEP-12
<b>WG1553049-26 CRM</b>		<b>VA-PH7-BUF</b>						
pH			7.03		pH		6.9-7.1	25-SEP-12
<b>WG1553049-27 CRM</b>		<b>VA-PH7-BUF</b>						
pH			7.02		pH		6.9-7.1	25-SEP-12
<b>WG1553049-28 CRM</b>		<b>VA-PH7-BUF</b>						
pH			7.02		pH		6.9-7.1	25-SEP-12
<b>WG1553049-29 CRM</b>		<b>VA-PH7-BUF</b>						
pH			7.01		pH		6.9-7.1	25-SEP-12
<b>WG1553049-30 CRM</b>		<b>VA-PH7-BUF</b>						
pH			7.01		pH		6.9-7.1	25-SEP-12
<b>WG1553049-31 DUP</b>		<b>L1213097-5</b>						
pH		7.23	7.25	J	pH	0.02	0.2	25-SEP-12
<b>WG1553049-33 DUP</b>		<b>L1210258-2</b>						
pH		8.15	8.15	J	pH	0.01	0.2	25-SEP-12
<b>WG1553049-34 DUP</b>		<b>L1210790-1</b>						
pH		7.22	7.23	J	pH	0.01	0.2	25-SEP-12



**Environmental**

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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Contact: Sr. Env. Co-ordinator

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>PH-PCT-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2443112</b>							
<b>WG1553049-35</b>	<b>DUP</b>	<b>L1211492-2</b>						
pH		8.22	8.23	J	pH	0.01	0.2	25-SEP-12
<b>WG1553049-36</b>	<b>DUP</b>	<b>L1211678-6</b>						
pH		8.01	7.95	J	pH	0.06	0.2	25-SEP-12
<b>TDS-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2444406</b>							
<b>WG1553712-3</b>	<b>DUP</b>	<b>L1214152-1</b>						
Total Dissolved Solids		1430	1450		mg/L	1.8	20	25-SEP-12
<b>WG1553712-2</b>	<b>LCS</b>		101.9		%		85-115	25-SEP-12
Total Dissolved Solids								
<b>WG1553712-5</b>	<b>LCS</b>		101.9		%		85-115	25-SEP-12
Total Dissolved Solids								
<b>WG1553712-1</b>	<b>MB</b>		<10		mg/L		10	25-SEP-12
Total Dissolved Solids								
<b>WG1553712-4</b>	<b>MB</b>		<10		mg/L		10	25-SEP-12
Total Dissolved Solids								
<b>TSS-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2443903</b>							
<b>WG1553710-3</b>	<b>DUP</b>	<b>L1214152-1</b>						
Total Suspended Solids		<3.0	<3.0	RPD-NA	mg/L	N/A	20	25-SEP-12
<b>WG1553710-2</b>	<b>LCS</b>		98.0		%		85-115	25-SEP-12
Total Suspended Solids								
<b>WG1553710-5</b>	<b>LCS</b>		98.0		%		85-115	25-SEP-12
Total Suspended Solids								
<b>WG1553710-1</b>	<b>MB</b>		<3.0		mg/L		3	25-SEP-12
Total Suspended Solids								
<b>WG1553710-4</b>	<b>MB</b>		<3.0		mg/L		3	25-SEP-12
Total Suspended Solids								
<b>VOC7-HSMS-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2443424</b>							
<b>WG1553948-3</b>	<b>DUP</b>	<b>L1213726-4</b>						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	27-SEP-12
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	27-SEP-12
Methyl t-butyl ether (MTBE)		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	27-SEP-12
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	27-SEP-12
meta- & para-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	27-SEP-12
ortho-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	27-SEP-12

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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1

Contact: Sr. Env. Co-ordinator

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>VOC7-HSMS-VA</b>		<b>Water</b>						
<b>Batch</b>	<b>R2443424</b>							
<b>WG1553948-2</b>	<b>LCS</b>							
Benzene			92.3		%		70-130	27-SEP-12
Ethylbenzene			98.0		%		70-130	27-SEP-12
Methyl t-butyl ether (MTBE)			100.3		%		70-130	27-SEP-12
Toluene			93.3		%		70-130	27-SEP-12
meta- & para-Xylene			98.6		%		70-130	27-SEP-12
ortho-Xylene			99.7		%		70-130	27-SEP-12
<b>WG1553948-1</b>	<b>MB</b>							
Benzene			<0.00050		mg/L		0.0005	27-SEP-12
Ethylbenzene			<0.00050		mg/L		0.0005	27-SEP-12
Methyl t-butyl ether (MTBE)			<0.00050		mg/L		0.0005	27-SEP-12
Toluene			<0.00050		mg/L		0.0005	27-SEP-12
meta- & para-Xylene			<0.00050		mg/L		0.0005	27-SEP-12
ortho-Xylene			<0.00050		mg/L		0.0005	27-SEP-12

# Quality Control Report

Workorder: L1213056

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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
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Contact: Sr. Env. Co-ordinator

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## Legend:

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

## Sample Parameter Qualifier Definitions:

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Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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# Quality Control Report

Workorder: L1213056

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Client: HOPE BAY MINING LTD  
300 - 889 Harbourside Drive  
North Vancouver BC V7P 3S1  
Contact: Sr. Env. Co-ordinator

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## Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
<b>Physical Tests</b>							
pH by Meter (Automated)	1	21-SEP-12 06:05	25-SEP-12 11:16	0.25	101	hours	EHTR-FM
<b>Anions and Nutrients</b>							
Nitrate in Water by Ion Chromatography	1	21-SEP-12 06:05	26-SEP-12 08:25	3	5	days	EHT
Nitrite in Water by Ion Chromatography	1	21-SEP-12 06:05	26-SEP-12 08:25	3	5	days	EHT

## Legend & Qualifier Definitions:

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

Notes\*:  
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.  
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1213056 were received on 21-SEP-12 16:23.

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

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

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





L1213056-COFC

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