August 13, 2009

Project No. 09-1421-0028
E/09/1682

Mr. Chris Lowe
Capital Regional District
Environmental Services
PO Box 1000
625 Fisgard Street
Victoria, BC
V8W 2S6

SPRING 2009 WATER QUALITY MONITORING SURVEY FOR BASELINE MONITORING AT PROPOSED OUTFALL STUDY AREAS LOCATED IN FINNERTY COVE AND ALBERT HEAD: DATA REPORT

Dear Chris,

Golder Associates Ltd (Golder) is pleased to provide the Capital Regional District (CRD) with the following data report for the first seasonal (Spring - Year 1) water quality baseline monitoring survey for two proposed outfall study areas located in Finnerty Cove and Albert Head, near Victoria, BC.

1.0 BACKGROUND

The CRD has proposed to construct new waste water treatment plants (WWTP) in the Finnerty Cove and Albert Head areas near Victoria, BC. However, the exact location of the WWTPs and their respective outfalls is presently unknown. Based on Ministry of Environment guidance, Golder prepared a Stage 1 Environmental Impact Study (EIS) for the effluent discharge from the proposed WWTPs (Golder 2009a), which served as a preliminary evaluation at the planning stage to assess the acceptability of a proposed treated sewage discharge before detailed studies and designs were undertaken, and to assist in focusing those detailed studies. Existing data available for the Finnerty Cove and Albert Head areas were used in the evaluation, which was reasonable for the purpose of a Stage 1 EIS. However, the data were considered to be insufficient for a Stage 2 EIS, and a site-specific baseline characterization program was therefore recommended. At the CRD's request, Golder prepared recommendations for the structure of the baseline program (Golder 2009b) and a 2-year baseline monitoring program was recommended for Spring 2009 through Winter 2011. The scope of the first seasonal (Spring – Year 1) water quality baseline monitoring survey carried out in May 2009 is based on that document and the results are reported on here.

2.0 STUDY OBJECTIVE AND DELIVERABLES

The objective of the proposed monitoring program was to undertake the first seasonal sampling event as part of a multi-year baseline monitoring program outlined for the Saanich East and West Shore WWTP outfalls. The deliverables for the Spring monitoring program were:

- Collection of water samples five times during a 30-day period;
- Review and validation of analytical data; and,
- Data analysis (summary statistics) and preparation of a letter report with methods and sample locations described, tabulated data summaries, assessment of QA/QC, and electronic data files as provided by the analytical laboratory.

The present report is a data report only. It has been prepared based on the understanding that a more detailed report, encompassing the whole of the baseline monitoring program will be prepared when that project is carried out.

3.0 SAMPLING METHODS

The Spring 2009 survey consisted of five sampling events within a 30-d period (Moe 2006), in the vicinity of each of the proposed outfall locations offshore of Finnerty Cove (the proposed Saanich East WWTP) and Albert Head (the proposed West Shore WWTP) areas near Victoria, BC (Figures 1 and 2; Table 1).

Table 1: Sampling Locations for the Spring 2009 Water Quality Baseline Survey for Two Proposed Outfall Study Areas Located in Finnerty Cove and Albert Head

ALBERT HEAD		
	Latitude (dd° mm.mmm') N	Longitude (ddd° mm.mmm') W
Station 1	48° 23.191'	123° 28.274'
Station 2	48° 23.217'	123° 27.826'
Station 3	48° 23.207'	123° 27.215'
FINNERTY COVE		
	Latitude (dd° mm.mmm') N	Longitude (ddd° mm.mmm') W
Station 1	48° 29.149'	123° 16.601'
Station 2	48° 29.164'	123° 16.187'
Station 3	48° 28.893'	123° 16.113'

The five sampling events occurred between May 4 and May 21st 2009 and were scheduled around high wind and resulting wave height conditions that prevailed during that time period (Table 2). Baseline water quality was monitored at three stations for each proposed outfall location in Finnerty Cove and Albert Head; in terms of *in situ* water quality measurements and water quality samples for laboratory analysis.

Field sampling activities were conducted aboard Golder's research vessel, the *Pacific GAL*. This vessel is equipped with onboard electronics, including 'Wide Area Augmentation System' and 'Differential' enabled GPS (WAAS/dGPS), onboard computer with navigational and position plotting software (Nobeltec), and depth sounder. The WAAS/dGPS is an accurate positioning system that interfaces with the on board Nobeltec navigational software to provide real time position fixing, allowing for accurate locating and logging of sample sites.

Table 2: Sampling Schedule for the Spring 2009 water quality baseline survey for two proposed outfall study areas located in Finnerty Cove and Albert Head

Sampling Event	Location	Date Sampled	Weather-Related Sampling Considerations
Round 1	Albert Head	Monday May 4, 2009	Strong wind warning upgraded to gale warning
	Finnerty Cove	Tuesday May 5, 2009	Strong wind warning
Round 2	Albert Head	Monday May 11, 2009	Strong wind warning upgraded to gale warning late in the afternoon. Sampling postponed from May 7, due to high winds
	Finnerty Cove	Monday May 11, 2009	
Round 3	Albert Head	Tuesday May 12, 2009	Strong wind warning. Station 2 was not completed due to ocean conditions
	Finnerty Cove	Wednesday May 13, 2009	Strong wind warning
Round 4	Albert Head	Thursday May 14, 2009	Strong wind warning
	Finnerty Cove	Friday May 14, 2009	No comment
Round 5	Finnerty Cove	Wednesday May 20, 2009	Strong wind warning. Sampling postponed from May 19, due to high winds
	Albert Head	Thursday May 21, 2009	Sampling postponed from May 19, due to high winds

3.1 *In Situ* Water Quality Depth Profiles

During each of the five sampling events, the profile of the water column at each of the three stations was characterized by *in situ* measurements of depth, temperature, pH, dissolved oxygen, conductivity, salinity, total chlorophyll (a proxy measure of algal productivity[1]) and turbidity. Measurements were taken using a YSI 6-Series Multi-parameter Water Quality Sonde (YSI Sonde). Water quality data was logged at regular periods throughout the YSI Sonde deployment. Typically, the YSI Sonde was lowered to depth, *circa* 1 m above the ocean bottom (approximately 50 m below the water surface), and then raised through the water column slowly (to allow for probe response time) to provide profile data.

The YSI Sonde was regularly calibrated, for the various parameters measured (conductivity, pH, turbidity, chlorophyll and dissolved oxygen), according to the manufacturer's instructions. Calibrations were conducted prior to each round of sampling (prior to the each of the five sampling events) and post sampling. The calibration records demonstrate that the YSI Sonde instrument sensors were consistently within the accepted range (Appendix I). There was some variation around the high turbidity calibration solution (126 NTU standard), possibly due to temperature effects on the turbidity measurement, however the sensor consistently remained close to the low turbidity calibration (0 NTU standard). Considering the very low turbidity recorded in the field (<4 NTU) this was not considered to be a concern.

3.2 Water Quality Sampling

Water samples were taken at three sampling stations within the vicinity of the proposed outfall location for a suite of chemical and physical water quality parameters (Table 3). The three stations were evenly spaced approximately 500 m apart within the study area. At each station, discrete water samples were collected at three depths (1 m above the ocean bottom, mid-depth, and 1 m below the water surface) with a Van Dorn water sampler. Water samples were collected for the analysis of conventional, biological and nutrient parameters at three sampling stations, while samples for total and dissolved trace metals were only collected from one station during each sampling event. These parameters were selected because they were considered necessary to characterize water quality in the study area and/or they were identified to be of potential concern by the Stage 1EIS for the proposed WWTP outfall.

[1] The YSI chlorophyll sensor measures total chlorophyll by *in vivo* fluorescence. While this provides a surrogate measure of algal productivity and the majority of the fluorescence is due to phytoplankton chlorophyll, other chemical or biological forms that fluoresce when irradiated with blue light (centered at 470 nm) may contribute to the observed *in vivo* measurements.

One sampling station was sampled in triplicate per outfall location and two equipment blanks were taken during the seasonal survey to satisfy quality assurance/quality control (QA/QC) requirements. Additional QA/QC protocols included the decontamination of equipment between sampling areas, appropriate documentation, and the analysis of laboratory replicate samples, certified reference materials and laboratory equipment blanks. These QA/QC measures were intended to facilitate the detection of systematic and random errors potentially associated with field sampling and laboratory procedures.

Water quality samples were stored at approximately ~4ºC and submitted to CanTest Ltd., Maxaam Analytics, and ALS Environmental Laboratories for the appropriate analyses (Table 3). Samples were analysed within the recommended maximum hold times and method detection limits (MDLs) were sufficiently low for comparison to British Columbia (BC) ambient water quality guidelines for the marine environment.

Table 3: Suite of Water Quality Parameters Analysed in Spring 2009 at Albert Head and Finnerty Cove

Sampling Media	Parameter Type	Parameters	Laboratory
Water	Conventional	pH Conductivity Salinity Alkalinity Total organic carbon (TOC) Dissolved organic carbon (DOC) Total suspended solids Major cations and anions Hardness	CanTest Ltd. ALS Environmental (TOC/DOC) Maxaam Analytics (Hardness and Major Cations)
	Biological	*Enterococci,* Fecal Coliforms	CanTest Ltd.
	Nutrients	Ammonia, Total kjeldahl nitrogen, Nitrate and nitrite (as N) Nitrate Total phosphate (as P) Orthophosphate (as P; dissolved)	CanTest Ltd.
	Trace Metals	Total and dissolved trace metals Total mercury	Maxaam Analytics CanTest Ltd.

4.0 DATA ANALYSIS METHODS

4.1 *In Situ* Water Quality Depth Profiles

Water quality data were downloaded from the YSI Sonde using EcoWatch software (YSI EcoWatch for Windows). The data were exported to Microsoft Excel worksheets for subsequent processing, including QA/QC of the datasets. Typically, the YSI Sonde was lowered to depth, *circa* 1 m above the ocean bottom (approximately 50 m below the water surface), and then slowly raised through the water column to provide profile data at two second intervals. Data recorded by the instrument above and at the water surface were removed from the data set[2].

[2] The retained data typically extended to approximately 0.3 m below the water surface.

4.2 Water Quality Analytical Data

Water quality data reports were reviewed upon receipt and corresponding water quality data compiled according to sampling location. Compiled analytical data for the two equipment blanks and six sets of triplicate samples (2 sites; 3 depths) were evaluated as part of the QA/QC assessment. Parameters detected in equipment blanks at concentrations > 5 times the MDL were flagged. The precision of field triplicate samples was estimated by calculating the percent relative standard deviation (RSD) between the samples. If the RSD exceeded 18% when any of the three concentrations were > 5 times the MDL, the exceedence was flagged (Mitchell 2006).

The compiled data were summarised statistically to calculate the 30-day average value for each sampling location, as well as the standard deviation, standard error, minimum and maximum. Data values below MDLs were included in all statistical calculations by using half the MDL. Summary data were then screened against BC Water Quality Guidelines for the Protection of Aquatic Life (BCWQGs for PAL) in marine waters.

5.0 RESULTS

In situ depth profile data for temperature, DO, pH, conductivity, salinity, total chlorophyll and turbidity, taken at each of the sampling locations during the five sampling events, are presented in raw form and graphically in Appendix II. The water quality data collected at the Albert Head and Finnerty Cove sampling locations are presented as 30-d statistical summaries in Tables III-1 to III-6 (Appendix III) and as raw data in Tables III-7 to III-13 (Appendix III).

5.1.1 Quality Assurance/Quality Control Assessment

The results of the field sampling water quality QA/QC assessment are presented in Appendix IV.

All parameters measured in the equipment blank samples collected after cleaning the Van Dorn water sampler were < 5 times the applicable detection limit with the exception of those listed in Table IV-1 (Appendix IV). The majority of the deviations were noted for the equipment blank taken on the 4 May 2009, which related to some residual nitric acid still present on the sampler after rinsing with deionized water. The subsequent water samples taken at Albert Head and Finnerty Cove would probably not have been affected because the sampler passed through 50 to 100 m of seawater before each sample was taken. This would result in the flushing out of residual acid as the sampler passed through the water column. However, to address the issue of residual acid on the Van Dorn sampler following cleaning, the number of deionized water rinses was increased and the nitric acid rinse was replaced by a hydrochloric acid rinse. This resulted in all parameters measured in the second equipment blank (14 May 2009) being present at concentrations < 5 times the applicable detection limit Table IV-1 (Appendix IV).

A comparison of the six sets of triplicate QA/QC samples indicated that triplicate measurements for the majority of parameters were similar with relative standard deviations of 18% or less (Table IV-2, Appendix IV). The largest variability in concentrations was noted for total and dissolved zinc in triplicates samples collected at Finnerty Cove on May 20, 2009. However, the zinc concentrations measured were all below the BCWQG for zinc in marine waters. There were no laboratory QA/QC issues identified by the analytical laboratories, with the exception of some dissolved zinc concentrations that exceeded total concentrations in three actual samples and a blank sample (Appendix V). While it is possible there was some contamination associated with field-filtering or the dissolved metal bottle, dissolved zinc concentrations in the three actual samples were still present at concentrations below the BCWQG in marine waters for total zinc.

6.0 CLOSURE

We trust that the information in this letter report is sufficient for your purposes; however, if you have any questions, please do not hesitate to contact the undersigned at 604-986-4331.

Yours very truly,

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

Elaine Irving, Ph.D.
Senior Environmental Scientist

ORIGINAL SIGNED

Lee Nikl, M.Sc., R.P.Bio.
Associate/Senior Environmental Scientist

ORIGINAL SIGNED

James Mortimor, M.Sc., C.Biol., R.P.Bio
Marine Biologist

EI/LHN/cap

Attachments: Appendices I – V
Figures 1 and 2

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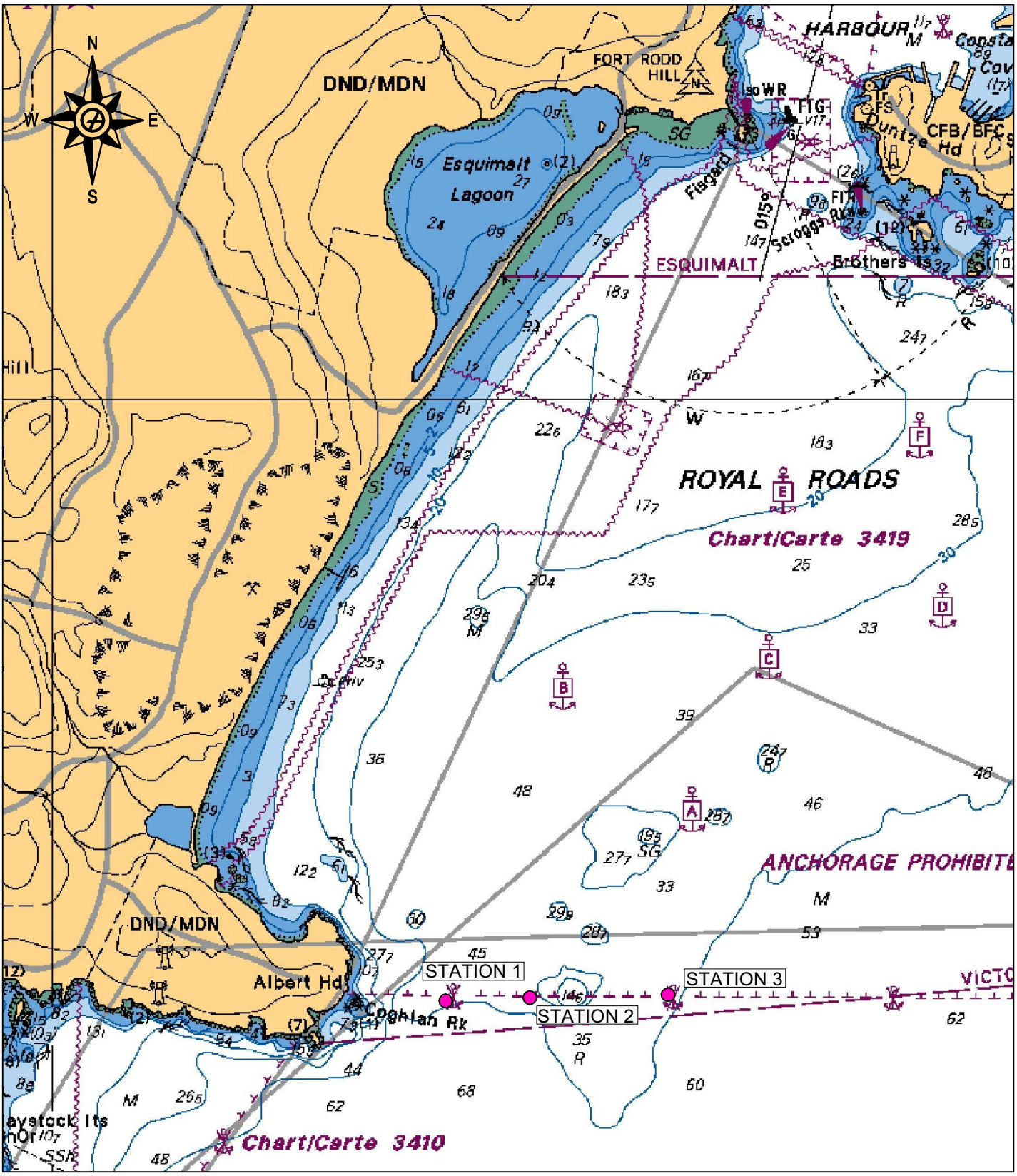
7.0 REFERENCES

Golder (Golder Associates Ltd.) 2009a. *"Stage 1 Environmental Impact Study: Capital Regional District Wastewater Treatment Plant Discharge".* Submitted to Associated Engineering. 65pp.

Golder (Golder Associates Ltd.) 2009b. *"Capital Regional District Wastewater Treatment Discharges: Proposed Baseline Monitoring Program Outline".* Submitted to Capital Regional District April 2009.13 pp.

Mitchell, P. 2006. *"Guidelines for Quality Assurance and Quality Control in Surface Water Quality Programs in Alberta".* Prepared for Alberta Environment. July 2006.

Moe (British Columbia Ministry of Environment). 2006. *"British Columbia Approved Water Quality Guidelines (criteria) – 2006".* Science and Information Branch, Environmental Protection Division, Ministry of Environment. Updated August 2006.



LEGEND

SAMPLING STATION

0 1

APPROXIMATE SCALE (km)

NOTE

DEPTH UNITS: METRES

REFERENCE

CHART #344001 PROVIDED BY NOBELTECH VISUAL NAVIGATION SUITE
(NAUTICAL DATA INTERNATIONAL ELECTRONIC CHARTS) ORIGINAL SCALE 1:111,000.

PROJECT

CAPITAL REGIONAL DISTRICT
SPRING 2009 WATER QUALITY MONITORING SURVEY

TITLE

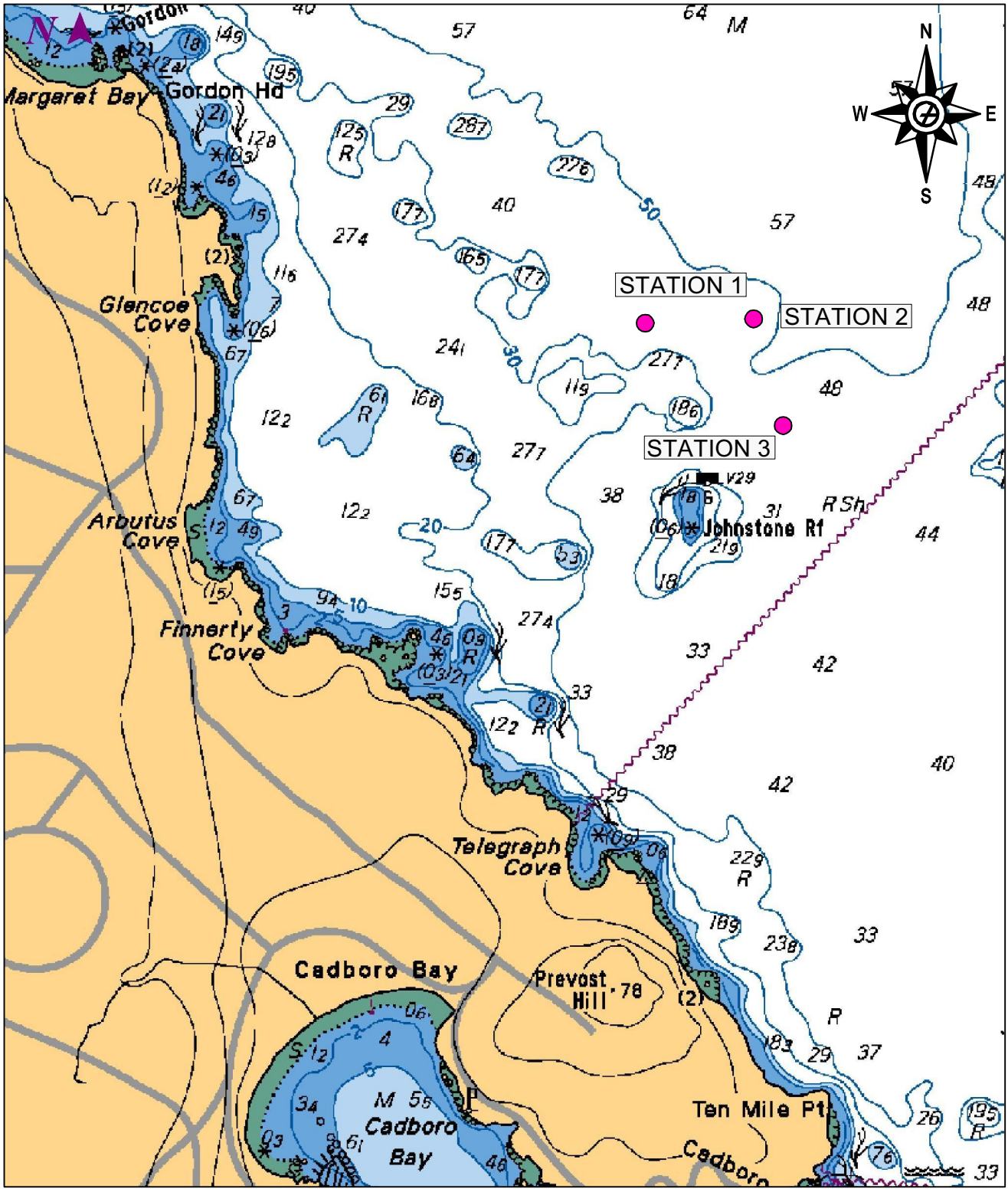
LOCATION OF SAMPLING STATIONS FOR THE PROPOSED OUTFALL IN THE VICINITY OF ALBERT HEAD

Golder Associates
Victoria, BC

PROJECT No. 09-1421-0028			FILE No. P0914210028-1.dwg	
DESIGN	JM	08 JUL 09	SCALE AS SHOWN	REV. 0
CADD	JEF	08 JUL 09		
CHECK				
REVIEW				

FIGURE 1

Drawing file: P0914210028-1.dwg Jul 08, 2009 - 5:21pm



LEGEND

SAMPLING STATION

0 1

APPROXIMATE SCALE (km)

NOTE

DEPTH UNITS: METRES

REFERENCE

CHART #344001 PROVIDED BY NOBELTECH VISUAL NAVIGATION SUITE
(NAUTICAL DATA INTERNATIONAL ELECTRONIC CHARTS) ORIGINAL SCALE 1:82,200.

PROJECT

CAPITAL REGIONAL DISTRICT
SPRING 2009 WATER QUALITY MONITORING SURVEY

TITLE

LOCATION OF SAMPLING STATIONS FOR THE PROPOSED OUTFALL IN THE VICINITY OF FINNERTY COVE

Golder Associates
Victoria, BC

PROJECT No. 09-1421-0028			FILE No. P0914210028-2.dwg	
DESIGN	JM	08 JUL 09	SCALE AS SHOWN	REV. 0
CADD	JEF	08 JUL 09		
CHECK				
REVIEW				

FIGURE 2

Drawing file: P0914210028-2.dwg Jul 08, 2009 - 5:35pm

APPENDIX I

YSI Calibration Records

CALIBRATION WORK SHEET

Date of Calibration: May 3 2009 Technician: Michelle Spani

DO membrane changed? Y (N) Note: Should wait 6 to 8 hours before final DO calibration, run sensor for 15 minutes in Discrete Run to accelerate burn-in.

Turbidity wiper changed? Y (N) Wiper parks ≈ 180° from optics? (Y) N Note: Change wiper if probe will not park correctly.

Chlorophyll wiper changed? Y (N) Wiper parks ≈ 180° from optics? (Y) N Note: Change wiper if probe will not park correctly.

Record battery voltage: 12.3 volts

Record the following diagnostic numbers after/during calibration.

				Record Calibration Values Actual	After calibration
Conductivity cell constant 5.04646	Range 5.0	± .5	Sp. Conductivity	1411 µS/cm	1413 µS/cm
pH MV Buffer 7	Range 0 MV	± 50 MV	pH 7	[redacted] → 7.01	7.02
pH MV Buffer 4	Range +177 from 7 buffer MV		pH 4		
pH MV Buffer 10	Range –177 from 7 buffer MV		pH 10	10.12	10.05
NOTE: Span between pH 4 and 7 and 7 and 10 millivolt numbers should be ≈ 165 to 180 MV			ORP		
			Depth		
DO charge	Range 50	± 25	Turbidity Distilled H_2O	-0.4	0
DO gain	Range 1.0	.7 to 1.5	Turbidity 126NTU	105.7	126.0 NTU
			Chlorophyll	[redacted] 0.2 µg/L	0.0 µg/L
Pressure Offset	Range –14.7	± 6 (non-vented)	Distilled H_2O Chlorophyll		
Pressure Offset	Range 0	± 6 (vented)	DO	101.6 %	100.3
ORP mV Offset	Range 0	± 100			

DISSOLVED OXYGEN SENSOR OUTPUT TEST (after DO calibration probe in saturated air)

The following tests will confirm the proper operation of your DO sensor. The DO charge and gain must meet spec before proceeding.

610/650– Turn off the 610/650, wait 60 seconds. Power up 610/650 and go to the Run mode, watch the DO % output; it must display a positive number and decrease with each 4 second sample, eventually stabilizing to the calibration value in approximately 60 to 120 seconds. **Note:** You can disregard the first two samples they can be affected by the electronics warm-up.

PC – Stop discrete and unattended sampling. Confirm that auto-sleep RS-232 is enabled (found in Advanced Menu under Setup). Wait 60 seconds. Start discrete sampling at 4 seconds. Watch the DO % output, it must display a positive number and decrease with each 4 second sample, eventually stabilizing to the calibration value in approximately 60 to 120 seconds. **Note:** You can disregard the first two samples they can be affected by the electronics warm-up.

The **ACCEPT/REJECT** criteria as follows:
The DO output in % must start at a positive number and decrease during the warm up. Example: 117, 117, 114, 113, 110, 107, 104, 102, 101, 100, 100. Should the output display a negative number or start at a low number and climb up to the cal point, the probe is rejected and must not be deployed.

✓ ACCEPT _____ REJECT

Notes:

May 3 2009

Distille H_2O test (Readings after calibration in Distilled water)

temp 20.40 °C

Specific cond. 3 µS/cm

cond. 0.003 mS/cm

Depth 0.091 m

pH 6.66

ORP -68.4

ODO 103.4 % / 9.33 mg/L

Chl -0.4 → 0.6 (fluctuating around zero)

Turbidity 0.4 NTU

May 4 2009 Post test (test in Distilled H_2O after use in field) @ ~5pm

temp 17.70 °C

Sp cond 78 µS/cm

cond 0.066

Depth -0.104 m

pH 7.18

ORP = -200.2

ODO = 97.2

ODO 9.27

chl -0.2 → -0.0

NTU 0.2 NTU

CALIBRATION WORK SHEET

Date of Calibration: May 5 2009 Technician: Michelle Spani

DO membrane changed? Y (N) Note: Should wait 6 to 8 hours before final DO calibration, run sensor for 15 minutes in Discrete Run to accelerate burn-in.

Turbidity wiper changed? Y (N) Wiper parks ≈ 180° from optics? (Y) N Note: Change wiper if probe will not park correctly.

Chlorophyll wiper changed? Y (N) Wiper parks ≈ 180° from optics? (Y) N Note: Change wiper if probe will not park correctly.

Record battery voltage: _____

Record the following diagnostic numbers after/during calibration.

			Record Calibration Values Actual	After calibration
Conductivity cell constant _____	Range 5.0 ± .5	Conductivity	1426 µS/cm	1413 µS/cm
pH MV Buffer 7 _____	Range 0 MV ± 50 MV	pH 7	6.99	7.04
pH MV Buffer 4 _____	Range +177 from 7 buffer MV	pH 4		
pH MV Buffer 10 _____	Range –177 from 7 buffer MV	pH 10	10.03	10.08
NOTE: Span between pH 4 and 7 and 7 and 10 millivolt numbers should be ≈ 165 to 180 MV		ORP		
		Depth		
DO charge _____	Range 50 ± 25	Turbidity	0.0 NTU	0.00 NTU
DO gain _____	Range 1.0 .7 to 1.5	Turbidity	117 NTU	126 NTU
		Chlorophyll	(0.5 → -0.5)	0.0
Pressure Offset _____	Range –14.7 ± 6 (non-vented)	Chlorophyll		
Pressure Offset _____	Range 0 ± 6 (vented)	DO % Sat	99.5	99.6
ORP mV Offset _____	Range 0 ± 100			

DISSOLVED OXYGEN SENSOR OUTPUT TEST (after DO calibration probe in saturated air)

The following tests will confirm the proper operation of your DO sensor. The DO charge and gain must meet spec before proceeding.

610/650– Turn off the 610/650, wait 60 seconds. Power up 610/650 and go to the Run mode, watch the DO % output; it must display a positive number and decrease with each 4 second sample, eventually stabilizing to the calibration value in approximately 60 to 120 seconds. **Note:** You can disregard the first two samples they can be affected by the electronics warm-up.

PC – Stop discrete and unattended sampling. Confirm that auto-sleep RS-232 is enabled (found in Advanced Menu under Setup). Wait 60 seconds. Start discrete sampling at 4 seconds. Watch the DO % output, it must display a positive number and decrease with each 4 second sample, eventually stabilizing to the calibration value in approximately 60 to 120 seconds. **Note:** You can disregard the first two samples they can be affected by the electronics warm-up.

The **ACCEPT/REJECT** criteria as follows:
The DO output in % must start at a positive number and decrease during the warm up. Example: 117, 117, 114, 113, 110, 107, 104, 102, 101, 100, 100. Should the output display a negative number or start at a low number and climb up to the cal point, the probe is rejected and must not be deployed.

✓ ACCEPT _____ REJECT

Notes:

Golder Associates

JOB NO.	Made By / Reviewed	Date / Sheet of

May 11 2009 YSI Calibration

	Before Calibration	After Calibration
Sp.cond	1418 uS/cm	1413 uS/cm
cond	1.252 mS/cm	1.248 mS/cm
DO	99.9 %	100.2 %
pH (7)	7.04	7.01
pH (10)	10.01	10.07
Turbidity	-0.1 NTU	0.0 NTU
Turbidity (126)	132.3	126.1 NTU
chlorophyll	0.2 ug/L	0.0 ug/L

10.056

CALIBRATION WORK SHEET

Date of Calibration: May 13 2009 Technician: Michelle Spani

DO membrane changed? Y (N) Note: Should wait 6 to 8 hours before final DO calibration, run sensor for 15 minutes in Discrete Run to accelerate burn-in.

Turbidity wiper changed? Y (N) Wiper parks ≈ 180° from optics? (Y) N Note: Change wiper if probe will not park correctly.

Chlorophyll wiper changed? Y (N) Wiper parks ≈ 180° from optics? (Y) N Note: Change wiper if probe will not park correctly.

Record battery voltage: _____

Record the following diagnostic numbers after/during calibration.

			Record Calibration Values: Actual	After calibration
Conductivity cell constant _____	Range 5.0 ± .5	Conductivity	1392 mS/cm	1413
pH MV Buffer 7 _____	Range 0 MV ± 50 MV	pH 7	6.95	7.01
pH MV Buffer 4 _____	Range +177 from 7 buffer MV	pH 4	—	—
pH MV Buffer 10 _____	Range –177 from 7 buffer MV	pH 10	10.04	10.04
NOTE: Span between pH 4 and 7 and 7 and 10 millivolt numbers should be ≈ 165 to 180 MV		ORP	_____	_____
		Depth	_____	_____
DO charge _____	Range 50 ± 25	Turbidity (DI Shield H2O)	0.0	0.0
DO gain _____	Range 1.0 .7 to 1.5	Turbidity (126 NTU Std)	147.1 NTU	126 NTU
		Chlorophyll (DI Soaked H2O)	0.4 ug/L	0.0 ug/L
Pressure Offset _____	Range –14.7 ± 6 (non-vented)	Chlorophyll	_____	_____
Pressure Offset _____	Range 0 ± 6 (vented)	DO	99.1%	100%
ORP mV Offset _____	Range 0 ± 100			

DISSOLVED OXYGEN SENSOR OUTPUT TEST (after DO calibration probe in saturated air)

The following tests will confirm the proper operation of your DO sensor. The DO charge and gain must meet spec before proceeding.

610/650– Turn off the 610/650, wait 60 seconds. Power up 610/650 and go to the Run mode, watch the DO % output; it must display a positive number and decrease with each 4 second sample, eventually stabilizing to the calibration value in approximately 60 to 120 seconds. **Note:** You can disregard the first two samples they can be affected by the electronics warm-up.

PC – Stop discrete and unattended sampling. Confirm that auto-sleep RS-232 is enabled (found in Advanced Menu under Setup). Wait 60 seconds. Start discrete sampling at 4 seconds. Watch the DO % output, it must display a positive number and decrease with each 4 second sample, eventually stabilizing to the calibration value in approximately 60 to 120 seconds. **Note:** You can disregard the first two samples they can be affected by the electronics warm-up.

The **ACCEPT/REJECT** criteria as follows:
The DO output in % must start at a positive number and decrease during the warm up. Example: 117, 117, 114, 113, 110, 107, 104, 102, 101, 100, 100. Should the output display a negative number or start at a low number and climb up to the cal point, the probe is rejected and must not be deployed.

✓ **ACCEPT** _____ **REJECT**

Notes:

CALIBRATION WORK SHEET

Date of Calibration: MAY 18/09 Technician: JAMES MORTIMOR

DO membrane changed? Y (N) Note: Should wait 6 to 8 hours before final DO calibration, run sensor for 15 minutes in Discrete Run to accelerate burn-in.

Turbidity wiper changed? Y (N) Wiper parks ≈ 180° from optics? (Y) N Note: Change wiper if probe will not park correctly.

Chlorophyll wiper changed? Y (N) Wiper parks ≈ 180° from optics? (Y) N Note: Change wiper if probe will not park correctly.

Record battery voltage: _____

Record the following diagnostic numbers after/during calibration.

			Record Calibration Values	
			Actual	After calibration
Conductivity cell constant _____	Range 5.0 ± .5	Conductivity	1408	1413
pH MV Buffer 7 _____	Range 0 MV ± 50 MV	pH 7	7.01	7.03
pH MV Buffer 4 _____	Range +177 from 7 buffer MV	~~pH 4~~		
pH MV Buffer 10 _____	Range –177 from 7 buffer MV	pH 10 (recal pH 10 first)	10.23	10.05
NOTE: Span between pH 4 and 7 and 7 and 10 millivolt numbers should be ≈ 165 to 180 MV		ORP		
		Depth		
DO charge _____	Range 50 ± 25	Turbidity (H_2O)	-0.3 NTU	0 NTU
DO gain _____	Range 1.0 .7 to 1.5	Turbidity, 26 ntu std	115 NTU	126 NTU.
		Chlorophyll H_2O	-0.3	0.0
Pressure Offset _____	Range –14.7 ± 6 (non-vented)	Chlorophyll		
Pressure Offset _____	Range 0 ± 6 (vented)	DO	101.4%	99.8%
ORP mV Offset _____	Range 0 ± 100			

DISSOLVED OXYGEN SENSOR OUTPUT TEST (after DO calibration probe in saturated air)

The following tests will confirm the proper operation of your DO sensor. The DO charge and gain must meet spec before proceeding.

610/650– Turn off the 610/650, wait 60 seconds. Power up 610/650 and go to the Run mode, watch the DO % output; it must display a positive number and decrease with each 4 second sample, eventually stabilizing to the calibration value in approximately 60 to 120 seconds. **Note:** You can disregard the first two samples they can be affected by the electronics warm-up.

PC – Stop discrete and unattended sampling. Confirm that auto-sleep RS-232 is enabled (found in Advanced Menu under Setup). Wait 60 seconds. Start discrete sampling at 4 seconds. Watch the DO % output, it must display a positive number and decrease with each 4 second sample, eventually stabilizing to the calibration value in approximately 60 to 120 seconds. **Note:** You can disregard the first two samples they can be affected by the electronics warm-up.

The **ACCEPT/REJECT** criteria as follows:
The DO output in % must start at a positive number and decrease during the warm up. Example: 117, 117, 114, 113, 110, 107, 104, 102, 101, 100, 100. Should the output display a negative number or start at a low number and climb up to the cal point, the probe is rejected and must not be deployed.

✓ _____ ACCEPT _____ REJECT

Notes:

CALIBRATION WORK SHEET

Date of Calibration: ~~MAY 23~~ SUN MAY 24/2009 Technician: JAMES MORTIMER

DO membrane changed? Y (N) Note: Should wait 6 to 8 hours before final DO calibration, run sensor for 15 minutes in Discrete Run to accelerate burn-in.

Turbidity wiper changed? Y (N) Wiper parks ≈ 180° from optics? (Y) N Note: Change wiper if probe will not park correctly.

Chlorophyll wiper changed? Y (N) Wiper parks ≈ 180° from optics? (Y) N Note: Change wiper if probe will not park correctly.

Record battery voltage: _____

Record the following diagnostic numbers after/during calibration.

			Record Calibration Values Actual	After calibration
Conductivity cell constant _____	Range 5.0 ± .5	Conductivity	1405	1413
pH MV Buffer 7 _____	Range 0 MV ± 50 MV	pH 7	7.04	7.01
pH MV Buffer 4 _____	Range +177 from 7 buffer MV	~~pH 4~~		
pH MV Buffer 10 _____	Range –177 from 7 buffer MV	pH 10	9.88	10.05
NOTE: Span between pH 4 and 7 and 7 and 10 millivolt numbers should be ≈ 165 to 180 MV		ORP		
		Depth		
DO charge _____	Range 50 ± 25	Turbidity (H_2O)	0.0 NTU	0.0 NTU
DO gain _____	Range 1.0 .7 to 1.5	Turbidity 126 NTU std	135 NTU	126 NTU
		Chlorophyll		
Pressure Offset _____	Range –14.7 ± 6 (non-vented)	Chlorophyll H_2O	0.3	0.0
Pressure Offset _____	Range 0 ± 6 (vented)	DO	103.1%	100.3%
ORP mV Offset _____	Range 0 ± 100			

DISSOLVED OXYGEN SENSOR OUTPUT TEST (after DO calibration probe in saturated air)

The following tests will confirm the proper operation of your DO sensor. The DO charge and gain must meet spec before proceeding.

610/650– Turn off the 610/650, wait 60 seconds. Power up 610/650 and go to the Run mode, watch the DO % output; it must display a positive number and decrease with each 4 second sample, eventually stabilizing to the calibration value in approximately 60 to 120 seconds. **Note:** You can disregard the first two samples they can be affected by the electronics warm-up.

PC – Stop discrete and unattended sampling. Confirm that auto-sleep RS-232 is enabled (found in Advanced Menu under Setup). Wait 60 seconds. Start discrete sampling at 4 seconds. Watch the DO % output, it must display a positive number and decrease with each 4 second sample, eventually stabilizing to the calibration value in approximately 60 to 120 seconds. **Note:** You can disregard the first two samples they can be affected by the electronics warm-up.

The **ACCEPT/REJECT** criteria as follows:
The DO output in % must start at a positive number and decrease during the warm up. Example: 117, 117, 114, 113, 110, 107, 104, 102, 101, 100, 100. Should the output display a negative number or start at a low number and climb up to the cal point, the probe is rejected and must not be deployed.

_____ **ACCEPT** _____ **REJECT**

Notes:

APPENDIX II

Depth Profile Data – Please Refer to Excel Files

APPENDIX III

Water Quality Summary Statistics and Raw Data

Table III-1: Summary Water Quality Statistics for Albert Head Station 1
Calculated for Five Sampling Events Over a 30-day Period, Spring 2009

Parameter	BC WQGs for PAL (Marine)	Units	Albert Head Station 1-Below the Water Surface						Albert Head Station 1-Middle of the Water Column					
			Mean	St Dev	St Err	Min	Max	n	Mean	St Dev	St Err	Min	Max	n
Conventional														
Alkalinity (Total)	-	mg/L	110	0.4	0.2	109	110	4	111	1.1	0.5	110	112	5
Conductivity	-	µS/cm	50340	2006	897	48300	52600	5	49420	1569	702	48000	51900	5
Hardness (CaCO3)	-	mg/L	7000	405	181	6420	7420	5	7170	471	211	6390	7500	4
Dissolved Organic Carbon	-	mg/L	<0.5	-	-	<0.5	0.73	5	<0.5	-	-	<0.5	0.76	5
pH	7.0 - 8.7	pH Units	7.8	-	-	7.8	7.8	5	7.8	-	-	7.8	7.8	5
Salinity	-	Salinity Units	33.0	1.4	0.6	31.5	34.6	5	32.3	1.1	0.5	31.3	34.1	5
Total Organic Carbon	-	mg/L	0.61	0.28	0.14	<0.5	0.84	5	<0.5	-	-	<0.5	0.65	5
Total Suspended Solids	-	mg/L	2	1	0.5	<2	3	5	2	1	0.4	<2	3	5
Major Ions														
Bicarbonate (HCO3)	-	mg/L	134	1	0.4	133	135	5	136	2	1	134	137	5
Carbonate (CO3)	-	mg/L	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5
Dissolved Calcium (Ca)	-	mg/L	471	15	7	457	487	5	482	19	9	450	498	5
Dissolved Chloride (Cl)	-	mg/L	19320	853	381	18800	20800	5	19480	983	440	18900	21200	5
Dissolved Fluoride F	1.5[A]	mg/L	**<25**	-	-	**<10**	**<25**	5	**<25**	-	-	**<10**	**<25**	5
Hydroxide (OH-)	-	mg/L	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5
Dissolved Magnesium (Mg)	-	mg/L	1414	92	41	1280	1510	5	1450	104	47	1280	1530	5
Dissolved Potassium (K)	-	mg/L	421	21	10	392	443	5	430	28	12	382	447	5
Dissolved Sodium (Na)	-	mg/L	10900	1005	449	10000	12400	5	10720	683	306	10000	11800	5
Dissolved Sulphate (SO4)	-	mg/L	2466	210	94	2120	2690	5	2436	181	81	2120	2570	5
Dissolved Sulphur (S)	-	mg/L	1102	48	22	1040	1160	5	1130	58	26	1030	1170	5
Total Calcium (Ca)	-	mg/L	477	18	8	449	494	5	475	22	10	451	496	5
Total Magnesium (Mg)	-	mg/L	1436	120	54	1230	1540	5	1450	116	52	1260	1540	5
Total Potassium (K)	-	mg/L	430	28	13	381	452	5	430	31	14	380	455	5
Total Sodium (Na)	-	mg/L	10440	261	117	10100	10800	5	10452	992	444	8860	11600	5
Total Sulphur (S)	-	mg/L	1138	48	21	1070	1200	5	1140	59	26	1050	1180	5
Nutrients														
Ammonia (as N)	7.9 - 50[B]	mg/L	0.04	0.01	0.01	0.02	0.06	5	0.04	0.01	0.004	0.03	0.05	5
Total Kjeldahl Nitrogen N	-	mg/L	0.2	0.2	0.1	<0.2	0.5	5	0.2	0.1	0.04	<0.2	0.3	5
Nitrate (as N)	-	mg/L	0.346	0.047	0.021	0.296	0.417	5	0.344	0.027	0.012	0.301	0.373	5
Nitrite (as N)	-	mg/L	0.004	0.000	0.000	0.003	0.004	5	0.004	0.001	0.000	0.004	0.005	5
Nitrate and Nitrite N	-	mg/L	0.350	0.047	0.021	0.3	0.421	5	0.349	0.027	0.012	0.306	0.377	5
Total Nitrogen (Calc as N)	-	mg/L	0.6	0.2	0.1	0.4	0.9	5	0.5	0.1	0.04	0.5	0.6	5
Ortho Phosphorus P	-	mg/L as P	0.066	0.005	0.002	0.057	0.069	5	0.067	0.003	0.002	0.062	0.071	5
Total Phosphorus P	-	mg/L as P	0.074	0.006	0.003	0.068	0.084	5	0.074	0.003	0.001	0.072	0.079	5
Biological														
Enterococci	-	Col./100 mL	4	2	1	1	7	5	28	36	16	5	92	5
Fecal Coliform	-	Col./100 mL	13	12	5	4	26	5	128	193	86	18	470	5
Total Metals														
Total Aluminum (Al)	-	µg/L	19	7	3	14	32	5	23	5	2	20	31	5
Total Antimony (Sb)	-	µg/L	<0.5	-	-	<0.5	<0.5	5	<0.5	-	-	<0.5	<0.5	5
Total Arsenic (As)	12.5[A (interim)]	µg/L	2.0	0.1	0.04	1.9	2.1	5	2.0	0.2	0.1	1.8	2.3	5
Total Barium (Ba)	1000[C]/500[D]/200[E]	µg/L	8	1	0.2	8	9	5	8	0.4	0.2	8	9	5
Total Beryllium (Be)	1500[C]/100[D]	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Total Bismuth (Bi)	-	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Total Boron (B)	1200	µg/L	**4098**	262	117	**3740**	**4370**	5	**4126**	251	112	**3820**	**4360**	5
Total Cadmium (Cd)	0.12[A]	µg/L	0.08	0.01	0.004	0.07	0.09	5	0.08	0.01	0.004	0.07	0.09	5
Total Chromium (Cr)	1.5 Cr(VI)/56 Cr(III)	µg/L	<0.5	-	-	<0.5	<0.5	5	<0.5	-	-	<0.5	<0.5	5
Total Cobalt (Co)	-	µg/L	<0.05	-	-	<0.05	<0.05	5	<0.05	-	-	<0.05	<0.05	5
Total Copper (Cu)	3[A]/2[F]	µg/L	0.37	0.16	0.07	0.24	0.6	5	0.31	0.13	0.06	0.24	0.54	5
Total Iron (Fe)	-	µg/L	14	4	2	8	18	5	16	4	2	9	20	5
Total Lead (Pb)	140[A]/2[F]	µg/L	0.05	0.06	0.03	<0.05	0.15	5	<0.05	-	-	<0.05	<0.05	5
Total Lithium (Li)	-	µg/L	185	9	4	169	191	5	186	10	4	170	193	5
Total Manganese (Mn)	100[G]	µg/L	1.4	0.1	0.1	1.2	1.5	5	1.4	0.1	0.04	1.3	1.5	5
Total Mercury (Hg)	2[A]/0.02[F]	µg/L	<0.02	-	-	<0.02	<0.02	5	<0.02	-	-	<0.02	<0.02	5
Total Molybdenum (Mo)	-	µg/L	10	0	0	10	10	5	10	0.4	0.2	10	11	5
Total Nickel (Ni)	75[I]/8.3[J]	µg/L	0.57	0.23	0.10	0.37	0.83	5	0.37	0.03	0.01	0.34	0.41	5
Total Selenium (Se)	2[E]	µg/L	<0.5	-	-	<0.5	<0.5	5	<0.5	-	-	<0.5	<0.5	5
Total Silicon (Si)	-	µg/L	1632	128	57	1430	1760	5	1658	138	62	1420	1770	5
Total Silver (Ag)	3[A]/1.5[F]	µg/L	<0.05	-	-	<0.05	<0.05	5	0.03	0.02	0.01	<0.05	0.06	5
Total Strontium (Sr)	-	µg/L	7422	360	161	6940	7780	5	7350	372	166	6920	7800	5
Total Thallium (Tl)	-	µg/L	<0.1	-	-	<0.1	<0.1	5	<0.1	-	-	<0.1	<0.1	5
Total Tin (Sn)	-	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Total Titanium (Ti)	-	µg/L	<10	-	-	<10	<10	5	<10	-	-	<10	<10	5
Total Uranium (U)	500[C]/100[D]	µg/L	2.50	0.12	0.05	2.33	2.64	5	2.48	0.17	0.08	2.29	2.67	5
Total Vanadium (V)	50[J]	µg/L	<10	-	-	<10	<10	5	<10	-	-	<10	<10	5
Total Zinc (Zn)	10	µg/L	2.4	3.1	1.4	0.7	8	5	1.8	2.0	0.9	0.5	5.4	5
Dissolved Metals														
Dissolved Aluminum (Al)	-	µg/L	10	12	5	<10	31	5	8	7	3	<10	21	5
Dissolved Antimony (Sb)	-	µg/L	0.4	0.3	0.2	<0.5	1.0	5	0.4	0.4	0.2	<0.5	1.2	5
Dissolved Arsenic (As)	-	µg/L	2.0	0.2	0.1	1.8	2.2	5	2.0	0.1	0.1	1.9	2.2	5
Dissolved Barium (Ba)	-	µg/L	8	0	0	8	8	5	8	0	0	8	8	5
Dissolved Beryllium (Be)	-	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Dissolved Bismuth (Bi)	-	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Dissolved Boron (B)	-	µg/L	4002	295	132	3670	4280	5	4096	275	123	3750	4340	5
Dissolved Cadmium (Cd)	-	µg/L	0.08	0.01	0.00	0.07	0.09	5	0.07	0.01	0.00	0.07	0.08	5
Dissolved Chromium (Cr)	-	µg/L	<0.5	-	-	<0.5	<0.5	5	<0.5	-	-	<0.5	<0.5	5
Dissolved Cobalt (Co)	-	µg/L	<0.05	-	-	<0.05	<0.05	5	<0.05	-	-	<0.05	<0.05	5
Dissolved Copper (Cu)	-	µg/L	0.34	0.17	0.08	0.19	0.55	5	0.32	0.17	0.07	0.22	0.61	5
Dissolved Iron (Fe)	-	µg/L	2	1	0.3	1	3	5	2	1	0.4	1	3	5
Dissolved Lead (Pb)	-	µg/L	0.04	0.03	0.01	<0.05	0.09	5	0.04	0.04	0.02	<0.05	0.12	5
Dissolved Lithium (Li)	-	µg/L	181	9	4	167	190	5	185	9	4	170	193	5
Dissolved Manganese (Mn)	-	µg/L	1	0.1	0.1	0.7	1	5	1	0.1	0.04	0.7	0.9	5
Dissolved Molybdenum (Mo)	-	µg/L	10	1	0.4	9	11	5	10	1	0.2	10	11	5
Dissolved Nickel (Ni)	-	µg/L	0.49	0.09	0.04	0.38	0.58	5	0.46	0.13	0.06	0.35	0.62	5
Dissolved Selenium (Se)	-	µg/L	<0.5	-	-	<0.5	<0.5	5	<0.5	-	-	<0.5	<0.5	5
Dissolved Silicon (Si)	-	µg/L	1542	165	74	1270	1690	5	1572	126	57	1380	1700	5
Dissolved Silver (Ag)	-	µg/L	<0.05	-	-	<0.05	<0.05	5	0.03	0.02	0.01	<0.05	0.07	5
Dissolved Strontium (Sr)	-	µg/L	7212	421	188	6720	7720	5	7472	396	177	6840	7860	5
Dissolved Thallium (Tl)	-	µg/L	<0.1	-	-	<0.1	<0.1	5	<0.1	-	-	<0.1	<0.1	5
Dissolved Tin (Sn)	-	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Dissolved Titanium (Ti)	-	µg/L	<10	-	-	<10	<10	5	<10	-	-	<10	<10	5
Dissolved Uranium (U)	-	µg/L	2.53	0.23	0.10	2.29	2.88	5	2.63	0.23	0.10	2.40	3.00	5
Dissolved Vanadium (V)	-	µg/L	<10	-	-	<10	<10	5	<10	-	-	<10	<10	5
Dissolved Zinc (Zn)	-	µg/L	3.3	4.2	1.9	0.6	10.8	5	2.0	2.0	0.9	0.7	5.4	5

Notes

BC WQGs for PAL (Marine)- British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life (MoE 2006)

Bolded Values	Exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
Bolded Values	Analytical detection limits exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
-	No values available

To calculate the pH summary statistics; pH was first converted to the hydrogen ion concentration, then the statistics were calculated and the summary values were converted back to pH units.

A. Maximum concentration
B. 30 ppt Salinity; 7.8 pH; 0 to 25 °C
C. Hazard
D. Minimal risk
E. Adverse effects on bivalve
F. 30-day average
G. Protect consumers of shellfish
H. 4-h average
I. 1-h average
J. Trigger value for 99% level of protection

Table III-1: Summary Water Quality Statistics for Albert Head Station 1
Calculated for Five Sampling Events Over a 30-day Period, Spring 2009

Parameter	BC WQGs for PAL (Marine)	Units	Albert Head Station 1- Above the Sediment Bottom					
			Mean	St Dev	St Err	Min	Max	n
Conventional								
Alkalinity (Total)	-	mg/L	112	0.8	0.4	111	113	5
Conductivity	-	µS/cm	50860	2296	1027	48300	53800	5
Hardness (CaCO3)	-	mg/L	7194	491	220	6410	7610	5
Dissolved Organic Carbon	-	mg/L	0.51	0.18	0.09	<0.5	0.67	5
pH	7.0 - 8.7	pH Units	7.8	-	-	7.7	7.8	5
Salinity	-	Salinity Units	33.4	1.7	0.7	31.5	35.5	5
Total Organic Carbon	-	mg/L	<0.5	-	-	<0.5	0.67	5
Total Suspended Solids	-	mg/L	2	1	1	<2	4	5
Major Ions								
Bicarbonate (HCO3)	-	mg/L	136	1	1	135	138	5
Carbonate (CO3)	-	mg/L	<2	-	-	<2	<2	5
Dissolved Calcium (Ca)	-	mg/L	483	20	9	450	500	5
Dissolved Chloride (Cl)	-	mg/L	19900	1056	472	19000	21100	5
Dissolved Fluoride F	1.5[A]	mg/L	**<25**	-	-	**<10**	**<25**	5
Hydroxide (OH-)	-	mg/L	<2	-	-	<2	<2	5
Dissolved Magnesium (Mg)	-	mg/L	1454	108	48	1280	1550	5
Dissolved Potassium (K)	-	mg/L	431	28	13	383	453	5
Dissolved Sodium (Na)	-	mg/L	10740	623	279	10200	11800	5
Dissolved Sulphate (SO4)	-	mg/L	2454	190	85	2120	2580	5
Dissolved Sulphur (S)	-	mg/L	1136	57	25	1040	1180	5
Total Calcium (Ca)	-	mg/L	477	23	10	443	503	5
Total Magnesium (Mg)	-	mg/L	1458	119	53	1250	1530	5
Total Potassium (K)	-	mg/L	432	33	15	375	456	5
Total Sodium (Na)	-	mg/L	10532	345	154	9960	10800	5
Total Sulphur (S)	-	mg/L	1146	65	29	1040	1200	5
Nutrients								
Ammonia (as N)	7.9 - 50[B]	mg/L	0.04	0.01	0.005	0.03	0.05	5
Total Kjeldahl Nitrogen N	-	mg/L	0.2	0.1	0.04	<0.2	0.3	5
Nitrate (as N)	-	mg/L	0.362	0.050	0.022	0.299	0.425	5
Nitrite (as N)	-	mg/L	0.004	0.000	0.000	0.004	0.004	5
Nitrate and Nitrite N	-	mg/L	0.366	0.050	0.022	0.303	0.429	5
Total Nitrogen (Calc as N)	-	mg/L	0.6	0.1	0.04	0.5	0.6	5
Ortho Phosphorus P	-	mg/L as P	0.067	0.003	0.001	0.062	0.069	5
Total Phosphorus P	-	mg/L as P	0.075	0.002	0.001	0.074	0.078	5
Biological								
Enterococci	-	Col./100 mL	21	35	16	2	83	5
Fecal Coliform	-	Col./100 mL	77	114	51	15	280	5
Total Metals								
Total Aluminum (Al)	-	µg/L	23	7	3	19	36	5
Total Antimony (Sb)	-	µg/L	<0.5	-	-	<0.5	<0.5	5
Total Arsenic (As)	12.5[A (interim)]	µg/L	2.0	0.2	0.1	1.7	2.1	5
Total Barium (Ba)	1000[C]/500[D]/200[E]	µg/L	8	1	0.2	8	9	5
Total Beryllium (Be)	1500[C]/100[D]	µg/L	<1	-	-	<1	<1	5
Total Bismuth (Bi)	-	µg/L	<1	-	-	<1	<1	5
Total Boron (B)	1200	µg/L	**4160**	245	110	**3860**	**4420**	5
Total Cadmium (Cd)	0.12[A]	µg/L	0.08	0.01	0.004	0.07	0.09	5
Total Chromium (Cr)	1.5 Cr(VI)/56 Cr(III)	µg/L	<0.5	-	-	<0.5	<0.5	5
Total Cobalt (Co)	-	µg/L	<0.05	-	-	<0.05	<0.05	5
Total Copper (Cu)	3[A]/2[F]	µg/L	0.32	0.11	0.05	0.21	0.51	5
Total Iron (Fe)	-	µg/L	17	2	1	15	20	5
Total Lead (Pb)	140[A]/2[F]	µg/L	0.03	0.01	0.01	<0.05	0.05	5
Total Lithium (Li)	-	µg/L	187	9	4	172	195	5
Total Manganese (Mn)	100[G]	µg/L	1.3	0.1	0.1	1.2	1.5	5
Total Mercury (Hg)	2[A]/0.02[F]	µg/L	0.01	0.004	0.002	<0.02	0.02	5
Total Molybdenum (Mo)	-	µg/L	10	0	0	10	10	5
Total Nickel (Ni)	75[I]/8.3[J]	µg/L	0.52	0.18	0.08	0.35	0.76	5
Total Selenium (Se)	2[E]	µg/L	<0.5	-	-	<0.5	<0.5	5
Total Silicon (Si)	-	µg/L	1682	134	60	1450	1780	5
Total Silver (Ag)	3[A]/1.5[F]	µg/L	<0.05	-	-	<0.05	<0.05	5
Total Strontium (Sr)	-	µg/L	7384	394	176	6920	7950	5
Total Thallium (Tl)	-	µg/L	<0.1	-	-	<0.1	<0.1	5
Total Tin (Sn)	-	µg/L	<1	-	-	<1	<1	5
Total Titanium (Ti)	-	µg/L	<10	-	-	<10	<10	5
Total Uranium (U)	500[C]/100[D]	µg/L	2.53	0.19	0.08	2.31	2.82	5
Total Vanadium (V)	50[J]	µg/L	<10	-	-	<10	<10	5
Total Zinc (Zn)	10	µg/L	2.4	3.9	1.8	<0.5	9.4	5
Dissolved Metals								
Dissolved Aluminum (Al)	-	µg/L	<10	-	-	<10	<10	5
Dissolved Antimony (Sb)	-	µg/L	0.4	0.3	0.2	<0.5	1.0	5
Dissolved Arsenic (As)	-	µg/L	2.0	0.2	0.1	1.6	2.2	5
Dissolved Barium (Ba)	-	µg/L	8	0	0	8	8	5
Dissolved Beryllium (Be)	-	µg/L	<1	-	-	<1	<1	5
Dissolved Bismuth (Bi)	-	µg/L	<1	-	-	<1	<1	5
Dissolved Boron (B)	-	µg/L	4084	271	121	3790	4420	5
Dissolved Cadmium (Cd)	-	µg/L	0.08	0.01	0.00	0.07	0.09	5
Dissolved Chromium (Cr)	-	µg/L	<0.5	-	-	<0.5	<0.5	5
Dissolved Cobalt (Co)	-	µg/L	<0.05	-	-	<0.05	<0.05	5
Dissolved Copper (Cu)	-	µg/L	0.32	0.12	0.05	0.23	0.53	5
Dissolved Iron (Fe)	-	µg/L	3	1	0.4	2	4	5
Dissolved Lead (Pb)	-	µg/L	0.04	0.02	0.01	<0.05	0.06	5
Dissolved Lithium (Li)	-	µg/L	184	9	4	170	195	5
Dissolved Manganese (Mn)	-	µg/L	1	0.1	0.02	0.7	0.8	5
Dissolved Molybdenum (Mo)	-	µg/L	10	0.4	0.2	10	11	5
Dissolved Nickel (Ni)	-	µg/L	0.42	0.04	0.02	0.37	0.48	5
Dissolved Selenium (Se)	-	µg/L	<0.5	-	-	<0.5	<0.5	5
Dissolved Silicon (Si)	-	µg/L	1594	143	64	1350	1720	5
Dissolved Silver (Ag)	-	µg/L	<0.05	-	-	<0.05	<0.05	5
Dissolved Strontium (Sr)	-	µg/L	7474	394	176	6900	7820	5
Dissolved Thallium (Tl)	-	µg/L	<0.1	-	-	<0.1	<0.1	5
Dissolved Tin (Sn)	-	µg/L	<1	-	-	<1	<1	5
Dissolved Titanium (Ti)	-	µg/L	<10	-	-	<10	<10	5
Dissolved Uranium (U)	-	µg/L	2.61	0.15	0.07	2.36	2.75	5
Dissolved Vanadium (V)	-	µg/L	<10	-	-	<10	<10	5
Dissolved Zinc (Zn)	-	µg/L	3.2	4.4	1.9	0.9	11	5

Notes

BC WQGs for PAL (Marine)- British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life (MoE 2006)

Bolded Values	Exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
Bolded Values	Analytical detection limits exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
-	No values available

To calculate the pH summary statistics; pH was first converted to the hydrogen ion concentration, then the statistics were calculated and the summary values were converted back to pH units.

A. Maximum concentration
B. 30 ppt Salinity; 7.8 pH; 0 to 25 °C
C. Hazard
D. Minimal risk
E. Adverse effects on bivalve
F. 30-day average
G. Protect consumers of shellfish
H. 4-h average
I. 1-h average
J. Trigger value for 99% level of protection

Table III-2: Summary Water Quality Statistics for Albert Head Station 2
Calculated for Five Sampling Events Over a 30-day Period, Spring 2009

Parameter	BC WQGs for PAL (Marine)	Units	Albert Head Station 2-Below the Water Surface						Albert Head Station 2-Middle of the Water Column						Albert Head Station 2- Above the Sediment Bottom					
			Mean	St Dev	St Err	Min	Max	n	Mean	St Dev	St Err	Min	Max	n	Mean	St Dev	St Err	Min	Max	n
Conventional																				
Alkalinity (Total)	-	mg/L	112	0.4	0.2	112	113	5	111	1	1	110	112	4	111	3	1	107	113	5
Conductivity	-	µS/cm	50180	1038	464	48900	51500	5	50425	2012	1006	48700	53300	4	49340	1977	884	46200	51400	5
Hardness (CaCO3)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon	-	mg/L	0.47	0.26	0.13	<0.5	0.73	4	0.38	0.19	0.08	<0.5	0.63	3	0.34	0.17	0.09	<0.5	0.59	4
pH	7.0 - 8.7	pH Units	7.8	-	-	7.8	7.8	5	7.8	-	-	7.8	7.8	4	7.8	-	-	7.8	7.8	5
Salinity	-	Salinity Units	32.8	0.8	0.3	31.9	33.8	5	33.1	1.5	0.7	31.8	35.2	4	32.3	1.4	0.6	30	33.8	5
Total Organic Carbon	-	mg/L	0.43	0.22	0.11	<0.5	0.7	4	0.37	0.19	0.09	<0.5	0.62	3	0.39	0.16	0.08	<0.5	0.54	4
Total Suspended Solids	-	mg/L	4	3	1	<2	9	5	3	2	1	<2	4	4	3	2	1	<2	5	5
Major Ions																				
Bicarbonate (HCO3)	-	mg/L	137	1	0.2	136	137	5	136	1	1	134	137	4	135	3	1	131	138	5
Carbonate (CO3)	-	mg/L	<2	-	-	<2	<2	5	<2	-	-	<2	<2	4	<2	-	-	<2	<2	5
Dissolved Calcium (Ca)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Chloride (Cl)	-	mg/L	19760	1088	486	18900	21000	5	19925	1087	544	19000	21100	4	19820	1171	524	18900	21200	5
Dissolved Fluoride F	1.5[A]	mg/L	**<25**	**-**	**-**	**<10**	**<25**	5	**<25**	**-**	**-**	**<10**	**<25**	4	**<25**	**-**	**-**	**<10**	**<25**	5
Hydroxide (OH-)	-	mg/L	<2	-	-	<2	<2	5	<2	-	-	<2	<2	4	<2	-	-	<2	<2	5
Dissolved Magnesium (Mg)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Potassium (K)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Sodium (Na)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Sulphate (SO4)	-	mg/L	2428	207	93	2060	2550	5	2410	221	110	2080	2540	4	2442	203	91	2090	2570	5
Dissolved Sulphur (S)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Calcium (Ca)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Magnesium (Mg)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Potassium (K)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Sodium (Na)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Sulphur (S)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nutrients																				
Ammonia (as N)	7.9 - 50[B]	mg/L	0.04	0.01	0.01	0.02	0.05	5	0.04	0.01	0.01	0.03	0.06	4	0.04	0.01	0.01	0.03	0.06	5
Total Kjeldahl Nitrogen N	-	mg/L	0.2	0.1	0.1	<0.2	0.4	5	0.3	0.2	0.1	<0.2	0.5	4	0.3	0.4	0.2	<0.2	1	5
Nitrate (as N)	-	mg/L	0.343	0.037	0.017	0.303	0.396	5	0.340	0.027	0.014	0.302	0.364	4	0.349	0.030	0.013	0.306	0.388	5
Nitrite (as N)	-	mg/L	0.004	0.000	0.000	0.004	0.005	5	0.004	0.001	0.000	0.003	0.004	4	0.004	0.000	0.000	0.004	0.004	5
Nitrate and Nitrite N	-	mg/L	0.347	0.037	0.017	0.307	0.4	5	0.344	0.027	0.014	0.306	0.368	4	0.353	0.030	0.013	0.31	0.392	5
Total Nitrogen (Calc as N)	-	mg/L	0.6	0.1	0.1	0.434	0.8	5	0.6	0.1	0.1	0.445	0.806	4	0.7	0.4	0.2	0.464	1.31	5
Ortho Phosphorus P	-	mg/L as P	0.066	0.004	0.002	0.06	0.069	5	0.065	0.005	0.002	0.059	0.069	4	0.067	0.003	0.001	0.062	0.07	5
Total Phosphorus P	-	mg/L as P	0.076	0.012	0.005	0.069	0.097	5	0.075	0.002	0.001	0.073	0.078	4	0.075	0.004	0.002	0.071	0.079	5
Biological																				
Enterococci	-	Col./100 mL	3	6	3	<1	14	5	5	5	3	<1	10	4	12	18	8	1	44	5
Fecal Coliform	-	Col./100 mL	11	14	6	3	37	5	41	33	16	22	90	4	41	56	25	9	140	5
Total Metals																				

Notes

BC WQGs for PAL (Marine)- British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life (MoE 2006)

Bolded Values	Exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
Bolded Values	Analytical detection limits exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
-	No values available

To calculate the pH summary statistics; pH was first converted to the hydrogen ion concentration, then the statistics were calculated and the summary values were converted back to pH units.

A. Maximum concentration

B. 30 ppt Salinity; 7.8 pH; 0 to 25 °C

Table III-3: Summary Water Quality Statistics for Albert Head Station 3
Calculated for Five Sampling Events Over a 30-day Period, Spring 2009

Parameter	BC WQGs for PAL (Marine)	Units	Albert Head Station 3-Below the Water Surface						Albert Head Station 3-Middle of the Water Column						Albert Head Station 3- Above the Sediment Bottom					
			Mean	St Dev	St Err	Min	Max	n	Mean	St Dev	St Err	Min	Max	n	Mean	St Dev	St Err	Min	Max	n
Conventional																				
Alkalinity (Total)	-	mg/L	110	2	1	108	113	4	110	4	2	104	114	4	108	8	4	97	114	4
Conductivity	-	µS/cm	49950	1411	705	48300	51700	4	48450	1708	854	46300	50100	4	49850	1550	775	48300	52000	4
Hardness (CaCO3)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon	-	mg/L	0.75	0.03	0.02	0.72	0.77	3	0.51	0.23	0.13	<0.5	0.68	3	0.59	0.09	0.05	0.51	0.69	3
pH	7.0 - 8.7	pH Units	7.8	-	-	7.8	7.9	4	7.8	-	-	7.8	7.9	4	7.9	-	-	7.8	7.9	4
Salinity	-	Salinity Units	32.7	1.0	0.5	31.5	34	4	31.6	1.3	0.6	30	32.8	4	32.6	1.1	0.6	31.5	34.2	4
Total Organic Carbon	-	mg/L	<0.5	-	-	<0.5	0.61	3	0.52	0.02	0.01	0.5	0.54	3	0.63	0.02	0.01	0.61	0.65	3
Total Suspended Solids	-	mg/L	2	1	1	<2	4	4	5	3	1	<2	8	4	5	4	2	<2	10	4
Major Ions																				
Bicarbonate (HCO3)	-	mg/L	135	3	1	132	138	4	134	5	2	127	138	4	132	10	5	118	139	4
Carbonate (CO3)	-	mg/L	<2	-	-	<2	<2	4	<2	-	-	<2	<2	4	<2	-	-	<2	<2	4
Dissolved Calcium (Ca)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Chloride (Cl)	-	mg/L	19775	1135	568	18700	20900	4	19925	1130	565	18900	21000	4	19175	1127	563	18200	20800	4
Dissolved Fluoride F	1.5[A]	mg/L	**<25**	**-**	**-**	**<10**	**<25**	4	**<25**	**-**	**-**	**<10**	**<25**	4	**<25**	**-**	**-**	**<10**	**<25**	4
Hydroxide (OH-)	-	mg/L	<2	-	-	<2	<2	4	<2	-	-	<2	<2	4	<2	-	-	<2	<2	4
Dissolved Magnesium (Mg)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Potassium (K)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Sodium (Na)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Sulphate (SO4)	-	mg/L	2388	223	111	2060	2550	4	2400	226	113	2070	2560	4	2378	246	123	2040	2570	4
Dissolved Sulphur (S)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Calcium (Ca)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Magnesium (Mg)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Potassium (K)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Sodium (Na)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Sulphur (S)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nutrients																				
Ammonia (as N)	7.9 - 50[B]	mg/L	0.04	0.01	0.004	0.03	0.05	4	0.04	0.01	0.004	0.03	0.05	4	0.05	0.02	0.01	0.03	0.08	4
Total Kjeldahl Nitrogen N	-	mg/L	0.2	0.1	0.1	<0.2	0.3	4	<0.2	-	-	<0.2	0.2	4	0.2	0.1	0.05	<0.2	0.3	4
Nitrate (as N)	-	mg/L	0.364	0.065	0.032	0.296	0.45	4	0.341	0.023	0.012	0.308	0.362	4	0.333	0.027	0.013	0.295	0.356	4
Nitrite (as N)	-	mg/L	0.004	0.001	0.000	0.004	0.005	4	0.005	0.001	0.000	0.004	0.005	4	0.004	0.001	0.000	0.003	0.005	4
Nitrate and Nitrite N	-	mg/L	0.368	0.065	0.033	0.3	0.455	4	0.346	0.023	0.011	0.313	0.366	4	0.338	0.026	0.013	0.3	0.36	4
Total Nitrogen (Calc as N)	-	mg/L	0.5	0.1	0.04	0.4	0.6	4	0.5	0.1	0.03	0.4	0.5	4	0.5	0.1	0.1	0.4	0.7	4
Ortho Phosphorus P	-	mg/L as P	0.066	0.004	0.002	0.061	0.069	4	0.067	0.005	0.003	0.061	0.074	4	0.066	0.004	0.002	0.061	0.069	4
Total Phosphorus P	-	mg/L as P	0.075	0.003	0.002	0.071	0.079	4	0.072	0.005	0.002	0.068	0.079	4	0.074	0.004	0.002	0.069	0.078	4
Biological																				
Enterococci	-	Col./100 mL	2	3	2	<1	7	4	3	2	1	1	6	4	10	10	5	4	24	4
Fecal Coliform	-	Col./100 mL	8	7	3	<1	15	4	19	6	3	11	26	4	42	46	23	15	110	4
Total Metals																				

Notes

BC WQGs for PAL (Marine)- British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life (MoE 2006)

Bolded Values	Exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
Bolded Values	Analytical detection limits exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
-	No values available

To calculate the pH summary statistics; pH was first converted to the hydrogen ion concentration, then the statistics were calculated and the summary values were converted back to pH units.

A. Maximum concentration
B. 30 ppt Salinity; 7.8 pH; 0 to 25 °C

Appendix III-4: Summary water Quality Statistics for Finnerty Cove Station 1
Calculated for Five Ssampling Events Over a 30-day Period, Spring 2009

Parameter	BC WQGs for PAL (Marine)	Units	Finnerty Cove Station 1-Below the Water Surface						Finnerty Cove Station 1-Middle of the Water Column					
			Mean	St Dev	St Err	Min	Max	n	Mean	St Dev	St Err	Min	Max	n
Conventional														
Alkalinity (Total)	-	mg/L	109	1	1	107	110	5	110	1	1	108	112	5
Conductivity	-	µS/cm	49620	1580	707	47900	51400	5	49000	1807	808	47400	51800	5
Hardness (CaCO3)	-	mg/L	6632	600	269	5920	7370	5	6844	432	193	6140	7220	5
Dissolved Organic Carbon	-	mg/L	0.68	0.19	0.10	0.51	0.95	4	0.54	0.22	0.11	<0.5	0.71	4
pH	7.0 - 8.7	pH Units	7.9	-	-	7.8	8	5	7.9	-	-	7.9	7.9	5
Salinity	-	Salinity Units	32.5	1.2	0.5	31.2	33.8	5	32.0	1.4	0.6	30.8	34.1	5
Total Organic Carbon	-	mg/L	0.64	0.27	0.13	<0.5	0.82	4	0.42	0.21	0.10	<0.5	0.66	4
Total Suspended Solids	-	mg/L	6	3	1	4	11	5	8	5	2	4	17	5
Major Ions														
Bicarbonate (HCO3)	-	mg/L	133	1	1	131	134	5	134	2	1	132	137	5
Carbonate (CO3)	-	mg/L	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5
Dissolved Calcium (Ca)	-	mg/L	449	31	14	408	485	5	456	19	9	425	471	5
Dissolved Chloride (Cl)	-	mg/L	18720	968	433	17700	20300	5	18860	1124	503	17700	20700	5
Dissolved Fluoride F	1.5[A]	mg/L	**<25**	-	-	**<10**	**<25**	5	**<25**	-	-	**<10**	**<25**	5
Hydroxide (OH-)	-	mg/L	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5
Dissolved Magnesium (Mg)	-	mg/L	1340	127	57	1190	1500	5	1386	97	43	1230	1470	5
Dissolved Potassium (K)	-	mg/L	401	35	16	364	439	5	407	27	12	361	428	5
Dissolved Sodium (Na)	-	mg/L	10536	807	361	9680	11600	5	10652	823	368	9660	11600	5
Dissolved Sulphate (SO4)	-	mg/L	2386	226	101	2090	2700	5	2410	246	110	2060	2740	5
Dissolved Sulphur (S)	-	mg/L	1051	78	35	954	1140	5	1074	50	22	990	1110	5
Total Calcium (Ca)	-	mg/L	453	28	13	425	495	5	459	19	9	437	486	5
Total Magnesium (Mg)	-	mg/L	1368	91	41	1250	1470	5	1372	91	41	1230	1460	5
Total Potassium (K)	-	mg/L	409	30	14	373	451	5	414	27	12	371	445	5
Total Sodium (Na)	-	mg/L	10846	833	372	9530	11700	5	10142	353	158	9510	10300	5
Total Sulphur (S)	-	mg/L	1084	65	29	1020	1170	5	1102	50	22	1020	1150	5
Nutrients														
Ammonia (as N)	7.9 - 50[B]	mg/L	0.04	0.02	0.01	0.01	0.06	5	0.04	0.01	0.01	0.03	0.06	5
Total Kjeldahl Nitrogen N	-	mg/L	0.2	0.1	0.1	0.1	0.4	5	0.2	0.1	0.0	0.1	0.3	5
Nitrate (as N)	-	mg/L	0.260	0.022	0.010	0.247	0.3	5	0.283	0.028	0.013	0.244	0.314	5
Nitrite (as N)	-	mg/L	0.005	0.001	0.000	0.004	0.006	5	0.005	0.001	0.000	0.004	0.006	5
Nitrate and Nitrite N	-	mg/L	0.265	0.022	0.010	0.253	0.304	5	0.288	0.027	0.012	0.25	0.318	5
Total Nitrogen (Calc as N)	-	mg/L	0.5	0.1	0.1	0.4	0.7	5	0.5	0.1	0.1	0.4	0.6	5
Ortho Phosphorus P	-	mg/L as P	0.059	0.004	0.002	0.053	0.063	5	0.062	0.004	0.002	0.055	0.067	5
Total Phosphorus P	-	mg/L as P	0.067	0.004	0.002	0.062	0.072	5	0.070	0.003	0.001	0.067	0.074	5
Biological														
Enterococci	-	Col./100 mL	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Fecal Coliform	-	Col./100 mL	<1	-	-	<1	<1	5	1	1	0.4	<1	2	5
Total Metals														
Total Aluminum (Al)	-	µg/L	38	24	11	20	74	5	22	4	2	17	29	5
Total Antimony (Sb)	-	µg/L	<0.5	-	-	<0.5	<0.5	5	<0.5	-	-	<0.5	<0.5	5
Total Arsenic (As)	12.5[A (interim)]	µg/L	1.9	0.3	0.2	1.3	2.2	5	2.0	0.4	0.2	1.7	2.7	5
Total Barium (Ba)	1000[C]/500[D]/200[E]	µg/L	9	0.4	0.2	8	9	5	9	0.4	0.2	8	9	5
Total Beryllium (Be)	1500[C]/100[D]	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Total Bismuth (Bi)	-	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Total Boron (B)	1200	µg/L	**3912**	276	124	**3530**	**4190**	5	**3888**	171	77	**3720**	**4160**	5
Total Cadmium (Cd)	0.12[A]	µg/L	0.07	0.01	0.00	0.06	0.08	5	0.07	0.01	0.01	0.06	0.09	5
Total Chromium (Cr)	1.5 Cr(VI)/56 Cr(III)	µg/L	<0.5	-	-	<0.5	<0.5	5	<0.5	-	-	<0.5	<0.5	5
Total Cobalt (Co)	-	µg/L	<0.05	-	-	<0.05	<0.05	5	<0.05	-	-	<0.05	<0.05	5
Total Copper (Cu)	3[A]/2[F]	µg/L	0.31	0.07	0.03	0.22	0.39	5	0.35	0.12	0.05	0.24	0.5	5
Total Iron (Fe)	-	µg/L	17	7	3	10	26	5	20	9	4	13	31	5
Total Lead (Pb)	140[A]/2[F]	µg/L	0.05	0.03	0.01	<0.05	0.08	5	<0.05	-	-	<0.05	0.08	5
Total Lithium (Li)	-	µg/L	178	9	4	170	189	5	179	7	3	169	186	5
Total Manganese (Mn)	100[G]	µg/L	1.9	0.3	0.1	1.5	2.2	5	1.8	0.4	0.2	1.3	2.3	5
Total Mercury (Hg)	2[A]/0.02[F]	µg/L	< 0.02	-	-	< 0.02	< 0.02	5	< 0.02	-	-	< 0.02	< 0.02	5
Total Molybdenum (Mo)	-	µg/L	10	1	0	9	10	5	10	1	0	9	12	5
Total Nickel (Ni)	75[I]/8.3[J]	µg/L	0.41	0.03	0.01	0.37	0.46	5	0.42	0.05	0.02	0.35	0.49	5
Total Selenium (Se)	2[E]	µg/L	<0.5	-	-	<0.5	<0.5	5	1.4	2.5	1.1	<0.5	5.8	5
Total Silicon (Si)	-	µg/L	1478	146	65	1260	1670	5	1518	149	67	1310	1690	5
Total Silver (Ag)	3[A]/1.5[F]	µg/L	<0.05	-	-	<0.05	<0.05	5	0.13	0.23	0.11	<0.05	0.55	5
Total Strontium (Sr)	-	µg/L	6998	471	211	6570	7730	5	7224	467	209	6740	7760	5
Total Thallium (Tl)	-	µg/L	<0.1	-	-	<0.1	<0.1	5	0.2	0.3	0.1	<0.1	0.7	5
Total Tin (Sn)	-	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Total Titanium (Ti)	-	µg/L	<10	-	-	<10	<10	5	<10	-	-	<10	<10	5
Total Uranium (U)	500[C]/100[D]	µg/L	2.36	0.21	0.09	2.15	2.65	5	2.41	0.16	0.07	2.27	2.62	5
Total Vanadium (V)	50[J]	µg/L	<10	-	-	<10	<10	5	<10	-	-	<10	<10	5
Total Zinc (Zn)	10	µg/L	0.7	0.6	0.3	<0.5	1.7	5	2.1	2.4	1.1	0.6	6.4	5
Dissolved Metals														
Dissolved Aluminum (Al)	-	µg/L	<10	-	-	<10	<10	5	<10	-	-	<10	<10	5
Dissolved Antimony (Sb)	-	µg/L	<0.5	0.3	0.2	<0.5	1	5	<0.5	0.2	0.1	<0.5	0.8	5
Dissolved Arsenic (As)	-	µg/L	1.9	0.2	0.1	1.6	2.1	5	1.8	0.1	0.0	1.7	1.9	5
Dissolved Barium (Ba)	-	µg/L	9	0.4	0.2	8	9	5	8	0.4	0.2	8	9	5
Dissolved Beryllium (Be)	-	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Dissolved Bismuth (Bi)	-	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Dissolved Boron (B)	-	µg/L	3766	350	157	3340	4210	5	3924	275	123	3700	4240	5
Dissolved Cadmium (Cd)	-	µg/L	0.07	0.01	0.00	0.06	0.08	5	0.07	0.01	0.00	0.06	0.08	5
Dissolved Chromium (Cr)	-	µg/L	<0.5	-	-	<0.5	<0.5	5	<0.5	-	-	<0.5	<0.5	5
Dissolved Cobalt (Co)	-	µg/L	<0.05	-	-	<0.05	<0.05	5	<0.05	-	-	<0.05	<0.05	5
Dissolved Copper (Cu)	-	µg/L	0.31	0.08	0.04	0.22	0.42	5	0.30	0.09	0.04	0.16	0.41	5
Dissolved Iron (Fe)	-	µg/L	2	1	0.3	1	3	5	3	2	1	1	5	5
Dissolved Lead (Pb)	-	µg/L	<0.05	-	-	<0.05	<0.05	5	<0.05	-	-	<0.05	0.08	5
Dissolved Lithium (Li)	-	µg/L	172	13	6	159	187	5	177	9	4	164	188	5
Dissolved Manganese (Mn)	-	µg/L	1.3	0.3	0.1	0.9	1.6	5	1.2	0.3	0.1	0.8	1.6	5
Dissolved Molybdenum (Mo)	-	µg/L	10	1	0.3	9	11	5	10	0	0	10	10	5
Dissolved Nickel (Ni)	-	µg/L	0.43	0.08	0.04	0.34	0.55	5	0.38	0.03	0.01	0.35	0.42	5
Dissolved Selenium (Se)	-	µg/L	<0.5	-	-	<0.5	<0.5	5	<0.5	-	-	<0.5	<0.5	5
Dissolved Silicon (Si)	-	µg/L	1404	130	58	1180	1510	5	1384	200	90	1160	1650	5
Dissolved Silver (Ag)	-	µg/L	<0.05	-	-	<0.05	<0.05	5	<0.05	-	-	<0.05	<0.05	5
Dissolved Strontium (Sr)	-	µg/L	6958	510	228	6420	7560	5	7024	283	127	6580	7340	5
Dissolved Thallium (Tl)	-	µg/L	<0.1	-	-	<0.1	<0.1	5	<0.1	-	-	<0.1	<0.1	5
Dissolved Tin (Sn)	-	µg/L	<1	-	-	<1	<1	5	<1	-	-	<1	<1	5
Dissolved Titanium (Ti)	-	µg/L	<10	-	-	<10	<10	5	<10	-	-	<10	<10	5
Dissolved Uranium (U)	-	µg/L	2.49	0.41	0.18	2.02	3.1	5	2.51	0.28	0.12	2.28	2.99	5
Dissolved Vanadium (V)	-	µg/L	<10	-	-	<10	<10	5	<10	-	-	<10	<10	5
Dissolved Zinc (Zn)	-	µg/L	1.5	1.2	0.6	0.5	3.6	5	1.4	0.7	0.3	0.7	2.3	5

Notes

BC WQGs for PAL (Marine)- British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life (MoE 2006)

Bolded Values	Exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
Bolded Values	Analytical detection limits exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
-	No values available

To calculate the pH summary statistics; pH was first converted to the hydrogen ion concentration, then the statistics were calculated and the summary values were converted back to pH units.

A. Maximum concentration
B. 30 ppt Salinity; 7.8 pH; 0 to 25 °C
C. Hazard
D. Minimal risk
E. Adverse effects on bivalve
F. 30-day average
G. Protect consumers of shellfish
H. 4-h average
I. 1-h average
J. Trigger value for 99% level of protection

Appendix III-4: Summary water Quality Statistics for Finnerty Cove Station 1
Calculated for Five Ssampling Events Over a 30-day Period, Spring 2009

Parameter	BC WQGs for PAL (Marine)	Units	Finnerty Cove Station 1- Above the Sediment Bottom					
			Mean	St Dev	St Err	Min	Max	n
Conventional								
Alkalinity (Total)	-	mg/L	109	1	1	108	111	5
Conductivity	-	µS/cm	49180	1824	816	47700	52200	5
Hardness (CaCO3)	-	mg/L	6772	418	187	6090	7160	5
Dissolved Organic Carbon	-	mg/L	0.48	0.27	0.13	<0.5	0.74	4
pH	7.0 - 8.7	pH Units	7.9	-	-	7.8	7.9	5
Salinity	-	Salinity Units	32.1	1.3	0.6	31.1	34.3	5
Total Organic Carbon	-	mg/L	0.42	0.20	0.10	<0.5	0.64	4
Total Suspended Solids	-	mg/L	7	5	2	3	14	5
Major Ions								
Bicarbonate (HCO3)	-	mg/L	133	1	1	132	135	5
Carbonate (CO3)	-	mg/L	<2	-	-	<2	<2	5
Dissolved Calcium (Ca)	-	mg/L	451	20	9	422	470	5
Dissolved Chloride (Cl)	-	mg/L	18940	1146	512	18000	20900	5
Dissolved Fluoride F	1.5[A]	mg/L	**<25**	-	-	**<10**	**<25**	5
Hydroxide (OH-)	-	mg/L	<2	-	-	<2	<2	5
Dissolved Magnesium (Mg)	-	mg/L	1372	95	43	1220	1460	5
Dissolved Potassium (K)	-	mg/L	403	26	12	358	422	5
Dissolved Sodium (Na)	-	mg/L	10576	814	364	9580	11600	5
Dissolved Sulphate (SO4)	-	mg/L	2430	314	141	2040	2910	5
Dissolved Sulphur (S)	-	mg/L	1062	62	28	958	1110	5
Total Calcium (Ca)	-	mg/L	466	29	13	438	510	5
Total Magnesium (Mg)	-	mg/L	1396	90	40	1240	1460	5
Total Potassium (K)	-	mg/L	421	32	14	374	460	5
Total Sodium (Na)	-	mg/L	10212	328	147	9660	10500	5
Total Sulphur (S)	-	mg/L	1122	63	28	1040	1210	5
Nutrients								
Ammonia (as N)	7.9 - 50[B]	mg/L	0.05	0.01	0.00	0.04	0.06	5
Total Kjeldahl Nitrogen N	-	mg/L	0.2	0.2	0.1	0.1	0.4	5
Nitrate (as N)	-	mg/L	0.333	0.043	0.019	0.29	0.392	5
Nitrite (as N)	-	mg/L	0.005	0.001	0.000	0.004	0.006	5
Nitrate and Nitrite N	-	mg/L	0.337	0.043	0.019	0.296	0.397	5
Total Nitrogen (Calc as N)	-	mg/L	0.6	0.2	0.1	0.4	0.8	5
Ortho Phosphorus P	-	mg/L as P	0.064	0.002	0.001	0.061	0.067	5
Total Phosphorus P	-	mg/L as P	0.074	0.007	0.003	0.068	0.084	5
Biological								
Enterococci	-	Col./100 mL	<1	-	-	<1	<1	5
Fecal Coliform	-	Col./100 mL	2	2	1	<1	5	5
Total Metals								
Total Aluminum (Al)	-	µg/L	21	5	2	17	28	5
Total Antimony (Sb)	-	µg/L	<0.5	-	-	<0.5	<0.5	5
Total Arsenic (As)	12.5[A (interim)]	µg/L	1.9	0.3	0.1	1.6	2.4	5
Total Barium (Ba)	1000[C]/500[D]/200[E]	µg/L	9	0.4	0.2	8	9	5
Total Beryllium (Be)	1500[C]/100[D]	µg/L	<1	-	-	<1	<1	5
Total Bismuth (Bi)	-	µg/L	<1	-	-	<1	<1	5
Total Boron (B)	1200	µg/L	**3910**	146	65	**3770**	**4120**	5
Total Cadmium (Cd)	0.12[A]	µg/L	0.07	0.01	0.00	0.06	0.08	5
Total Chromium (Cr)	1.5 Cr(VI)/56 Cr(III)	µg/L	<0.5	-	-	<0.5	<0.5	5
Total Cobalt (Co)	-	µg/L	<0.05	-	-	<0.05	<0.05	5
Total Copper (Cu)	3[A]/2[F]	µg/L	0.34	0.07	0.03	0.26	0.41	5
Total Iron (Fe)	-	µg/L	21	10	4	12	33	5
Total Lead (Pb)	140[A]/2[F]	µg/L	0.05	0.03	0.01	<0.05	0.09	5
Total Lithium (Li)	-	µg/L	177	4	2	170	180	5
Total Manganese (Mn)	100[G]	µg/L	1.9	0.3	0.1	1.6	2.3	5
Total Mercury (Hg)	2[A]/0.02[F]	µg/L	< 0.02	-	-	< 0.02	< 0.02	5
Total Molybdenum (Mo)	-	µg/L	10	1	0	9	12	5
Total Nickel (Ni)	75[I]/8.3[J]	µg/L	0.40	0.04	0.02	0.34	0.43	5
Total Selenium (Se)	2[E]	µg/L	0.8	1.3	0.6	<0.5	3.1	5
Total Silicon (Si)	-	µg/L	1548	125	56	1360	1650	5
Total Silver (Ag)	3[A]/1.5[F]	µg/L	0.06	0.07	0.03	<0.05	0.19	5
Total Strontium (Sr)	-	µg/L	7200	557	249	6700	7990	5
Total Thallium (Tl)	-	µg/L	0.1	0.1	0.1	<0.1	0.3	5
Total Tin (Sn)	-	µg/L	<1	-	-	<1	<1	5
Total Titanium (Ti)	-	µg/L	<10	-	-	<10	<10	5
Total Uranium (U)	500[C]/100[D]	µg/L	2.49	0.23	0.10	2.19	2.72	5
Total Vanadium (V)	50[J]	µg/L	<10	-	-	<10	<10	5
Total Zinc (Zn)	10	µg/L	1.2	0.5	0.2	0.5	1.8	5
Dissolved Metals								
Dissolved Aluminum (Al)	-	µg/L	<10	-	-	<10	18	5
Dissolved Antimony (Sb)	-	µg/L	<0.5	0.4	0.2	<0.5	1.1	5
Dissolved Arsenic (As)	-	µg/L	1.8	0.2	0.1	1.5	2.1	5
Dissolved Barium (Ba)	-	µg/L	9	1	0.2	8	9	5
Dissolved Beryllium (Be)	-	µg/L	<1	-	-	<1	<1	5
Dissolved Bismuth (Bi)	-	µg/L	<1	-	-	<1	<1	5
Dissolved Boron (B)	-	µg/L	3868	242	108	3640	4180	5
Dissolved Cadmium (Cd)	-	µg/L	0.07	0.01	0.00	0.06	0.08	5
Dissolved Chromium (Cr)	-	µg/L	<0.5	-	-	<0.5	<0.5	5
Dissolved Cobalt (Co)	-	µg/L	<0.05	-	-	<0.05	<0.05	5
Dissolved Copper (Cu)	-	µg/L	0.34	0.05	0.02	0.28	0.41	5
Dissolved Iron (Fe)	-	µg/L	3	1	1	2	5	5
Dissolved Lead (Pb)	-	µg/L	<0.05	-	-	<0.05	0.07	5
Dissolved Lithium (Li)	-	µg/L	175	9	4	161	185	5
Dissolved Manganese (Mn)	-	µg/L	1.3	0.2	0.1	1	1.4	5
Dissolved Molybdenum (Mo)	-	µg/L	10	0.4	0.2	9	10	5
Dissolved Nickel (Ni)	-	µg/L	0.40	0.07	0.03	0.33	0.51	5
Dissolved Selenium (Se)	-	µg/L	<0.5	-	-	<0.5	<0.5	5
Dissolved Silicon (Si)	-	µg/L	1428	195	87	1180	1640	5
Dissolved Silver (Ag)	-	µg/L	<0.05	-	-	<0.05	<0.05	5
Dissolved Strontium (Sr)	-	µg/L	6952	363	162	6580	7380	5
Dissolved Thallium (Tl)	-	µg/L	<0.1	-	-	<0.1	<0.1	5
Dissolved Tin (Sn)	-	µg/L	<1	-	-	<1	<1	5
Dissolved Titanium (Ti)	-	µg/L	<10	-	-	<10	<10	5
Dissolved Uranium (U)	-	µg/L	2.53	0.38	0.17	2.27	3.2	5
Dissolved Vanadium (V)	-	µg/L	<10	-	-	<10	<10	5
Dissolved Zinc (Zn)	-	µg/L	2.4	2.6	1.1	0.6	6.9	5

Notes

BC WQGs for PAL (Marine)- British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life (MoE 2006)

Bolded Values	Exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
Bolded Values	Analytical detection limits exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
-	No values available

To calculate the pH summary statistics; pH was first converted to the hydrogen ion concentration, then the statistics were calculated and the summary values were converted back to pH units.

A. Maximum concentration
B. 30 ppt Salinity; 7.8 pH; 0 to 25 °C
C. Hazard
D. Minimal risk
E. Adverse effects on bivalve
F. 30-day average
G. Protect consumers of shellfish
H. 4-h average
I. 1-h average
J. Trigger value for 99% level of protection

Appendix III-5: Summary Water Quality Statistics for Finnerty Cove Station 2
Calculated for Five Sampling Events Over a 30-day Period, Spring 2009

Parameter	BC WQGs for PAL (Marine)	Units	Finnerty Cove Station 2-Below the Water Surface						Finnerty Cove Station 2-Middle of the Water Column						Finnerty Cove Station 2- Above the Sediment Bottom					
			Mean	St Dev	St Err	Min	Max	n	Mean	St Dev	St Err	Min	Max	n	Mean	St Dev	St Err	Min	Max	n
Conventional																				
Alkalinity (Total)	-	mg/L	110	2	1	108	112	5	111	1	0	110	112	5	108	5	2	99	111	5
Conductivity	-	µS/cm	49200	2478	1108	47000	53400	5	49640	2710	1212	47500	54300	5	49580	1760	880	48200	52500	5
Hardness (CaCO3)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon	-	mg/L	0.64	0.27	0.13	0.25	0.85	4	0.55	0.31	0.16	0.25	0.89	4	0.60	0.21	0.12	0.305	0.79	4
pH	7.0 - 8.7	pH Units	7.9	-	-	7.8	7.9	5	7.9	-	-	7.9	7.9	5	7.9	-	-	7.8	7.9	5
Salinity	-	Salinity Units	32.2	1.8	0.8	30.6	35.2	5	32.5	2.0	0.9	30.9	35.9	5	32.4	1.3	0.7	31.4	34.6	5
Total Organic Carbon	-	mg/L	0.79	0.24	0.12	0.57	1.08	4	0.56	0.22	0.11	0.25	0.75	4	0.42	0.20	0.12	0.25	0.61	4
Total Suspended Solids	-	mg/L	5	2	1	2	8	5	5	1	1	4	7	5	5	4	2	<2	9	5
Major Ions																				
Bicarbonate (HCO3)	-	mg/L	134	2	1	132	137	5	135	1	0	134	136	5	131	6	3	121	135	5
Carbonate (CO3)	-	mg/L	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5
Dissolved Calcium (Ca)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Chloride (Cl)	-	mg/L	18840	971	434	18000	20500	5	18880	1087	486	18000	20700	5	19080	1099	549	17900	20800	5
Dissolved Fluoride F	1.5[A]	mg/L	**<25**	**-**	**-**	**<10**	**<25**	5	**<25**	**-**	**-**	**<10**	**<25**	5	**<25**	**-**	**-**	**<10**	**<25**	5
Hydroxide (OH-)	-	mg/L	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5
Dissolved Magnesium (Mg)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Potassium (K)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Sodium (Na)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Sulphate (SO4)	-	mg/L	2418	237	106	2110	2760	5	2416	274	123	2060	2810	5	2468	230	115	2220	2820	5
Dissolved Sulphur (S)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Calcium (Ca)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Magnesium (Mg)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Potassium (K)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Sodium (Na)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Sulphur (S)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nutrients																				
Ammonia (as N)	7.9 - 50[B]	mg/L	0.03	0.01	0.01	0.02	0.05	5	0.04	0.01	0.01	0.02	0.06	5	0.04	0.01	0.01	0.03	0.06	5
Total Kjeldahl Nitrogen N	-	mg/L	0.2	0.1	0.0	<0.2	0.3	5	0.1	0.1	0.0	<0.2	0.3	5	0.3	0.3	0.2	<0.2	0.8	5
Nitrate (as N)	-	mg/L	0.272	0.035	0.016	0.233	0.32	5	0.282	0.025	0.011	0.253	0.321	5	0.314	0.028	0.014	0.283	0.341	5
Nitrite (as N)	-	mg/L	0.005	0.001	0.000	0.004	0.006	5	0.004	0.001	0.000	0.004	0.006	5	0.005	0.001	0.000	0.004	0.006	5
Nitrate and Nitrite N	-	mg/L	0.277	0.035	0.015	0.238	0.323	5	0.287	0.025	0.011	0.258	0.325	5	0.319	0.028	0.014	0.287	0.346	5
Total Nitrogen (Calc as N)	-	mg/L	0.4	0.1	0.1	0.338	0.623	5	0.4	0.1	0.0	0.358	0.625	5	0.6	0.3	0.2	0.391	1.146	5
Ortho Phosphorus P	-	mg/L as P	0.059	0.006	0.003	0.049	0.067	5	0.063	0.004	0.002	0.057	0.066	5	0.065	0.002	0.001	0.061	0.067	5
Total Phosphorus P	-	mg/L as P	0.069	0.006	0.003	0.061	0.079	5	0.071	0.005	0.002	0.066	0.078	5	0.075	0.010	0.005	0.067	0.093	5
Biological																				
Enterococci	-	Col./100 mL	<1	-	-	<1	<1	5	<1	-	-	<1	2	5	<1	-	-	<1	1	5
Fecal Coliform	-	Col./100 mL	<1	-	-	<1	1	5	<1	-	-	<1	2	5	2.0	1.8	0.9	<1	5	5
Total Metals																				

Notes

BC WQGs for PAL (Marine)- British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life (MoE 2006)

Bolded Values	Exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
Bolded Values	Analytical detection limits exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life
-	No values available

To calculate the pH summary statistics; pH was first converted to the hydrogen ion concentration, then the statistics were calculated and the summary values were converted back to pH units.

A. Maximum concentration
B. 30 ppt Salinity; 7.8 pH; 0 to 25 °C

Appendix III-6: Summary Water Quality Statistics for Finnerty Cove Station 3
Calculated for Five Sampling Events Over a 30-day Period, Spring 2009

Parameter	BC WQGs for PAL (Marine)	Units	Finnerty Cove Station 3-Below the Water Surface						Finnerty Cove Station 3-Middle of the Water Column						Finnerty Cove Station 3- Above the Sediment Bottom					
			Mean	St Dev	St Err	Min	Max	n	Mean	St Dev	St Err	Min	Max	n	Mean	St Dev	St Err	Min	Max	n
Conventional																				
Alkalinity (Total)	-	mg/L	110	1	0.3	109	111	5	108	2	1	105	110	5	111	1	0.4	110	112	5
Conductivity	-	µS/cm	48860	1708	764	47100	51600	5	49060	1924	861	46800	52100	5	49060	2104	941	46300	52200	5
Hardness (CaCO3)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon	-	mg/L	<0.66	-	-	<0.66	0.76	4	3.43	0.29	0.15	<0.5	0.84	4	0.57	0.37	0.19	<0.5	0.98	4
pH	7.0 - 8.7	pH Units	7.9	-	-	7.9	8	5	7.9	-	-	7.8	7.9	5	7.9	-	-	7.8	7.9	5
Salinity	-	Salinity Units	31.9	1.2	0.6	30.6	33.9	5	32.1	1.4	0.6	30.4	34.3	5	32.0	1.5	0.7	30	34.3	5
Total Organic Carbon	-	mg/L	0.56	0.21	0.10	<0.5	0.7	4	0.59	0.23	0.12	<0.5	0.77	4	0.59	0.25	0.11	<0.5	0.84	4
Total Suspended Solids	-	mg/L	5	2	1	3	8	5	5	3	1	2	10	5	7	5	2	4	15	5
Major Ions																				
Bicarbonate (HCO3)	-	mg/L	134	1	0.3	133	135	5	132	3	1	128	135	5	135	1	1	134	137	5
Carbonate (CO3)	-	mg/L	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5
Dissolved Calcium (Ca)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Chloride (Cl)	-	mg/L	18840	921	412	17900	20300	5	19140	1130	506	18200	21000	5	19180	1199	536	18000	21100	5
Dissolved Fluoride F	1.5[A]	mg/L	**<25**	**-**	**-**	**<10**	**<25**	5	**<25**	**-**	**-**	**<10**	**<25**	5	**<25**	**-**	**-**	**<10**	**<25**	5
Hydroxide (OH-)	-	mg/L	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5	<2	-	-	<2	<2	5
Dissolved Magnesium (Mg)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Potassium (K)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Sodium (Na)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Sulphate (SO4)	-	mg/L	2418	253	113	2110	2800	5	2454	270	121	2130	2870	5	2458	272	122	2140	2870	5
Dissolved Sulphur (S)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Calcium (Ca)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Magnesium (Mg)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Potassium (K)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Sodium (Na)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Sulphur (S)	-	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nutrients																				
Ammonia (as N)	7.9 - 50[B]	mg/L	0.04	0.02	0.01	0.02	0.06	5	0.04	0.01	0.004	0.03	0.05	5	0.04	0.01	0.005	0.03	0.06	5
Total Kjeldahl Nitrogen N	-	mg/L	0.3	0.2	0.1	<0.2	0.5	5	0.3	0.2	0.1	<0.2	0.6	5	0.2	0.1	0.1	<0.2	0.4	5
Nitrate (as N)	-	mg/L	0.277	0.042	0.019	0.231	0.325	5	0.299	0.028	0.013	0.263	0.328	5	0.303	0.033	0.015	0.268	0.337	5
Nitrite (as N)	-	mg/L	0.005	0.001	0.000	0.004	0.006	5	0.004	0.001	0.000	0.004	0.005	5	0.005	0.000	0.000	0.004	0.005	5
Nitrate and Nitrite N	-	mg/L	0.282	0.042	0.019	0.236	0.331	5	0.303	0.028	0.013	0.267	0.332	5	0.308	0.032	0.015	0.273	0.342	5
Total Nitrogen (Calc as N)	-	mg/L	0.6	0.2	0.1	0.3	0.8	5	0.6	0.2	0.1	0.4	0.9	5	0.5	0.1	0.1	0.4	0.7	5
Ortho Phosphorus P	-	mg/L as P	0.061	0.004	0.002	0.055	0.067	5	0.064	0.003	0.001	0.06	0.067	5	0.065	0.003	0.001	0.062	0.068	5
Total Phosphorus P	-	mg/L as P	0.069	0.005	0.002	0.063	0.076	5	0.072	0.003	0.002	0.067	0.076	5	0.076	0.007	0.003	0.071	0.087	5
Biological																				
Enterococci	-	Col./100 mL	<1	-	-	<1	<1	5	<1	-	-	<1	1	5	<1	-	-	<1	2	5
Fecal Coliform	-	Col./100 mL	<1	-	-	<1	<1	5	2.3	2	1	<1	4	5	4.3	3	1	<1	7	5
Total Metals																				

Notes

BC WQGs for PAL (Marine)- British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life (MoE 2006)

Bolded Values Exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life

Bolded Values Analytical detection limits exceed the British Columbia Water Quality Guidelines for the Protection of Marine Aquatic Life

\- No values available

To calculate the pH summary statistics; pH was first converted to the hydrogen ion concentration, then the statistics were calculated and the summary values were converted back to pH units.

A. Maximum concentration
B. 30 ppt Salinity; 7.8 pH; 0 to 25 °C

Table III-7: Raw Water Quality Data for Albert Head Station 1 Over Five Sampling Events in a 30 Day Period, Spring 2009

Parameter	Units	AH-S1-T 1337-01 1334-01 05/04/2009	AH-S1-M 1337-02 1334-02 05/04/2009	AH-S1-B 1337-03 1334-03 05/04/2009	AH-S1-T 1339-01 1340-01 05/11/2009	AH-S1-M 1339-02 1340-02 05/11/2009	AH-S1-B 1339-03 1340-03 05/11/2009
Conventional							
Alkalinity (Total)	mg/L	110	112	112	110	112	112
Conductivity	µS/cm	48700	48000	53800	49800	49200	49600
Hardness (CaCO3)	mg/L	6420	6390	6410	7320	7430	7480
Dissolved Organic Carbon	mg/L	< 30	< 30	< 30	<0.50	<0.50	0.56
pH	pH Units	7.8	7.8	7.7	7.8	7.8	7.8
Salinity	Salinity	31.8	31.3	35.5	32.6	32.2	32.4
Total Organic Carbon	mg/L	< 30	< 30	< 30	0.54	<0.50	<0.50
Total Suspended Solids	mg/L	3	2	< 2	3	3	2
Major Ions							
Bicarbonate (HCO3)	mg/L	135	137	136	134	137	137
Carbonate (CO3)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Calcium (Ca)	mg/L	460	450	450	487	498	500
Dissolved Chloride (Cl)	mg/L	18800	18900	19000	18900	18900	21100
Dissolved Fluoride F	mg/L	< 10	< 10	< 10	< 10	< 10	< 25
Hydroxide (OH-)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Magnesium (Mg)	mg/L	1280	1280	1280	1480	1500	1510
Dissolved Potassium (K)	mg/L	392	382	383	441	447	453
Dissolved Sodium (Na)	mg/L	10100	10000	10200	10600	10800	10600
Dissolved Sulphate (SO4)	mg/L	2690	2470	2480	2490	2490	2580
Dissolved Sulphur (S)	mg/L	1040	1030	1040	1160	1170	1170
Total Calcium (Ca)	mg/L	449	451	443	491	491	487
Total Magnesium (Mg)	mg/L	1230	1260	1250	1540	1540	1530
Total Potassium (K)	mg/L	381	380	375	446	452	450
Total Sodium (Na)	mg/L	10300	8860	9960	10500	10700	10600
Total Sulphur (S)	mg/L	1070	1050	1040	1200	1180	1200
Nutrients							
Ammonia (as N)	mg/L	0.04	0.03	0.03	0.06	0.05	0.05
Total Kjeldahl Nitrogen N	mg/L	0.3	0.2	< 0.2	0.5	< 0.2	0.2
Nitrate (as N)	mg/L	0.339	0.35	0.399	0.417	0.373	0.425
Nitrite (as N)	mg/L	0.003	0.004	0.004	0.004	0.004	0.004
Nitrate and Nitrite N	mg/L	0.342	0.354	0.403	0.421	0.377	0.429
Total Nitrogen (Calc as N)	mg/L	0.642	0.554	0.503	0.921	0.477	0.629
Ortho Phosphorus P	mg/L as P	0.069	0.068	0.068	0.069	0.071	0.069
Total Phosphorus P	mg/L as P	0.084	0.079	0.076	0.074	0.075	0.075
Biological							
Enterococci	Col./100 mL	7	13	11	4	11	5
Fecal Coliform	Col./100 mL	26	36	37	26	33	30
Total Metals							
Total Aluminum (Al)	µg/L	18	21	19	15	31	20
Total Antimony (Sb)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Arsenic (As)	µg/L	2.1	1.8	1.7	2.1	2	2.1
Total Barium (Ba)	µg/L	8	8	8	8	8	8
Total Beryllium (Be)	µg/L	<1	<1	<1	<1	<1	<1
Total Bismuth (Bi)	µg/L	<1	<1	<1	<1	<1	<1
Total Boron (B)	µg/L	3740	3820	3860	4370	4360	4280
Total Cadmium (Cd)	µg/L	0.09	0.08	0.07	0.07	0.09	0.08
Total Chromium (Cr)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Cobalt (Co)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Copper (Cu)	µg/L	0.27	0.24	0.21	0.24	0.25	0.26
Total Iron (Fe)	µg/L	18	17	18	12	15	15
Total Lead (Pb)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Lithium (Li)	µg/L	169	170	172	191	193	188
Total Manganese (Mn)	µg/L	1.5	1.3	1.2	1.2	1.3	1.2
Total Mercury (Hg)	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total Molybdenum (Mo)	µg/L	10	10	10	10	11	10
Total Nickel (Ni)	µg/L	0.83	0.34	0.64	0.4	0.36	0.76
Total Selenium (Se)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Silicon (Si)	µg/L	1430	1420	1450	1720	1770	1760
Total Silver (Ag)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Strontium (Sr)	µg/L	6940	6920	6920	7570	7570	7440
Total Thallium (Tl)	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Tin (Sn)	µg/L	<1	<1	<1	<1	<1	<1
Total Titanium (Ti)	µg/L	<10	<10	<10	<10	<10	<10
Total Uranium (U)	µg/L	2.64	2.64	2.82	2.56	2.67	2.45
Total Vanadium (V)	µg/L	<10	<10	<10	<10	<10	<10
Total Zinc (Zn)	µg/L	1.9	1.2	1.3	0.7	0.5	0.5
Dissolved Metals							
Dissolved Aluminum (Al)	µg/L	<10	<10	<10	<10	<10	<10
Dissolved Antimony (Sb)	µg/L	1	1.2	1	<0.5	<0.5	<0.5
Dissolved Arsenic (As)	µg/L	1.8	2	1.6	2.1	2.2	2.2
Dissolved Barium (Ba)	µg/L	8	8	8	8	8	8
Dissolved Beryllium (Be)	µg/L	<1	<1	<1	<1	<1	<1
Dissolved Bismuth (Bi)	µg/L	<1	<1	<1	<1	<1	<1
Dissolved Boron (B)	µg/L	3670	3750	3820	4230	4230	4190
Dissolved Cadmium (Cd)	µg/L	0.09	0.08	0.08	0.07	0.07	0.07
Dissolved Chromium (Cr)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Cobalt (Co)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Copper (Cu)	µg/L	0.24	0.25	0.23	0.23	0.3	0.24
Dissolved Iron (Fe)	µg/L	1	1	2	2	2	4
Dissolved Lead (Pb)	µg/L	<0.05	<0.05	0.06	<0.05	<0.05	<0.05
Dissolved Lithium (Li)	µg/L	167	170	170	190	188	187
Dissolved Manganese (Mn)	µg/L	0.8	0.8	0.8	0.7	0.7	0.7
Dissolved Molybdenum (Mo)	µg/L	9	10	10	11	11	11
Dissolved Nickel (Ni)	µg/L	0.58	0.38	0.48	0.41	0.35	0.41
Dissolved Selenium (Se)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Silicon (Si)	µg/L	1270	1380	1350	1630	1700	1660
Dissolved Silver (Ag)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Strontium (Sr)	µg/L	6720	6840	6900	7720	7720	7820
Dissolved Thallium (Tl)	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Tin (Sn)	µg/L	<1	<1	<1	<1	<1	<1
Dissolved Titanium (Ti)	µg/L	<10	<10	<10	<10	<10	<10
Dissolved Uranium (U)	µg/L	2.88	3	2.75	2.61	2.61	2.71
Dissolved Vanadium (V)	µg/L	<10	<10	<10	<10	<10	<10
Dissolved Zinc (Zn)	µg/L	2	1.8	1.9	0.6	0.7	1

Table III-7: Raw Water Quality Data for Albert Head Station 1 Over Five Sampling Events in a 30 Day Period, Spring 2009

AH-S1-T	AH-S1-M	AH-S1-B	AH-S1-T	AH-S1-M	AH-S1-B	AH-S1-T	AH-S1-M	AH-S1-B
1359-01	1359-04	1359-07	1368-01	1368-02	1368-03	1371-01	1371-02	1371-03
1360-01	1360-04	1360-07	1369-01	1369-02	1369-03	1375-01	1375-02	1375-03
05/12/2009	05/12/2009	05/12/2009	05/14/2009	05/14/2009	05/14/2009	05/21/2009	05/21/2009	05/21/2009
110	110	113	109	112	111	110	110	111
52600	51900	52700	48300	48200	48300	52300	49800	49900
7420	7470	7450	7040	7500	7610	6800	7060	7020
<0.50	<0.53	0.67	0.6	0.56	<0.50	0.73	0.76	0.57
7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
34.6	34.1	34.7	31.5	31.4	31.5	34.4	32.6	32.7
<0.50	0.53	<0.50	0.84	<0.50	0.57	0.82	0.65	0.67
< 2	< 2	2	3	2	4	< 2	< 2	< 2
135	134	138	133	136	136	134	134	135
< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
487	492	493	457	490	493	464	479	477
18800	19000	19100	20800	21200	21000	19300	19400	19300
< 10	< 10	< 10	< 25	< 25	< 25	< 25	< 25	< 25
< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1510	1520	1510	1430	1530	1550	1370	1420	1420
443	447	446	412	444	442	419	431	430
12400	10700	10700	10000	10300	10400	11400	11800	11800
2500	2530	2540	2530	2570	2550	2120	2120	2120
1140	1170	1160	1080	1150	1180	1090	1130	1130
494	486	483	479	496	503	471	453	468
1490	1520	1530	1450	1510	1510	1470	1420	1470
452	443	448	440	455	456	432	420	430
10800	10500	10800	10100	11600	10800	10500	10600	10500
1160	1180	1170	1130	1180	1190	1130	1110	1130
0.05	0.04	0.05	0.02	0.03	0.03	0.04	0.05	0.05
< 0.2	0.3	0.3	< 0.2	0.3	0.3	< 0.2	< 0.2	< 0.2
0.362	0.34	0.335	0.296	0.301	0.299	0.317	0.357	0.353
0.004	0.004	0.004	0.004	0.005	0.004	0.004	0.005	0.004
0.366	0.344	0.339	0.3	0.306	0.303	0.321	0.362	0.357
0.466	0.644	0.639	0.4	0.606	0.603	0.421	0.462	0.457
0.069	0.069	0.069	0.065	0.067	0.065	0.057	0.062	0.062
0.073	0.074	0.078	0.072	0.072	0.074	0.068	0.072	0.074
2	5	2	4	18	2	1	92	83
4	18	25	4	85	15	7	470	280
18	20	21	32	21	36	14	20	21
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2	1.9	2	2.1	2.3	2.1	1.9	1.8	1.9
8	8	8	9	9	9	9	8	9
<1	<1	<1	<1	<1	<1	<1	<1	<1
<1	<1	<1	<1	<1	<1	<1	<1	<1
4250	4300	4420	4220	4260	4300	3910	3890	3940
0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.07	0.09
<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
0.26	0.27	0.3	0.6	0.26	0.3	0.46	0.54	0.51
15	20	20	15	9	16	8	17	16
0.15	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
188	192	195	191	191	194	186	185	186
1.3	1.4	1.3	1.5	1.3	1.4	1.5	1.5	1.5
< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	< 0.02	< 0.02	< 0.02
10	10	10	10	10	10	10	10	10
0.37	0.38	0.35	0.81	0.38	0.37	0.42	0.41	0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1760	1670	1730	1620	1720	1780	1630	1710	1690
<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
7780	7440	7490	7670	7800	7950	7150	7020	7120
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<1	<1	<1	<1	<1	<1	<1	<1	<1
<10	<10	<10	<10	<10	<10	<10	<10	<10
2.45	2.44	2.58	2.51	2.36	2.51	2.33	2.29	2.31
<10	<10	<10	<10	<10	<10	<10	<10	<10
0.8	1.2	<0.5	8	5.4	9.4	0.8	0.7	0.6
<10	21	<10	31	<10	<10	<10	<10	<10
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2.2	2.1	2.1	2	1.9	2.1	1.8	2	2
8	8	8	8	8	8	8	8	8
<1	<1	<1	<1	<1	<1	<1	<1	<1
<1	<1	<1	<1	<1	<1	<1	<1	<1
4280	4310	4200	4130	4340	4420	3700	3850	3790
0.07	0.07	0.08	0.08	0.08	0.09	0.07	0.07	0.07
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
0.19	0.22	0.32	0.51	0.22	0.29	0.55	0.61	0.53
3	3	3	2	1	2	2	2	2
0.09	<0.05	0.06	<0.05	0.12	0.05	<0.05	<0.05	<0.05
189	193	186	181	191	195	177	185	181
0.8	0.7	0.7	1	0.8	0.8	0.9	0.9	0.8
10	11	10	9	10	10	10	10	10
0.38	0.37	0.37	0.58	0.57	0.42	0.5	0.62	0.44
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1610	1570	1640	1510	1540	1600	1690	1670	1720
<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
7580	7860	7690	7020	7560	7730	7020	7380	7230
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<1	<1	<1	<1	<1	<1	<1	<1	<1
<10	<10	<10	<10	<10	<10	<10	<10	<10
2.49	2.65	2.65	2.37	2.49	2.57	2.29	2.4	2.36
<10	<10	<10	<10	<10	<10	<10	<10	<10
1.9	0.7	1.4	10.8	5.4	11	1.2	1.3	0.9

Table III-8: Raw Water Quality Data for Albert Head Station 2
Over Five Sampling Events in a 30-day Period, Spring 2009

Parameter	Units	AH-S2-T	AH-S2-M	AH-S2-B	AH-S2-T	AH-S2-M	AH-S2-B	AH-S2-T	AH-S2-B	AH-S2-T	AH-S2-M	AH-S2-B	AH-S2-T	AH-S2-M	AH-S2-B
		1337-04	1337-05	1337-06	1339-04	1339-05	1339-06	1366-01	1366-03	1368-04	1368-05	1368-06	1371-04	1371-05	1371-06
		05/04/2009	05/04/2009	05/04/2009	05/11/2009	05/11/2009	05/11/2009	05/12/2009	05/12/2009	05/14/2009	05/14/2009	05/14/2009	05/21/2009	05/21/2009	05/21/2009
Conventional															
Alkalinity (Total)	mg/L	112	112	112	112	112	113	112	107	113	110	112	112	110	109
Conductivity	µS/cm	50700	53300	46200	49400	49500	49600	51500	51400	48900	48700	49000	50400	50200	50500
Dissolved Organic Carbon	mg/L	< 30	< 30	< 30	0.65	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.73	0.63	0.59
pH	pH Units	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
Salinity	Salinity	33.2	35.2	30	32.3	32.4	32.4	33.8	33.8	31.9	31.8	32	33	32.9	33.1
Total Organic Carbon	mg/L	< 30	< 30	< 30	0.7	<0.50	<0.50	<0.50	<0.50	<0.50	0.62	0.54	0.5	<0.50	0.53
Total Suspended Solids	mg/L	3	2	3	2	4	5	3	4	9	4	< 2	< 2	< 2	< 2
Major Ions															
Bicarbonate (HCO3)	mg/L	136	136	137	137	137	138	136	131	137	135	137	137	134	133
Carbonate (CO3)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Chloride (Cl)	mg/L	19000	19000	19000	21000	21100	21000	18900	19000	20900	20600	21200	19000	19000	18900
Dissolved Fluoride F	mg/L	< 10	< 10	< 10	< 25	< 25	< 25	< 10	< 10	< 25	< 25	< 25	< 25	< 25	< 25
Hydroxide (OH-)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Sulphate (SO4)	mg/L	2480	2500	2450	2550	2540	2570	2520	2530	2530	2520	2570	2060	2080	2090
Nutrients															
Ammonia (as N)	mg/L	0.04	0.03	0.04	0.05	0.06	0.06	0.05	0.05	0.02	0.04	0.03	0.04	0.04	0.04
Total Kjeldahl Nitrogen N	mg/L	0.3	0.3	0.2	< 0.2	0.3	< 0.2	0.4	0.3	0.2	0.5	1	< 0.2	< 0.2	< 0.2
Nitrate (as N)	mg/L	0.324	0.353	0.343	0.365	0.364	0.388	0.396	0.346	0.303	0.302	0.306	0.329	0.341	0.36
Nitrite (as N)	mg/L	0.004	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.004	0.004
Nitrate and Nitrite N	mg/L	0.327	0.357	0.347	0.369	0.368	0.392	0.4	0.35	0.307	0.306	0.31	0.334	0.345	0.364
Total Nitrogen (Calc as N)	mg/L	0.627	0.657	0.547	0.469	0.668	0.492	0.8	0.65	0.507	0.806	1.31	0.434	0.445	0.464
Ortho Phosphorus P	mg/L as P	0.068	0.069	0.068	0.069	0.068	0.07	0.068	0.069	0.065	0.065	0.066	0.06	0.059	0.062
Total Phosphorus P	mg/L as P	0.097	0.078	0.079	0.073	0.075	0.078	0.072	0.075	0.071	0.074	0.072	0.069	0.073	0.071
Biological															
Enterococci	Col./100 mL	14	9	10	< 1	< 1	1	1	4	1	10	3	< 1	1	44
Fecal Coliform	Col./100 mL	37	26	15	4	26	15	5	9	8	90	28	3	22	140

Table III-9: Raw Water Quality Data for Albert Head Station 3
Over Five Sampling Events in a 30-day Period, Spring 2009

Parameter	Units	AH-S3-T	AH-S3-M	AH-S3-B	AH-S3-T	AH-S3-M	AH-S3-B	AH-S3-T	AH-S3-M	AH-S3-B	AH-S3-T	AH-S3-M	AH-S3-B
		1337-07	1337-08	1337-09	1339-07	1339-08	1339-09	1368-07	1368-08	1368-09	1371-07	1371-08	1371-09
		05/04/2009	05/04/2009	05/04/2009	05/11/2009	05/11/2009	05/11/2009	05/14/2009	05/14/2009	05/14/2009	05/21/2009	05/21/2009	05/21/2009
Conventional													
Alkalinity (Total)	mg/L	110	114	114	113	111	112	110	112	110	108	104	97
Conductivity	µS/cm	51700	46300	52000	49600	49500	49500	48300	47900	48300	50200	50100	49600
Dissolved Organic Carbon	mg/L	< 30	< 30	< 30	0.77	0.68	0.69	0.77	<0.50	0.57	0.72	0.61	0.51
pH	pH Units	7.8	7.9	7.8	7.8	7.8	7.8	7.9	7.8	7.9	7.8	7.8	7.9
Salinity	Salinity	34	30	34.2	32.4	32.4	32.4	31.5	31.2	31.5	32.9	32.8	32.4
Total Organic Carbon	mg/L	< 30	< 30	< 30	0.61	0.53	0.65	<0.50	0.5	0.63	0.57	0.54	0.61
Total Suspended Solids	mg/L	4	5	10	2	6	5	2	8	4	< 2	< 2	< 2
Major Ions													
Bicarbonate (HCO3)	mg/L	134	138	139	138	135	137	134	136	134	132	127	118
Carbonate (CO3)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Chloride (Cl)	mg/L	18700	19000	18200	20600	20800	18900	20900	21000	20800	18900	18900	18800
Dissolved Fluoride F	mg/L	< 10	< 10	< 10	< 25	< 25	< 10	< 25	< 25	< 25	< 25	< 25	< 25
Hydroxide (OH-)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Sulphate (SO4)	mg/L	2440	2440	2350	2500	2530	2570	2550	2560	2550	2060	2070	2040
Nutrients													
Ammonia (as N)	mg/L	0.03	0.03	0.03	0.05	0.04	0.08	0.04	0.05	0.06	0.04	0.04	0.04
Total Kjeldahl Nitrogen N	mg/L	< 0.2	< 0.2	0.2	< 0.2	< 0.2	0.3	0.3	< 0.2	< 0.2	< 0.2	0.2	< 0.2
Nitrate (as N)	mg/L	0.342	0.35	0.345	0.368	0.362	0.356	0.296	0.308	0.295	0.45	0.344	0.337
Nitrite (as N)	mg/L	0.004	0.004	0.003	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005
Nitrate and Nitrite N	mg/L	0.346	0.354	0.348	0.372	0.366	0.36	0.3	0.313	0.3	0.455	0.349	0.342
Total Nitrogen (Calc as N)	mg/L	0.446	0.454	0.548	0.472	0.466	0.66	0.6	0.413	0.4	0.555	0.549	0.442
Ortho Phosphorus P	mg/L as P	0.069	0.068	0.069	0.069	0.074	0.069	0.065	0.065	0.065	0.061	0.061	0.061
Total Phosphorus P	mg/L as P	0.079	0.079	0.078	0.076	0.072	0.075	0.075	0.068	0.069	0.071	0.069	0.073
Biological													
Enterococci	Col./100 mL	7	4	5	< 1	2	24	< 1	6	5	1	1	4
Fecal Coliform	Col./100 mL	15	18	22	< 1	26	110	5	22	19	13	11	15

Table III-10: Raw Water Quality Data for Finnerty Cove Station 1 Over Five Sampling Events in a 30-day Period, Spring 2009

Parameter	Units	FC-S1-T	FC-S1-M	FC-S1-B	FC-S1-T	FC-S1-M	FC-S1-B	FC-S1-B
		1336-01	1336-02	1336-03	1341-01	1341-02	1341-03	1361-01
		1331-01	1331-02	1331-03	1344-01	1344-02	1344-03	1367-03
		05/05/2009	05/05/2009	05/05/2009	05/11/2009	05/11/2009	05/11/2009	05/13/2009
Conventional								
Alkalinity (Total)	mg/L	110	108	108	110	110	110	111
Conductivity	µS/cm	51400	51800	52200	47900	47400	47800	48900
Hardness (CaCO3)	mg/L	6160	6140	6090	7040	7160	7010	7160
Dissolved Organic Carbon	mg/L	< 30	< 30	< 30	0.51	<0.50	<0.50	0.68
pH	pH Units	7.8	7.9	7.8	7.9	7.9	7.9	7.8
Salinity	Salinity	33.8	34.1	34.3	31.2	30.8	31.1	31.9
Total Organic Carbon	mg/L	< 30	< 30	< 30	<0.50	<0.50	<0.50	0.54
Total Suspended Solids	mg/L	4	5	14	6	6	5	3
Major Ions								
Bicarbonate (HCO3)	mg/L	134	132	132	134	134	134	135
Carbonate (CO3)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Calcium (Ca)	mg/L	429	425	422	473	452	440	468
Dissolved Chloride (Cl)	mg/L	17700	17700	18000	18400	18300	18300	18600
Dissolved Fluoride F	mg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hydroxide (OH-)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Magnesium (Mg)	mg/L	1240	1230	1220	1420	1460	1440	1460
Dissolved Potassium (K)	mg/L	364	361	358	426	412	402	421
Dissolved Sodium (Na)	mg/L	9680	9660	9580	11600	10200	10300	10200
Dissolved Sulphate (SO4)	mg/L	2270	2340	2320	2420	2420	2420	2460
Dissolved Sulphur (S)	mg/L	990	990	958	1110	1070	1050	1100
Total Calcium (Ca)	mg/L	439	437	438	469	471	510	481
Total Magnesium (Mg)	mg/L	1250	1230	1240	1440	1340	1460	1450
Total Potassium (K)	mg/L	373	371	374	425	427	460	439
Total Sodium (Na)	mg/L	9530	9510	9660	11200	10300	10300	10200
Total Sulphur (S)	mg/L	1030	1020	1040	1130	1130	1210	1150
Nutrients								
Ammonia (as N)	mg/L	0.04	0.04	0.04	0.06	0.05	0.05	0.04
Total Kjeldahl Nitrogen N	mg/L	< 0.2	0.3	< 0.2	0.3	< 0.2	< 0.2	0.4
Nitrate (as N)	mg/L	0.251	0.276	0.33	0.3	0.307	0.357	0.392
Nitrite (as N)	mg/L	0.004	0.004	0.004	0.004	0.004	0.004	0.005
Nitrate and Nitrite N	mg/L	0.255	0.28	0.334	0.304	0.311	0.361	0.397
Total Nitrogen (Calc as N)	mg/L	0.355	0.58	0.434	0.604	0.411	0.461	0.797
Ortho Phosphorus P	mg/L as P	0.063	0.063	0.066	0.062	0.061	0.063	0.063
Total Phosphorus P	mg/L as P	0.072	0.074	0.084	0.069	0.069	0.07	0.078
Biological								
Enterococci	Col./100 mL	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Fecal Coliform	Col./100 mL	< 1	< 1	< 1	< 1	< 1	< 1	5
Total Metals								
Total Aluminum (Al)	µg/L	20	17	19	74	29	28	17
Total Antimony (Sb)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Arsenic (As)	µg/L	1.3	1.7	1.6	2	2.7	2.4	2
Total Barium (Ba)	µg/L	9	9	9	9	9	9	9
Total Beryllium (Be)	µg/L	<1	<1	<1	<1	<1	<1	<1
Total Bismuth (Bi)	µg/L	<1	<1	<1	<1	<1	<1	<1
Total Boron (B)	µg/L	3880	3870	3840	4190	3720	4000	4120
Total Cadmium (Cd)	µg/L	0.08	0.07	0.08	0.06	0.06	0.07	0.06
Total Chromium (Cr)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Cobalt (Co)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Copper (Cu)	µg/L	0.28	0.3	0.27	0.27	0.26	0.26	0.37
Total Iron (Fe)	µg/L	26	31	33	23	17	16	12
Total Lead (Pb)	µg/L	0.08	<0.05	0.09	<0.05	<0.05	<0.05	<0.05
Total Lithium (Li)	µg/L	170	169	170	186	175	180	180
Total Manganese (Mn)	µg/L	2.2	2.1	2	1.9	1.6	1.9	1.8
Total Mercury (Hg)	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total Molybdenum (Mo)	µg/L	10	10	10	10	12	12	10
Total Nickel (Ni)	µg/L	0.46	0.49	0.43	0.37	0.43	0.42	0.34
Total Selenium (Se)	µg/L	<0.5	<0.5	<0.5	<0.5	5.8	3.1	<0.5
Total Silicon (Si)	µg/L	1260	1310	1360	1490	1500	1610	1480
Total Silver (Ag)	µg/L	<0.05	<0.05	<0.05	<0.05	0.55	0.19	<0.05
Total Strontium (Sr)	µg/L	6820	6740	6740	7190	7760	7990	7550
Total Thallium (Tl)	µg/L	<0.1	<0.1	<0.1	<0.1	0.7	0.3	<0.1
Total Tin (Sn)	µg/L	<1	<1	<1	<1	<1	<1	<1
Total Titanium (Ti)	µg/L	<10	<10	<10	<10	<10	<10	<10
Total Uranium (U)	µg/L	2.65	2.56	2.72	2.43	2.62	2.67	2.3
Total Vanadium (V)	µg/L	<10	<10	<10	<10	<10	<10	<10
Total Zinc (Zn)	µg/L	0.9	0.8	1	<0.5	1.1	0.5	1
Dissolved Metals								
Dissolved Aluminum (Al)	µg/L	<10	<10	<10	<10	<10	18	<10
Dissolved Antimony (Sb)	µg/L	1	0.8	1.1	<0.5	<0.5	<0.5	<0.5
Dissolved Arsenic (As)	µg/L	1.8	1.7	1.5	2.1	1.9	1.8	2.1
Dissolved Barium (Ba)	µg/L	9	8	8	9	8	8	9
Dissolved Beryllium (Be)	µg/L	<1	<1	<1	<1	<1	<1	<1
Dissolved Bismuth (Bi)	µg/L	<1	<1	<1	<1	<1	<1	<1
Dissolved Boron (B)	µg/L	3590	3730	3640	4030	4240	4070	4180
Dissolved Cadmium (Cd)	µg/L	0.08	0.08	0.07	0.07	0.07	0.06	0.07
Dissolved Chromium (Cr)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Cobalt (Co)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Copper (Cu)	µg/L	0.28	0.31	0.28	0.22	0.31	0.32	0.32
Dissolved Iron (Fe)	µg/L	2	3	2	2	2	2	5
Dissolved Lead (Pb)	µg/L	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Lithium (Li)	µg/L	161	164	161	183	181	174	185
Dissolved Manganese (Mn)	µg/L	1.6	1.6	1.4	1.1	1.2	1.3	1.4
Dissolved Molybdenum (Mo)	µg/L	10	10	10	10	10	9	10
Dissolved Nickel (Ni)	µg/L	0.55	0.4	0.42	0.34	0.38	0.37	0.33
Dissolved Selenium (Se)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Silicon (Si)	µg/L	1180	1210	1320	1440	1160	1180	1390
Dissolved Silver (Ag)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Strontium (Sr)	µg/L	6510	6580	6580	7560	6980	6610	7380
Dissolved Thallium (Tl)	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Tin (Sn)	µg/L	<1	<1	<1	<1	<1	<1	<1
Dissolved Titanium (Ti)	µg/L	<10	<10	<10	<10	<10	<10	<10
Dissolved Uranium (U)	µg/L	3.1	2.99	3.2	2.5	2.39	2.38	2.46
Dissolved Vanadium (V)	µg/L	<10	<10	<10	<10	<10	<10	<10
Dissolved Zinc (Zn)	µg/L	1.1	2.3	0.9	0.5	1.1	0.6	1.8

Table III-10: Raw Water Quality Data for Finnerty Cove Station 1 Over Five Sampling Events in a 30-day Period, Spring 2009

Parameter	Units	FC-S1-M 1361-02 1367-02 05/13/2009	FC-S1-T 1361-03 1367-01 05/13/2009	FC-S1-T 1370-01 1373-01 05/15/2009	FC-S1-M 1370-02 1373-02 05/15/2009	FC-S1-B 1370-03 1373-03 05/15/2009	FC-S1-T 21385-01 21386-01 05/20/2009	FC-S1-M 21385-04 21386-04 05/20/2009	FC-S1-B 21385-07 21386-07 05/20/2009
Conventional									
Alkalinity (Total)	mg/L	109	109	107	112	109	109	110	108
Conductivity	µS/cm	49300	48700	48900	47400	47700	51200	49100	49300
Hardness (CaCO3)	mg/L	7220	7370	5920	6920	6910	6670	6780	6690
Dissolved Organic Carbon	mg/L	0.71	0.95	0.57	0.5	<0.50	0.68	0.71	0.74
pH	pH Units	7.9	7.9	7.8	7.9	7.9	8	7.9	7.9
Salinity	Salinity	32.2	31.8	31.9	30.8	31.1	33.6	32.1	32.2
Total Organic Carbon	mg/L	0.53	0.67	0.82	<0.50	<0.50	0.82	0.66	0.64
Total Suspended Solids	mg/L	4	5	6	7	3	11	17	10
Major Ions									
Bicarbonate (HCO3)	mg/L	133	133	131	137	133	133	134	132
Carbonate (CO3)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Calcium (Ca)	mg/L	471	485	408	471	470	452	461	454
Dissolved Chloride (Cl)	mg/L	18800	18400	20300	20700	20900	18800	18800	18900
Dissolved Fluoride F	mg/L	< 10	< 10	< 25	< 25	< 25	< 25	< 25	< 25
Hydroxide (OH-)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Magnesium (Mg)	mg/L	1470	1500	1190	1400	1390	1350	1370	1350
Dissolved Potassium (K)	mg/L	428	439	365	421	422	410	415	411
Dissolved Sodium (Na)	mg/L	10400	10400	9900	11600	11600	11100	11400	11200
Dissolved Sulphate (SO4)	mg/L	2490	2450	2700	2740	2910	2090	2060	2040
Dissolved Sulphur (S)	mg/L	1110	1140	954	1110	1110	1060	1090	1090
Total Calcium (Ca)	mg/L	486	495	425	450	453	438	453	448
Total Magnesium (Mg)	mg/L	1460	1470	1310	1400	1420	1370	1430	1410
Total Potassium (K)	mg/L	445	451	390	413	417	405	415	414
Total Sodium (Na)	mg/L	10300	10600	11200	10300	10400	11700	10300	10500
Total Sulphur (S)	mg/L	1150	1170	1020	1100	1110	1070	1110	1100
Nutrients									
Ammonia (as N)	mg/L	0.04	0.04	0.03	0.06	0.06	0.01	0.03	0.05
Total Kjeldahl Nitrogen N	mg/L	0.3	0.4	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.4
Nitrate (as N)	mg/L	0.314	0.251	0.252	0.274	0.294	0.247	0.244	0.29
Nitrite (as N)	mg/L	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006
Nitrate and Nitrite N	mg/L	0.318	0.255	0.257	0.279	0.299	0.253	0.25	0.296
Total Nitrogen (Calc as N)	mg/L	0.618	0.655	0.457	0.379	0.399	0.353	0.35	0.696
Ortho Phosphorus P	mg/L as P	0.063	0.057	0.059	0.067	0.067	0.053	0.055	0.061
Total Phosphorus P	mg/L as P	0.072	0.068	0.062	0.067	0.068	0.066	0.07	0.072
Biological									
Enterococci	Col./100 mL	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Fecal Coliform	Col./100 mL	2	< 1	< 1	2	1	< 1	< 1	1
Total Metals									
Total Aluminum (Al)	µg/L	22	24	21	20	18	49	23	23
Total Antimony (Sb)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Arsenic (As)	µg/L	2.1	2.2	1.9	1.9	1.9	2	1.7	1.8
Total Barium (Ba)	µg/L	8	9	8	9	8	9	9	9
Total Beryllium (Be)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Total Bismuth (Bi)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Total Boron (B)	µg/L	4160	4170	3530	3770	3770	3790	3920	3820
Total Cadmium (Cd)	µg/L	0.07	0.06	0.06	0.06	0.07	0.08	0.09	0.08
Total Chromium (Cr)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Cobalt (Co)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Copper (Cu)	µg/L	0.24	0.22	0.39	0.5	0.41	0.37	0.44	0.39
Total Iron (Fe)	µg/L	13	10	12	13	14	16	28	31
Total Lead (Pb)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.08	0.06
Total Lithium (Li)	µg/L	186	189	170	178	179	177	185	175
Total Manganese (Mn)	µg/L	1.6	1.5	1.9	1.3	1.6	2	2.3	2.3
Total Mercury (Hg)	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total Molybdenum (Mo)	µg/L	10	10	9	9	10	9	10	9
Total Nickel (Ni)	µg/L	0.39	0.4	0.4	0.35	0.41	0.4	0.44	0.42
Total Selenium (Se)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Silicon (Si)	µg/L	1630	1670	1470	1690	1650	1500	1460	1640
Total Silver (Ag)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Strontium (Sr)	µg/L	7690	7730	6570	6950	7020	6680	6980	6700
Total Thallium (Tl)	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Tin (Sn)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Total Titanium (Ti)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Total Uranium (U)	µg/L	2.31	2.42	2.16	2.27	2.55	2.15	2.3	2.19
Total Vanadium (V)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Total Zinc (Zn)	µg/L	0.6	<0.5	1.7	1.6	1.6	0.6	6.4	1.8
Dissolved Metals									
Dissolved Aluminum (Al)	µg/L	<10	<10	<10	<10	<10	<10	<10	13
Dissolved Antimony (Sb)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Arsenic (As)	µg/L	1.9	2.1	1.6	1.7	2	1.8	1.7	1.8
Dissolved Barium (Ba)	µg/L	8	9	8	8	9	9	9	9
Dissolved Beryllium (Be)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Bismuth (Bi)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Boron (B)	µg/L	4210	4210	3340	3700	3760	3660	3740	3690
Dissolved Cadmium (Cd)	µg/L	0.06	0.07	0.06	0.07	0.07	0.08	0.08	0.08
Dissolved Chromium (Cr)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Cobalt (Co)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Copper (Cu)	µg/L	0.16	0.25	0.42	0.41	0.41	0.37	0.3	0.37
Dissolved Iron (Fe)	µg/L	2	1	3	1	2	2	5	3
Dissolved Lead (Pb)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
Dissolved Lithium (Li)	µg/L	188	187	159	176	178	172	176	175
Dissolved Manganese (Mn)	µg/L	0.8	0.9	1.4	1	1	1.4	1.5	1.3
Dissolved Molybdenum (Mo)	µg/L	10	11	9	10	10	10	10	10
Dissolved Nickel (Ni)	µg/L	0.35	0.4	0.47	0.42	0.51	0.37	0.36	0.38
Dissolved Selenium (Se)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Silicon (Si)	µg/L	1470	1470	1420	1650	1610	1510	1430	1640
Dissolved Silver (Ag)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Strontium (Sr)	µg/L	7340	7390	6420	7170	7250	6910	7050	6940
Dissolved Thallium (Tl)	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Tin (Sn)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Titanium (Ti)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Uranium (U)	µg/L	2.45	2.58	2.02	2.43	2.32	2.23	2.28	2.27
Dissolved Vanadium (V)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Zinc (Zn)	µg/L	0.7	0.7	1.7	1.9	2	3.6	0.9	6.9

Table III-11: Raw Water Quality Data for Finnerty Cove Station 2
Over Five Sampling Events in a 30-day Period, Spring 2009

Parameter	Units	FC-S2-T 1336-04 05/05/2009	FC-S2-M 1336-05 05/05/2009	FC-S2-B 1336-06 05/05/2009	FC-S2-T 1341-04 05/11/2009	FC-S2-M 1341-05 05/11/2009	FC-S2-B 1341-06 05/11/2009	FC-S2-T 1361-04 05/13/2009	FC-S2-M 1361-05 05/13/2009	FC-S2-B 1361-06 05/13/2009	FC-S2-T 1370-04 05/15/2009	FC-S2-M 1370-05 05/15/2009	FC-S2-B 1370-06 05/15/2009	FC-S2-T 1372-01 05/20/2009	FC-S2-M 1372-02 05/20/2009	FC-S2-B 1372-03 05/20/2009
Conventional																
Alkalinity (Total)	mg/L	109	112	110	110	110	99	108	110	111	111	112	110	112	110	109
Conductivity	µS/cm	53400	54300	52500	48000	48000	48400	48400	49200	48900	47000	47500	48200	49200	49200	49900
Dissolved Organic Carbon	mg/L	< 30	< 30	< 30	0.68	<0.66	<0.61	0.76	0.74	0.69	<0.50	<0.50	0.62	0.85	0.89	0.79
pH	pH Units	7.8	7.9	7.8	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.8
Salinity	Salinity	35.2	35.9	34.6	31.3	31.3	31.6	31.6	32.2	31.9	30.6	30.9	31.4	32.2	32.1	32.7
Total Organic Carbon	mg/L	< 30	< 30	< 30	0.88	0.66	0.61	0.63	0.59	<0.50	0.57	<0.50	<0.50	1.08	0.75	0.58
Total Suspended Solids	mg/L	5	4	5	4	7	< 2	6	4	< 2	2	5	8	8	6	9
Major Ions																
Bicarbonate (HCO3)	mg/L	133	136	134	134	134	121	132	134	135	135	136	134	137	134	133
Carbonate (CO3)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Chloride (Cl)	mg/L	18000	18000	17900	18400	18100	18600	18500	18700	18700	20500	20700	20800	18800	18900	19400
Dissolved Fluoride F	mg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 25	< 25	< 25	< 25	< 25	< 25
Hydroxide (OH-)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Sulphate (SO4)	mg/L	2320	2310	2310	2430	2400	2480	2470	2500	2510	2760	2810	2820	2110	2060	2220
Nutrients																
Ammonia (as N)	mg/L	0.04	0.04	0.03	0.05	0.06	0.06	0.03	0.04	0.04	0.03	0.05	0.05	0.02	0.02	0.04
Total Kjeldahl Nitrogen N	mg/L	0.3	0.3	0.8	< 0.2	< 0.2	< 0.2	0.2	< 0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Nitrate (as N)	mg/L	0.32	0.321	0.341	0.297	0.285	0.335	0.255	0.283	0.283	0.233	0.253	0.286	0.256	0.268	0.326
Nitrite (as N)	mg/L	0.005	0.004	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.004	0.005	0.006	0.006	0.006
Nitrate and Nitrite N	mg/L	0.323	0.325	0.346	0.301	0.289	0.339	0.259	0.287	0.287	0.238	0.258	0.291	0.262	0.274	0.332
Total Nitrogen (Calc as N)	mg/L	0.623	0.625	1.146	0.401	0.389	0.439	0.459	0.387	0.487	0.338	0.358	0.391	0.362	0.374	0.432
Ortho Phosphorus P	mg/L as P	0.067	0.066	0.067	0.061	0.062	0.066	0.058	0.062	0.061	0.059	0.066	0.067	0.049	0.057	0.065
Total Phosphorus P	mg/L as P	0.079	0.078	0.093	0.069	0.068	0.07	0.07	0.074	0.07	0.061	0.066	0.067	0.067	0.067	0.076
Biological																
Enterococci	Col./100 mL	< 1	< 1	1	< 1	2	< 1	< 1	< 1	1	< 1	< 1	< 1	< 1	< 1	< 1
Fecal Coliform	Col./100 mL	< 1	< 1	2	< 1	< 1	< 1	< 1	< 1	2	1	2	5	< 1	< 1	< 1

Table III-12: Raw Water Quality Data for Finnerty Cove Station 2
Over Five Sampling Events in a 30-day Period, Spring 2009

Parameter	Units	FC-S3-T 1336-07 05/05/2009	FC-S3-M 1336-08 05/05/2009	FC-S3-B 1336-09 05/05/2009	FC-S3-T 1341-07 05/11/2009	FC-S3-M 1341-08 05/11/2009	FC-S3-B 1341-09 05/11/2009	FC-S3-T 1361-07 05/13/2009	FC-S3-M 1361-08 05/13/2009	FC-S3-B 1361-09 05/13/2009	FC-S3-T 1370-07 05/15/2009	FC-S3-M 1370-08 05/15/2009	FC-S3-B 1370-09 05/15/2009	FC-S3-T 1372-04 05/20/2009	FC-S3-M 1372-05 05/20/2009	FC-S3-B 1372-06 05/20/2009
Conventional																
Alkalinity (Total)	mg/L	110	110	110	110	110	110	109	108	111	110	105	112	111	109	110
Conductivity	µS/cm	51600	52100	52200	48000	48400	48600	48400	48900	49200	47100	46800	46300	49200	49100	49000
Dissolved Organic Carbon	mg/L	< 30	< 30	< 30	<0.66	<0.68	<0.50	0.69	0.74	0.78	0.5	<0.50	<0.50	0.76	0.84	0.98
pH	pH Units	7.9	7.8	7.8	7.9	7.9	7.9	8	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Salinity	Salinity	33.9	34.3	34.3	31.3	31.6	31.7	31.6	31.9	32.2	30.6	30.4	30	32.2	32.1	32
Total Organic Carbon	mg/L	< 30	< 30	< 30	0.66	0.68	<0.50	0.7	0.65	0.62	<0.50	<0.50	0.65	0.64	0.77	0.84
Total Suspended Solids	mg/L	3	2	5	3	10	4	3	3	6	8	4	4	7	6	15
Major Ions																
Bicarbonate (HCO3)	mg/L	134	134	134	134	135	135	133	132	135	134	128	137	135	133	134
Carbonate (CO3)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Chloride (Cl)	mg/L	17900	18200	18000	18500	18600	18600	18400	18500	18700	20300	21000	21100	19100	19400	19500
Dissolved Fluoride F	mg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 25	< 25	< 25	< 25	< 25	< 25
Hydroxide (OH-)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Sulphate (SO4)	mg/L	2300	2340	2310	2440	2460	2460	2440	2470	2510	2800	2870	2870	2110	2130	2140
Nutrients																
Ammonia (as N)	mg/L	0.04	0.03	0.04	0.06	0.05	0.06	0.02	0.03	0.04	0.03	0.04	0.04	0.03	0.03	0.03
Total Kjeldahl Nitrogen N	mg/L	0.5	0.6	0.4	< 0.2	< 0.2	< 0.2	0.4	0.2	0.3	< 0.2	< 0.2	< 0.2	0.3	0.3	< 0.2
Nitrate (as N)	mg/L	0.3	0.328	0.332	0.294	0.306	0.337	0.235	0.263	0.271	0.231	0.275	0.268	0.325	0.321	0.309
Nitrite (as N)	mg/L	0.004	0.004	0.004	0.004	0.004	0.005	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.005	0.005
Nitrate and Nitrite N	mg/L	0.304	0.332	0.336	0.298	0.31	0.342	0.239	0.267	0.276	0.236	0.28	0.273	0.331	0.326	0.313
Total Nitrogen (Calc as N)	mg/L	0.804	0.932	0.736	0.398	0.41	0.442	0.639	0.467	0.576	0.336	0.38	0.373	0.631	0.626	0.413
Ortho Phosphorus P	mg/L as P	0.067	0.067	0.068	0.061	0.062	0.067	0.055	0.06	0.063	0.059	0.065	0.067	0.063	0.064	0.062
Total Phosphorus P	mg/L as P	0.076	0.076	0.075	0.066	0.07	0.071	0.068	0.072	0.074	0.063	0.067	0.087	0.072	0.074	0.071
Biological																
Enterococci	Col./100 mL	< 1	< 1	2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1	< 1	< 1	< 1	< 1
Fecal Coliform	Col./100 mL	< 1	4	6	< 1	< 1	< 1	< 1	1	1	< 1	2	7	< 1	4	7

Table III-13: Raw Water Quality Data for Blank and Triplicate QA/QC Samples
Over Five Sampling Events in 30-day Period, Spring 2009

Parameter	Units	Blank	Original	Duplicate	Triplicate	Original	Duplicate	Triplicate	Original	Duplicate	Triplicate
			AH-S1-T	AH-S1-T	AH-S1-T	AH-S1-M	AH-S1-M	AH-S1-M	AH-S1-B	AH-S1-B	AH-S1-B
		1338-01	1359-01	1359-02	1359-03	1359-04	1359-05	1359-06	1359-07	1359-08	1359-09
		1335-01	1360-01	1360-02	1360-03	1360-04	1360-05	1360-06	1360-07	1360-08	1360-09
		05/04/2009	05/12/2009	05/12/2009	05/12/2009	05/12/2009	05/12/2009	05/12/2009	05/12/2009	05/12/2009	05/12/2009
Conventional											
Alkalinity (Total)	mg/L	< 2	110	110	111	110	111	113	113	113	111
Conductivity	µS/cm	44500	52600	51800	51800	51900	51700	52400	52700	51900	51900
Hardness (CaCO3)	mg/L	<0.5	7420	7360	7460	7470	7480	7420	7450	7500	7480
Dissolved Organic Carbon	mg/L	< 30	<0.50	<0.56	<0.57	<0.53	<0.50	0.73	0.67	0.51	<0.50
pH	pH Units	4.6	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
Salinity	Salinity	28.8	34.6	34.1	34.1	34.1	34	34.5	34.7	34.1	34.1
Total Dissolved Solids	mg/L										
Total Organic Carbon	mg/L	< 30	<0.50	0.56	0.57	0.53	<0.50	0.65	<0.50	0.54	0.64
Total Suspended Solids	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	< 2	4
Major Ions											
Bicarbonate (HCO3)	mg/L	< 2	135	134	135	134	135	138	138	138	135
Carbonate (CO3)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Calcium (Ca)	mg/L	<1	487	484	489	492	493	492	493	495	495
Dissolved Chloride (Cl)	mg/L	0.36	18800	18900	18900	19000	18900	18800	19100	19000	19100
Dissolved Fluoride F	mg/L	< 0.05	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hydroxide (OH-)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Magnesium (Mg)	mg/L	<1	1510	1490	1520	1520	1520	1500	1510	1520	1520
Dissolved Potassium (K)	mg/L	<1	443	438	444	447	448	447	446	451	449
Dissolved Sodium (Na)	mg/L	4	12400	10400	10500	10700	10500	10500	10700	10600	10700
Dissolved Sulphate (SO4)	mg/L	0.71	2500	2510	2510	2530	2520	2510	2540	2520	2530
Dissolved Sulphur (S)	mg/L	<20	1140	1160	1160	1170	1160	1160	1160	1180	1170
Total Calcium (Ca)	mg/L	<1	494	508	493	486	490	487	483	491	499
Total Magnesium (Mg)	mg/L	<1	1490	1530	1470	1520	1560	1540	1530	1540	1560
Total Potassium (K)	mg/L	<1	452	464	448	443	454	449	448	450	458
Total Sodium (Na)	mg/L	<1	10800	10200	10600	10500	10300	11000	10800	11300	10600
Total Sulphur (S)	mg/L	<20	1160	1210	1160	1180	1200	1190	1170	1180	1210
Nutrients											
Ammonia (as N)	mg/L	< 0.01	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.05	0.06
Total Kjeldahl Nitrogen N	mg/L	< 0.2	< 0.2	< 0.2	< 0.2	0.3	0.3	< 0.2	0.3	< 0.2	0.3
Nitrate (as N)	mg/L	0.178	0.362	0.342	0.335	0.34	0.334	0.338	0.335	0.345	0.34
Nitrite (as N)	mg/L	< 0.002	0.004	0.004	0.003	0.004	0.004	0.004	0.004	0.004	0.004
Nitrate and Nitrite N	mg/L	0.178	0.366	0.346	0.339	0.344	0.338	0.342	0.339	0.349	0.344
Total Nitrogen (Calc as N)	mg/L	0.278	0.466	0.446	0.439	0.644	0.638	0.442	0.639	0.449	0.644
Ortho Phosphorus P	mg/L as P	0.008	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069
Total Phosphorus P	mg/L as P	0.004	0.073	0.074	0.079	0.074	0.075	0.076	0.078	0.077	0.078
Biological											
Enterococci	Col./100 mL	-	2	< 1	1	5	4	5	2	3	4
Fecal Coliform	Col./100 mL	-	4	5	4	18	14	17	25	20	18
Total Metals											
Total Aluminum (Al)	µg/L	<10	18	19	18	20	21	24	21	20	22
Total Antimony (Sb)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Arsenic (As)	µg/L	<0.5	2	2.2	2	1.9	2	2.1	2	1.9	2.1
Total Barium (Ba)	µg/L	<1	8	8	8	8	8	8	8	8	8
Total Beryllium (Be)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Bismuth (Bi)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Boron (B)	µg/L	<50	4250	4240	4210	4300	4470	4480	4420	4400	4430
Total Cadmium (Cd)	µg/L	<0.01	0.07	0.07	0.06	0.08	0.07	0.08	0.08	0.07	0.08
Total Chromium (Cr)	µg/L	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Cobalt (Co)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Copper (Cu)	µg/L	0.29	0.26	0.26	0.25	0.27	0.29	0.27	0.3	0.61	0.4
Total Iron (Fe)	µg/L	<1	15	15	15	20	19	18	20	21	20
Total Lead (Pb)	µg/L	0.1	0.15	0.06	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05
Total Lithium (Li)	µg/L	<20	188	190	192	192	196	196	195	191	196
Total Manganese (Mn)	µg/L	<0.2	1.3	1.3	1.2	1.4	1.3	1.3	1.3	1.3	1.4
Total Mercury (Hg)	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total Molybdenum (Mo)	µg/L	<1	10	10	10	10	10	10	10	10	10
Total Nickel (Ni)	µg/L	0.18	0.37	0.42	0.34	0.38	0.38	0.38	0.35	0.4	0.38
Total Selenium (Se)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Silicon (Si)	µg/L	<100	1760	1960	1730	1670	1660	1710	1730	1720	1720
Total Silver (Ag)	µg/L	<0.05	<0.05	<0.05	<0.05	0.06	0.05	<0.05	<0.05	<0.05	<0.05
Total Strontium (Sr)	µg/L	<10	7780	7790	7750	7440	7610	7530	7490	7440	7570
Total Thallium (Tl)	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Tin (Sn)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Titanium (Ti)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Uranium (U)	µg/L	<0.05	2.45	2.34	2.3	2.44	2.5	2.59	2.58	2.55	2.44
Total Vanadium (V)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Zinc (Zn)	µg/L	11.8	0.8	0.9	0.5	1.2	0.8	<0.5	<0.5	<0.5	0.6
Dissolved Metals											
Dissolved Aluminum (Al)	µg/L	<10	<10	<10	<10	21	<10	15	<10	<10	<10
Dissolved Antimony (Sb)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Arsenic (As)	µg/L	<0.5	2.2	2.1	2.1	2.1	2.2	2	2.1	2.2	2.1
Dissolved Barium (Ba)	µg/L	<1	8	8	8	8	8	8	8	8	9
Dissolved Beryllium (Be)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Bismuth (Bi)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Boron (B)	µg/L	<50	4280	4280	4280	4310	4340	4320	4200	4310	4310
Dissolved Cadmium (Cd)	µg/L	0.02	0.07	0.08	0.07	0.07	0.06	0.08	0.08	0.08	0.07
Dissolved Chromium (Cr)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Cobalt (Co)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Copper (Cu)	µg/L	0.3	0.19	0.23	0.23	0.22	0.27	0.26	0.32	0.4	0.29
Dissolved Iron (Fe)	µg/L	<1	3	2	2	3	3	2	3	3	2
Dissolved Lead (Pb)	µg/L	0.13	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.06	<0.05
Dissolved Lithium (Li)	µg/L	<20	189	191	189	193	195	194	186	190	196
Dissolved Manganese (Mn)	µg/L	<0.2	0.8	0.8	0.7	0.7	0.8	0.7	0.7	0.8	0.8
Dissolved Molybdenum (Mo)	µg/L	<1	10	10	11	11	11	10	10	11	11
Dissolved Nickel (Ni)	µg/L	0.07	0.38	0.37	0.36	0.37	0.38	0.39	0.37	0.39	0.35
Dissolved Selenium (Se)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Silicon (Si)	µg/L	<100	1610	1590	1670	1570	1610	1650	1640	1660	1610
Dissolved Silver (Ag)	µg/L	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Strontium (Sr)	µg/L	<10	7580	7690	7670	7860	7810	7810	7690	7850	7760
Dissolved Thallium (Tl)	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Tin (Sn)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Titanium (Ti)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Uranium (U)	µg/L	<0.05	2.49	2.52	2.57	2.65	2.64	2.52	2.65	2.71	2.7
Dissolved Vanadium (V)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Zinc (Zn)	µg/L	14.8	1.9	0.8	0.7	0.7	0.8	0.9	1.4	1.8	0.8

Table III-13: Raw Water Quality Data for Blank and Triplicate QA/QC Samples
Over Five Sampling Events in 30-day Period, Spring 2009

Parameter	Units	Blank	Original	Duplicate	Triplicate	Original	Duplicate	Triplicate	Original	Duplicate	Triplicate
			FC-S1-T	FC-S1-T	FC-S1-T	FC-S1-M	FC-S1-M	FC-S1-M	FC-S1-B	FC-S1-B	FC-S1-B
		1368-10	21385-01	21385-02	21385-03	21385-04	21385-05	21385-06	21385-07	21385-08	21385-09
		1369-04	21386-01	21386-02	21386-03	21386-04	21386-05	21386-06	21386-07	21386-08	21386-09
		05/14/2009	05/20/2009	05/20/2009	05/20/2009	05/20/2009	05/20/2009	05/20/2009	05/20/2009	05/20/2009	05/20/2009
Conventional											
Alkalinity (Total)	mg/L	< 2	109	109	110	110	111	110	108	108	106
Conductivity	µS/cm	3.5	51200	49800	47700	49100	48500	48700	49300	48800	49000
Hardness (CaCO3)	mg/L	<0.5	6670	6680	6760	6780	6610	6770	6690	7030	6760
Dissolved Organic Carbon	mg/L	<0.50	0.68	0.6	0.67	0.71	0.76	0.8	0.74	0.95	0.8
pH	pH Units	5.6	8	7.9	8	7.9	7.9	7.9	7.9	7.9	7.9
Salinity	Salinity	< 0.1	33.6	32.6	31.1	32.1	31.6	31.8	32.2	31.9	32
Total Dissolved Solids	mg/L										
Total Organic Carbon	mg/L	<0.50	0.82	0.86	0.9	0.66	0.71	0.68	0.64	0.69	0.94
Total Suspended Solids	mg/L	2	11	11	10	17	22	12	10	6	17
Major Ions											
Bicarbonate (HCO3)	mg/L	< 2	133	133	134	134	135	134	132	132	129
Carbonate (CO3)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Calcium (Ca)	mg/L	<1	452	452	457	461	448	458	454	476	458
Dissolved Chloride (Cl)	mg/L	< 0.2	18800	18800	18800	18800	18900	18800	18900	19000	19000
Dissolved Fluoride F	mg/L	< 0.05	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Hydroxide (OH-)	mg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dissolved Magnesium (Mg)	mg/L	<1	1350	1350	1360	1370	1330	1370	1350	1420	1360
Dissolved Potassium (K)	mg/L	<1	410	409	414	415	406	415	411	429	417
Dissolved Sodium (Na)	mg/L	3	11100	11200	11300	11400	11100	11300	11200	11700	11400
Dissolved Sulphate (SO4)	mg/L	< 0.5	2090	2040	2020	2060	2060	2030	2040	2080	2070
Dissolved Sulphur (S)	mg/L	<20	1060	1060	1070	1090	1060	1090	1090	1130	1070
Total Calcium (Ca)	mg/L	<1	438	442	438	453	455	454	448	453	440
Total Magnesium (Mg)	mg/L	<1	1370	1390	1380	1430	1440	1420	1410	1420	1380
Total Potassium (K)	mg/L	<1	405	410	409	415	421	416	414	417	406
Total Sodium (Na)	mg/L	2	11700	12000	11900	10300	10400	10400	10500	10400	11800
Total Sulphur (S)	mg/L	<20	1070	1090	1060	1110	1110	1100	1100	1100	1070
Nutrients											
Ammonia (as N)	mg/L	< 0.01	0.01	0.01	0.03	0.03	0.03	0.04	0.05	0.04	0.04
Total Kjeldahl Nitrogen N	mg/L	< 0.2	< 0.2	0.3	< 0.2	< 0.2	< 0.2	0.4	0.4	0.5	0.4
Nitrate (as N)	mg/L	0.013	0.247	0.245	0.251	0.244	0.25	0.26	0.29	0.323	0.295
Nitrite (as N)	mg/L	< 0.002	0.006	0.006	0.006	0.006	0.006	0.005	0.006	0.006	0.005
Nitrate and Nitrite N	mg/L	0.013	0.253	0.251	0.257	0.25	0.256	0.265	0.296	0.329	0.3
Total Nitrogen (Calc as N)	mg/L	0.113	0.353	0.551	0.357	0.35	0.356	0.665	0.696	0.829	0.7
Ortho Phosphorus P	mg/L as P	< 0.003	0.053	0.053	0.053	0.055	0.056	0.056	0.061	0.062	0.062
Total Phosphorus P	mg/L as P	< 0.003	0.066	0.066	0.067	0.07	0.069	0.069	0.072	0.074	0.077
Biological											
Enterococci	Col./100 mL	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Fecal Coliform	Col./100 mL	-	< 1	< 1	< 1	< 1	< 1	< 1	1	< 1	2
Total Metals											
Total Aluminum (Al)	µg/L	25	49	17	17	23	24	23	23	25	21
Total Antimony (Sb)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Arsenic (As)	µg/L	<0.5	2	1.7	1.9	1.7	1.9	1.8	1.8	1.8	1.9
Total Barium (Ba)	µg/L	<1	9	9	9	9	9	9	9	9	9
Total Beryllium (Be)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Bismuth (Bi)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Boron (B)	µg/L	<50	3790	3860	3820	3920	3890	3890	3820	3780	3900
Total Cadmium (Cd)	µg/L	<0.01	0.08	0.09	0.08	0.09	0.08	0.09	0.08	0.08	0.08
Total Chromium (Cr)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Cobalt (Co)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Copper (Cu)	µg/L	0.07	0.37	0.41	0.39	0.44	0.4	0.34	0.39	0.33	0.37
Total Iron (Fe)	µg/L	<1	16	19	20	28	30	27	31	28	24
Total Lead (Pb)	µg/L	<0.05	0.07	0.07	0.08	0.08	<0.05	<0.05	0.06	0.06	0.07
Total Lithium (Li)	µg/L	<20	177	181	176	185	179	182	175	176	180
Total Manganese (Mn)	µg/L	<0.2	2	2	2.2	2.3	2.5	2.3	2.3	2.2	2.2
Total Mercury (Hg)	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total Molybdenum (Mo)	µg/L	<1	9	9	10	10	10	10	9	9	9
Total Nickel (Ni)	µg/L	0.06	0.4	0.41	0.4	0.44	0.44	0.42	0.42	0.44	0.42
Total Selenium (Se)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Silicon (Si)	µg/L	<100	1500	1470	1470	1460	1460	1460	1640	1760	1620
Total Silver (Ag)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Strontium (Sr)	µg/L	<10	6680	6780	6730	6980	6950	6880	6700	6680	6790
Total Thallium (Tl)	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Tin (Sn)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Titanium (Ti)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Uranium (U)	µg/L	<0.05	2.15	2.22	2.14	2.3	2.3	2.33	2.19	2.19	2.27
Total Vanadium (V)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Zinc (Zn)	µg/L	2.4	0.6	0.8	1	6.4	0.7	0.6	1.8	1.5	1.6
Dissolved Metals											
Dissolved Aluminum (Al)	µg/L	<10	<10	11	<10	<10	<10	<10	13	<10	12
Dissolved Antimony (Sb)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Arsenic (As)	µg/L	<0.5	1.8	1.7	1.8	1.7	1.6	1.7	1.8	1.9	1.9
Dissolved Barium (Ba)	µg/L	2	9	9	9	9	9	9	9	9	8
Dissolved Beryllium (Be)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Bismuth (Bi)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Boron (B)	µg/L	<50	3660	3710	3650	3740	3690	3710	3690	3760	3680
Dissolved Cadmium (Cd)	µg/L	<0.01	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07
Dissolved Chromium (Cr)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Cobalt (Co)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Copper (Cu)	µg/L	<0.05	0.37	0.32	0.32	0.3	0.33	0.38	0.37	0.46 (1)	0.29
Dissolved Iron (Fe)	µg/L	<1	2	2	2	5	2	2	3	3	2
Dissolved Lead (Pb)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.07	<0.05
Dissolved Lithium (Li)	µg/L	<20	172	176	171	176	174	173	175	179	174
Dissolved Manganese (Mn)	µg/L	<0.2	1.4	1.4	1.4	1.5	1.4	1.4	1.3	1.4	1.3
Dissolved Molybdenum (Mo)	µg/L	<1	10	9	10	10	10	10	10	10	10
Dissolved Nickel (Ni)	µg/L	0.14	0.37	0.42	0.4	0.36	0.41	0.37	0.38	0.43	0.44
Dissolved Selenium (Se)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Silicon (Si)	µg/L	<100	1510	1440	1440	1430	1490	1440	1640	1580	1660
Dissolved Silver (Ag)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Strontium (Sr)	µg/L	<10	6910	7040	6930	7050	6900	7100	6940	7150	7000
Dissolved Thallium (Tl)	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Tin (Sn)	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Titanium (Ti)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Uranium (U)	µg/L	<0.05	2.23	2.27	2.24	2.28	2.49	2.47	2.27	2.32	2.32
Dissolved Vanadium (V)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Zinc (Zn)	µg/L	1.4	3.6	1	0.8	0.9	1.3	1.2	6.9	2.5	1.5

APPENDIX IV

Field Sampling Water Quality QA/QC Assessment

Table IV-1: Summary of the Equipment Blank Quality Assurance/Quality Control Assessment

Parameter	Number of Times the Concentration was >MDL	
	Equipment Blank	Equipment Blank
	4-May-09	14-May-09
Conductivity	44500	-
Salinity	288	-
Nitrate	89	2
Nitrate and Nitrate	89	2
Total Copper	6	-
Total Zinc	24	-
Dissolved Copper	6	-
Dissolved Zinc	30	-

Table IV-2: Summary of Parameters in Triplicate Samples where the Relative Standard Deviation (RSD) was > 18% (for parameters > 5 times MDL)

Parameter	RSD Between Triplicate Samples > 18% for parameter concentrations > 5 times MDL					
	AH-S1-T	AH-S1-M	AH-S1-B	FC-S1-T	FC-S1-M	FC-S1-B
	12-May-09	12-May-09	12-May-09	20-May-09	20-May-09	20-May-09
Total Suspended Solids	-	-	-	-	29	51
Total Copper	-	-	36	-	-	-
Dissolved Copper	-	-	-	-	-	23
Total Zinc	-	-	-	-	129	-
Dissolved Zinc	-	-	-	87	-	79

APPENDIX V

Laboratory Results

LABORATORY CERTIFICATES

CANTEST

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505013

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1338-01	
DATE SAMPLED:		May 4/09	DETECTION LIMIT
CANTEST ID:		905050056	
Dissolved Fluoride	F	<	0.05
Dissolved Chloride	Cl	0.36	0.2
Dissolved Sulphate	SO4	0.71	0.5
Dissolved Organic Carbon	C	<	30
Total Organic Carbon	C	<	30
Ammonia Nitrogen	N	<	0.01
Total Kjeldahl Nitrogen	N	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505013

CANTEST

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
1338-01	May 4/09	905050056	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505013

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1338-01		
DATE SAMPLED:		May 4/09	DETECTION LIMIT	UNITS
CANTEST ID:		905050056		
pH, Laboratory		4.6	0.1	pH units
Conductivity		44500	1	µS/cm
Salinity		28.8	0.1	Salinity
Total Suspended Solids		<	2	mg/L
Alkalinity Total 4.5		<	2	mg/L
Bicarbonate Alkalinity	HCO3	<	2	mg/L
Carbonate Alkalinity	CO3	<	2	mg/L
Hydroxide Alkalinity	OH	<	2	mg/L
Nitrate and Nitrite	N	0.178	0.002	mg/L
Nitrate	N	0.178	0.002	mg/L
Nitrite	N	<	0.002	mg/L
Ortho Phosphorus	P	0.008	0.003	mg/L as P
Total Phosphorus	P	0.004	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Sample

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1338
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 1

REPORT DATE: May 12, 2009

DATE SUBMITTED: May 4, 2009

GROUP NUMBER: 100505013

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Dissolved Organic Carbon in Water - was determined based on Method 5310 A and B in Standard Methods (21st Edition) and Method X314 in the BC Laboratory Manual (2005 Edition).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Total Organic Carbon in Water - was determined based on Method 5310 A and B in Standard Methods (21st Edition) and Method X314 in the BC Laboratory Manual (2005).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505013

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505017

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1337-01	1337-02	1337-03	1337-04	
DATE SAMPLED:		May 4/09	May 4/09	May 4/09	May 4/09	DETECTION LIMIT
CANTEST ID:		905050059	905050060	905050061	905050062	
Dissolved Fluoride	F	<	<	<	<	10
Dissolved Chloride	Cl	18800	18900	19000	19000	40
Dissolved Sulphate	SO4	2690	2470	2480	2480	100
Dissolved Organic Carbon	C	<	<	<	<	30
Total Organic Carbon	C	<	<	<	<	30
Ammonia Nitrogen	N	0.04	0.03	0.03	0.04	0.01
Total Kjeldahl Nitrogen	N	0.3	0.2	<	0.3	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505017

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1337-05	1337-06	1337-07	1337-08	
DATE SAMPLED:		May 4/09	May 4/09	May 4/09	May 4/09	DETECTION LIMIT
CANTEST ID:		905050064	905050065	905050066	905050067	
Dissolved Fluoride	F	<	<	<	<	10
Dissolved Chloride	Cl	19000	19000	18700	19000	40
Dissolved Sulphate	SO4	2500	2450	2440	2440	100
Dissolved Organic Carbon	C	<	<	<	<	30
Total Organic Carbon	C	<	<	<	<	30
Ammonia Nitrogen	N	0.03	0.04	0.03	0.03	0.01
Total Kjeldahl Nitrogen	N	0.3	0.2	<	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505017

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1337-09	
DATE SAMPLED:		May 4/09	DETECTION LIMIT
CANTEST ID:		905050068	
Dissolved Fluoride	F	<	10
Dissolved Chloride	Cl	18200	40
Dissolved Sulphate	SO4	2350	100
Dissolved Organic Carbon	C	<	30
Total Organic Carbon	C	<	30
Ammonia Nitrogen	N	0.03	0.01
Total Kjeldahl Nitrogen	N	0.2	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505017

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
1337-01	May 4/09	905050059	<
1337-02	May 4/09	905050060	<
1337-03	May 4/09	905050061	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505017

CANTEST

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1337-01	May 4/09	905050059	7
1337-02	May 4/09	905050060	13
1337-03	May 4/09	905050061	11
1337-04	May 4/09	905050062	14
1337-05	May 4/09	905050064	9
1337-06	May 4/09	905050065	10
1337-07	May 4/09	905050066	7
1337-08	May 4/09	905050067	4
1337-09	May 4/09	905050068	5
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505017

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1337-01	1337-02	1337-03	1337-04	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 4/09	May 4/09	May 4/09	May 4/09		
CANTEST ID:		905050059	905050060	905050061	905050062		
pH, Laboratory		7.8	7.8	7.7	7.8	0.1	pH units
Conductivity		48700	48000	53800	50700	1	µS/cm
Salinity		31.8	31.3	35.5	33.2	0.1	Salinity
Total Suspended Solids		3	2	< 2	3	1	mg/L
Alkalinity Total 4.5		110	112	112	112	2	mg/L
Bicarbonate Alkalinity	HCO3	135	137	136	136	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.342	0.354	0.403	0.327	0.002	mg/L
Nitrate	N	0.339	0.350	0.399	0.324	0.002	mg/L
Nitrite	N	0.003	0.004	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.069	0.068	0.068	0.068	0.003	mg/L as P
Total Phosphorus	P	0.084	0.079	0.076	0.097	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505017

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1337-05	1337-06	1337-07	1337-08	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 4/09	May 4/09	May 4/09	May 4/09		
CANTEST ID:		905050064	905050065	905050066	905050067		
pH, Laboratory		7.8	7.8	7.8	7.9	0.1	pH units
Conductivity		53300	46200	51700	46300	1	µS/cm
Salinity		35.2	30.0	34.0	30.0	0.1	Salinity
Total Suspended Solids		2	3	4	5	1	mg/L
Alkalinity Total 4.5		112	112	110	114	2	mg/L
Bicarbonate Alkalinity	HCO3	136	137	134	138	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.357	0.347	0.346	0.354	0.002	mg/L
Nitrate	N	0.353	0.343	0.342	0.350	0.002	mg/L
Nitrite	N	0.003	0.004	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.069	0.068	0.069	0.068	0.003	mg/L as P
Total Phosphorus	P	0.078	0.079	0.079	0.079	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505017

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1337-09		
DATE SAMPLED:		May 4/09	DETECTION LIMIT	UNITS
CANTEST ID:		905050068		
pH, Laboratory		7.8	0.1	pH units
Conductivity		52000	1	µS/cm
Salinity		34.2	0.1	Salinity
Total Suspended Solids		10	1	mg/L
Alkalinity Total 4.5		114	2	mg/L
Bicarbonate Alkalinity	HCO3	139	2	mg/L
Carbonate Alkalinity	CO3	<	2	mg/L
Hydroxide Alkalinity	OH	<	2	mg/L
Nitrate and Nitrite	N	0.348	0.002	mg/L
Nitrate	N	0.345	0.002	mg/L
Nitrite	N	0.003	0.002	mg/L
Ortho Phosphorus	P	0.069	0.003	mg/L as P
Total Phosphorus	P	0.078	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505017

CANTEST

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1337-01	May 4/09	905050059	26
1337-02	May 4/09	905050060	36
1337-03	May 4/09	905050061	37
1337-04	May 4/09	905050062	37
1337-05	May 4/09	905050064	26
1337-06	May 4/09	905050065	15
1337-07	May 4/09	905050066	15
1337-08	May 4/09	905050067	18
1337-09	May 4/09	905050068	22
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1337
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 9

REPORT DATE: May 12, 2009

DATE SUBMITTED: May 4, 2009

GROUP NUMBER: 100505017

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Dissolved Organic Carbon in Water - was determined based on Method 5310 A and B in Standard Methods (21st Edition) and Method X314 in the BC Laboratory Manual (2005 Edition).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Total Organic Carbon in Water - was determined based on Method 5310 A and B in Standard Methods (21st Edition) and Method X314 in the BC Laboratory Manual (2005).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 12, 2009

GROUP NUMBER: 100505017

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 14, 2009

GROUP NUMBER: 100506024

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1336-01	1336-02	1336-03	1336-04	
DATE SAMPLED:		May 5/09	May 5/09	May 5/09	May 5/09	DETECTION LIMIT
CANTEST ID:		905060053	905060055	905060056	905060057	
Dissolved Fluoride	F	<	<	<	<	10
Dissolved Chloride	Cl	17700	17700	18000	18000	40
Dissolved Sulphate	SO4	2270	2340	2320	2320	100
Dissolved Organic Carbon	C	<	<	<	<	30
Total Organic Carbon	C	<	<	<	<	30
Ammonia Nitrogen	N	0.04	0.04	0.04	0.04	0.01
Total Kjeldahl Nitrogen	N	<	0.3	<	0.3	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 14, 2009

GROUP NUMBER: 100506024

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1336-05	1336-06	1336-07	1336-08	
DATE SAMPLED:		May 5/09	May 5/09	May 5/09	May 5/09	DETECTION LIMIT
CANTEST ID:		905060058	905060059	905060061	905060062	
Dissolved Fluoride	F	<	<	<	<	10
Dissolved Chloride	Cl	18000	17900	17900	18200	40
Dissolved Sulphate	SO4	2310	2310	2300	2340	100
Dissolved Organic Carbon	C	<	<	<	<	30
Total Organic Carbon	C	<	<	<	<	30
Ammonia Nitrogen	N	0.04	0.03	0.04	0.03	0.01
Total Kjeldahl Nitrogen	N	0.3	0.8	0.5	0.6	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 14, 2009

GROUP NUMBER: 100506024

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1336-09	
DATE SAMPLED:		May 5/09	DETECTION LIMIT
CANTEST ID:		905060067	
Dissolved Fluoride	F	<	10
Dissolved Chloride	Cl	18000	40
Dissolved Sulphate	SO4	2310	100
Dissolved Organic Carbon	C	<	30
Total Organic Carbon	C	<	30
Ammonia Nitrogen	N	0.04	0.01
Total Kjeldahl Nitrogen	N	0.4	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 14, 2009

GROUP NUMBER: 100506024

CANTEST

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
1336-01	May 5/09	905060053	<
1336-02	May 5/09	905060055	<
1336-03	May 5/09	905060056	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 14, 2009

GROUP NUMBER: 100506024

CANTEST

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1336-01	May 5/09	905060053	<
1336-02	May 5/09	905060055	<
1336-03	May 5/09	905060056	<
1336-04	May 5/09	905060057	<
1336-05	May 5/09	905060058	<
1336-06	May 5/09	905060059	1
1336-07	May 5/09	905060061	<
1336-08	May 5/09	905060062	<
1336-09	May 5/09	905060067	2
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 14, 2009

GROUP NUMBER: 100506024

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1336-01	1336-02	1336-03	1336-04		
DATE SAMPLED:		May 5/09	May 5/09	May 5/09	May 5/09	DETECTION LIMIT	UNITS
CANTEST ID:		905060053	905060055	905060056	905060057		
pH, Laboratory		7.8	7.9	7.8	7.8	0.1	pH units
Conductivity		51400	51800	52200	53400	1	µS/cm
Salinity		33.8	34.1	34.3	35.2	0.1	Salinity
Total Suspended Solids		4	5	14	5	1	mg/L
Alkalinity Total 4.5		110	108	108	109	2	mg/L
Bicarbonate Alkalinity	HCO3	134	132	132	133	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.255	0.280	0.334	0.323	0.002	mg/L
Nitrate	N	0.251	0.276	0.330	0.320	0.002	mg/L
Nitrite	N	0.004	0.004	0.004	0.005	0.002	mg/L
Ortho Phosphorus	P	0.063	0.063	0.066	0.067	0.003	mg/L as P
Total Phosphorus	P	0.072	0.074	0.084	0.079	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 14, 2009

GROUP NUMBER: 100506024

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1336-05	1336-06	1336-07	1336-08	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 5/09	May 5/09	May 5/09	May 5/09		
CANTEST ID:		905060058	905060059	905060061	905060062		
pH, Laboratory		7.9	7.8	7.9	7.8	0.1	pH units
Conductivity		54300	52500	51600	52100	1	µS/cm
Salinity		35.9	34.6	33.9	34.3	0.1	Salinity
Total Suspended Solids		4	5	3	2	1	mg/L
Alkalinity Total 4.5		112	110	110	110	2	mg/L
Bicarbonate Alkalinity	HCO3	136	134	134	134	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.325	0.346	0.304	0.332	0.002	mg/L
Nitrate	N	0.321	0.341	0.3	0.328	0.002	mg/L
Nitrite	N	0.004	0.005	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.066	0.067	0.067	0.067	0.003	mg/L as P
Total Phosphorus	P	0.078	0.093	0.076	0.076	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 14, 2009

GROUP NUMBER: 100506024

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1336-09		
DATE SAMPLED:		May 5/09	DETECTION LIMIT	UNITS
CANTEST ID:		905060067		
pH, Laboratory		7.8	0.1	pH units
Conductivity		52200	1	µS/cm
Salinity		34.3	0.1	Salinity
Total Suspended Solids		5	1	mg/L
Alkalinity Total 4.5		110	2	mg/L
Bicarbonate Alkalinity	HCO3	134	2	mg/L
Carbonate Alkalinity	CO3	<	2	mg/L
Hydroxide Alkalinity	OH	<	2	mg/L
Nitrate and Nitrite	N	0.336	0.002	mg/L
Nitrate	N	0.332	0.002	mg/L
Nitrite	N	0.004	0.002	mg/L
Ortho Phosphorus	P	0.068	0.003	mg/L as P
Total Phosphorus	P	0.075	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 14, 2009

GROUP NUMBER: 100506024

CANTEST

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1336-01	May 5/09	905060053	<
1336-02	May 5/09	905060055	<
1336-03	May 5/09	905060056	<
1336-04	May 5/09	905060057	<
1336-05	May 5/09	905060058	<
1336-06	May 5/09	905060059	2
1336-07	May 5/09	905060061	<
1336-08	May 5/09	905060062	4
1336-09	May 5/09	905060067	6
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1336
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 9

REPORT DATE: May 14, 2009

DATE SUBMITTED: May 6, 2009

GROUP NUMBER: 100506024

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Dissolved Organic Carbon in Water - was determined based on Method 5310 A and B in Standard Methods (21st Edition) and Method X314 in the BC Laboratory Manual (2005 Edition).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Total Organic Carbon in Water - was determined based on Method 5310 A and B in Standard Methods (21st Edition) and Method X314 in the BC Laboratory Manual (2005).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 14, 2009

GROUP NUMBER: 100506024

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512005

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1339-01	1339-02	1339-03	1339-04	
DATE SAMPLED:		May 11/09	May 11/09	May 11/09	May 11/09	DETECTION LIMIT
CANTEST ID:		905120008	905120009	905120010	905120011	
Dissolved Fluoride	F	<	<	< 25	< 25	10
Dissolved Chloride	Cl	18900	18900	21100	21000	40
Dissolved Sulphate	SO4	2490	2490	2580	2550	100
Ammonia Nitrogen	N	0.06	0.05	0.05	0.05	0.01
Total Kjeldahl Nitrogen	N	0.5	<	0.2	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512005

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1339-05	1339-06	1339-07	1339-08	
DATE SAMPLED:		May 11/09	May 11/09	May 11/09	May 11/09	DETECTION LIMIT
CANTEST ID:		905120012	905120013	905120014	905120015	
Dissolved Fluoride	F	<	<	<	<	25
Dissolved Chloride	Cl	21100	21000	20600	20800	100
Dissolved Sulphate	SO4	2540	2570	2500	2530	250
Ammonia Nitrogen	N	0.06	0.06	0.05	0.04	0.01
Total Kjeldahl Nitrogen	N	0.3	<	<	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512005

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1339-09	
DATE SAMPLED:		May 11/09	DETECTION LIMIT
CANTEST ID:		905120016	
Dissolved Fluoride	F	<	10
Dissolved Chloride	Cl	18900	40
Dissolved Sulphate	SO4	2570	100
Ammonia Nitrogen	N	0.08	0.01
Total Kjeldahl Nitrogen	N	0.3	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512005

CANTEST

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
1339-01	May 11/09	905120008	<
1339-02	May 11/09	905120009	<
1339-03	May 11/09	905120010	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512005

CANTEST

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1339-01	May 11/09	905120008	4
1339-02	May 11/09	905120009	11
1339-03	May 11/09	905120010	5
1339-04	May 11/09	905120011	<
1339-05	May 11/09	905120012	<
1339-06	May 11/09	905120013	1
1339-07	May 11/09	905120014	<
1339-08	May 11/09	905120015	2
1339-09	May 11/09	905120016	24
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512005

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1339-01	1339-02	1339-03	1339-04		
DATE SAMPLED:		May 11/09	May 11/09	May 11/09	May 11/09	DETECTION LIMIT	UNITS
CANTEST ID:		905120008	905120009	905120010	905120011		
pH, Laboratory		7.8	7.8	7.8	7.8	0.1	pH units
Conductivity		49800	49200	49600	49400	1	µS/cm
Salinity		32.6	32.2	32.4	32.3	0.1	Salinity
Total Suspended Solids		3	3	2	2	1	mg/L
Alkalinity Total 4.5		110	112	112	112	2	mg/L
Bicarbonate Alkalinity	HCO3	134	137	137	137	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.421	0.377	0.429	0.369	0.002	mg/L
Nitrate	N	0.417	0.373	0.425	0.365	0.002	mg/L
Nitrite	N	0.004	0.004	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.069	0.071	0.069	0.069	0.003	mg/L as P
Total Phosphorus	P	0.074	0.075	0.075	0.073	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512005

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1339-05	1339-06	1339-07	1339-08	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 11/09	May 11/09	May 11/09	May 11/09		
CANTEST ID:		905120012	905120013	905120014	905120015		
pH, Laboratory		7.8	7.8	7.8	7.8	0.1	pH units
Conductivity		49500	49600	49600	49500	1	µS/cm
Salinity		32.4	32.4	32.4	32.4	0.1	Salinity
Total Suspended Solids		4	5	2	6	1	mg/L
Alkalinity Total 4.5		112	113	113	111	2	mg/L
Bicarbonate Alkalinity	HCO3	137	138	138	135	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.368	0.392	0.372	0.366	0.002	mg/L
Nitrate	N	0.364	0.388	0.368	0.362	0.002	mg/L
Nitrite	N	0.004	0.004	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.068	0.070	0.069	0.074	0.003	mg/L as P
Total Phosphorus	P	0.075	0.078	0.076	0.072	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512005

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1339-09		
DATE SAMPLED:		May 11/09	DETECTION LIMIT	UNITS
CANTEST ID:		905120016		
pH, Laboratory		7.8	0.1	pH units
Conductivity		49500	1	µS/cm
Salinity		32.4	0.1	Salinity
Total Suspended Solids		5	1	mg/L
Alkalinity Total 4.5		112	2	mg/L
Bicarbonate Alkalinity	HCO3	137	2	mg/L
Carbonate Alkalinity	CO3	<	2	mg/L
Hydroxide Alkalinity	OH	<	2	mg/L
Nitrate and Nitrite	N	0.360	0.002	mg/L
Nitrate	N	0.356	0.002	mg/L
Nitrite	N	0.004	0.002	mg/L
Ortho Phosphorus	P	0.069	0.003	mg/L as P
Total Phosphorus	P	0.075	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512005

CANTEST

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1339-01	May 11/09	905120008	26
1339-02	May 11/09	905120009	33
1339-03	May 11/09	905120010	30
1339-04	May 11/09	905120011	4
1339-05	May 11/09	905120012	26
1339-06	May 11/09	905120013	15
1339-07	May 11/09	905120014	<
1339-08	May 11/09	905120015	26
1339-09	May 11/09	905120016	110
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1339
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 9

REPORT DATE: May 20, 2009

DATE SUBMITTED: May 12, 2009

GROUP NUMBER: 100512005

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512005

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

COMMENTS:

Phosphorus - Although the Total Phosphorus was slightly less than the Ortho Phosphorus for sample 905120015 the differ- ence is within the analytical uncertainty of the tests - djn May 20, 2009

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512008

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1341-01	1341-02	1341-03	1341-04	
DATE SAMPLED:		May 11/09	May 11/09	May 11/09	May 11/09	DETECTION LIMIT
CANTEST ID:		905120022	905120025	905120026	905120027	
Dissolved Fluoride	F	<	<	<	<	10
Dissolved Chloride	Cl	18400	18300	18300	18400	40
Dissolved Sulphate	SO4	2420	2420	2420	2430	100
Ammonia Nitrogen	N	0.06	0.05	0.05	0.05	0.01
Total Kjeldahl Nitrogen	N	0.3	<	<	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512008

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1341-05	1341-06	1341-07	1341-08	
DATE SAMPLED:		May 11/09	May 11/09	May 11/09	May 11/09	DETECTION LIMIT
CANTEST ID:		905120028	905120029	905120030	905120031	
Dissolved Fluoride	F	<	<	<	<	10
Dissolved Chloride	Cl	18100	18600	18500	18600	40
Dissolved Sulphate	SO4	2400	2480	2440	2460	100
Ammonia Nitrogen	N	0.06	0.06	0.06	0.05	0.01
Total Kjeldahl Nitrogen	N	<	<	<	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512008

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1341-09	
DATE SAMPLED:		May 11/09	DETECTION LIMIT
CANTEST ID:		905120032	
Dissolved Fluoride	F	<	10
Dissolved Chloride	Cl	18600	40
Dissolved Sulphate	SO4	2460	100
Ammonia Nitrogen	N	0.06	0.01
Total Kjeldahl Nitrogen	N	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512008

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
1341-01	May 11/09	905120022	<
1341-02	May 11/09	905120025	<
1341-03	May 11/09	905120026	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512008

CANTEST

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1341-01	May 11/09	905120022	<
1341-02	May 11/09	905120025	<
1341-03	May 11/09	905120026	<
1341-04	May 11/09	905120027	<
1341-05	May 11/09	905120028	2
1341-06	May 11/09	905120029	<
1341-07	May 11/09	905120030	<
1341-08	May 11/09	905120031	<
1341-09	May 11/09	905120032	<
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512008

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1341-01	1341-02	1341-03	1341-04		
DATE SAMPLED:		May 11/09	May 11/09	May 11/09	May 11/09	DETECTION LIMIT	UNITS
CANTEST ID:		905120022	905120025	905120026	905120027		
pH, Laboratory		7.9	7.9	7.9	7.9	0.1	pH units
Conductivity		47900	47400	47800	48000	1	µS/cm
Salinity		31.2	30.8	31.1	31.3	0.1	Salinity
Total Suspended Solids		6	6	5	4	1	mg/L
Alkalinity Total 4.5		110	110	110	110	2	mg/L
Bicarbonate Alkalinity	HCO3	134	134	134	134	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.304	0.311	0.361	0.301	0.002	mg/L
Nitrate	N	0.300	0.307	0.357	0.297	0.002	mg/L
Nitrite	N	0.004	0.004	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.062	0.061	0.063	0.061	0.003	mg/L as P
Total Phosphorus	P	0.069	0.069	0.070	0.069	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512008

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1341-05	1341-06	1341-07	1341-08	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 11/09	May 11/09	May 11/09	May 11/09		
CANTEST ID:		905120028	905120029	905120030	905120031		
pH, Laboratory		7.9	7.9	7.9	7.9	0.1	pH units
Conductivity		48000	48400	48000	48400	1	µS/cm
Salinity		31.3	31.6	31.3	31.6	0.1	Salinity
Total Suspended Solids		7	< 2	3	10	1	mg/L
Alkalinity Total 4.5		110	99	110	110	2	mg/L
Bicarbonate Alkalinity	HCO3	134	121	134	135	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.289	0.339	0.298	0.310	0.002	mg/L
Nitrate	N	0.285	0.335	0.294	0.306	0.002	mg/L
Nitrite	N	0.004	0.004	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.062	0.066	0.061	0.062	0.003	mg/L as P
Total Phosphorus	P	0.068	0.070	0.066	0.070	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512008

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1341-09		
DATE SAMPLED:		May 11/09	DETECTION LIMIT	UNITS
CANTEST ID:		905120032		
pH, Laboratory		7.9	0.1	pH units
Conductivity		48600	1	µS/cm
Salinity		31.7	0.1	Salinity
Total Suspended Solids		4	1	mg/L
Alkalinity Total 4.5		110	2	mg/L
Bicarbonate Alkalinity	HCO3	135	2	mg/L
Carbonate Alkalinity	CO3	<	2	mg/L
Hydroxide Alkalinity	OH	<	2	mg/L
Nitrate and Nitrite	N	0.342	0.002	mg/L
Nitrate	N	0.337	0.002	mg/L
Nitrite	N	0.005	0.002	mg/L
Ortho Phosphorus	P	0.067	0.003	mg/L as P
Total Phosphorus	P	0.071	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512008

CANTEST

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1341-01	May 11/09	905120022	<
1341-02	May 11/09	905120025	<
1341-03	May 11/09	905120026	<
1341-04	May 11/09	905120027	<
1341-05	May 11/09	905120028	<
1341-06	May 11/09	905120029	<
1341-07	May 11/09	905120030	<
1341-08	May 11/09	905120031	<
1341-09	May 11/09	905120032	<
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1341
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 9

REPORT DATE: May 20, 2009

DATE SUBMITTED: May 12, 2009

GROUP NUMBER: 100512008

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512008

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512102

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1366-01	1366-03	
DATE SAMPLED:		May 12/09	May 12/09	DETECTION LIMIT
CANTEST ID:		905120292	905120293	
Dissolved Fluoride	F	<	<	10
Dissolved Chloride	Cl	18900	19000	40
Dissolved Sulphate	SO4	2520	2530	100
Ammonia Nitrogen	N	0.05	0.05	0.01
Total Kjeldahl Nitrogen	N	0.4	0.3	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512102

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1366-01	May 12/09	905120292	1
1366-03	May 12/09	905120293	4
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512102

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1366-01	1366-03	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 12/09	May 12/09		
CANTEST ID:		905120292	905120293		
pH, Laboratory		7.8	7.8	0.1	pH units
Conductivity		51500	51400	1	µS/cm
Salinity		33.8	33.8	0.1	Salinity
Total Suspended Solids		3	4	1	mg/L
Alkalinity Total 4.5		112	107	2	mg/L
Bicarbonate Alkalinity	HCO3	136	131	2	mg/L
Carbonate Alkalinity	CO3	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	2	mg/L
Nitrate and Nitrite	N	0.400	0.350	0.002	mg/L
Nitrate	N	0.396	0.346	0.002	mg/L
Nitrite	N	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.068	0.069	0.003	mg/L as P
Total Phosphorus	P	0.072	0.075	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512102

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1366-01	May 12/09	905120292	5
1366-03	May 12/09	905120293	9
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1366
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 2

REPORT DATE: May 20, 2009

DATE SUBMITTED: May 12, 2009

GROUP NUMBER: 100512102

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512102

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512103

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1359-01	1359-02	1359-03	1359-04	
DATE SAMPLED:		May 12/09	May 12/09	May 12/09	May 12/09	DETECTION LIMIT
CANTEST ID:		905120296	905120297	905120298	905120299	
Dissolved Fluoride	F	<	<	<	<	10
Dissolved Chloride	Cl	18800	18900	18900	19000	40
Dissolved Sulphate	SO4	2500	2510	2510	2530	100
Ammonia Nitrogen	N	0.05	0.05	0.05	0.04	0.01
Total Kjeldahl Nitrogen	N	<	<	<	0.3	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512103

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1359-05	1359-06	1359-07	1359-08	
DATE SAMPLED:		May 12/09	May 12/09	May 12/09	May 12/09	DETECTION LIMIT
CANTEST ID:		905120300	905120301	905120302	905120303	
Dissolved Fluoride	F	<	<	<	<	10
Dissolved Chloride	Cl	18900	18800	19100	19000	40
Dissolved Sulphate	SO4	2520	2510	2540	2520	100
Ammonia Nitrogen	N	0.05	0.05	0.05	0.05	0.01
Total Kjeldahl Nitrogen	N	0.3	<	0.3	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512103

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1359-09	
DATE SAMPLED:		May 12/09	DETECTION LIMIT
CANTEST ID:		905120304	
Dissolved Fluoride	F	<	10
Dissolved Chloride	Cl	19100	40
Dissolved Sulphate	SO4	2530	100
Ammonia Nitrogen	N	0.06	0.01
Total Kjeldahl Nitrogen	N	0.3	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512103

CANTEST

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
1359-01	May 12/09	905120296	<
1359-02	May 12/09	905120297	<
1359-03	May 12/09	905120298	<
1359-04	May 12/09	905120299	<
1359-05	May 12/09	905120300	<
1359-06	May 12/09	905120301	<
1359-07	May 12/09	905120302	<
1359-08	May 12/09	905120303	<
1359-09	May 12/09	905120304	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512103

CANTEST

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1359-01	May 12/09	905120296	2
1359-02	May 12/09	905120297	<
1359-03	May 12/09	905120298	1
1359-04	May 12/09	905120299	5
1359-05	May 12/09	905120300	4
1359-06	May 12/09	905120301	5
1359-07	May 12/09	905120302	2
1359-08	May 12/09	905120303	3
1359-09	May 12/09	905120304	4
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512103

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1359-01	1359-02	1359-03	1359-04		
DATE SAMPLED:		May 12/09	May 12/09	May 12/09	May 12/09	DETECTION LIMIT	UNITS
CANTEST ID:		905120296	905120297	905120298	905120299		
pH, Laboratory		7.8	7.8	7.8	7.8	0.1	pH units
Conductivity		52600	51800	51800	51900	1	µS/cm
Salinity		34.6	34.1	34.1	34.1	0.1	Salinity
Total Suspended Solids		< 2	< 2	< 2	<	2	mg/L
Alkalinity Total 4.5		110	110	111	110	2	mg/L
Bicarbonate Alkalinity	HCO3	135	134	135	134	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.366	0.346	0.339	0.344	0.002	mg/L
Nitrate	N	0.362	0.342	0.335	0.340	0.002	mg/L
Nitrite	N	0.004	0.004	0.003	0.004	0.002	mg/L
Ortho Phosphorus	P	0.069	0.069	0.069	0.069	0.003	mg/L as P
Total Phosphorus	P	0.073	0.074	0.079	0.074	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512103

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1359-05	1359-06	1359-07	1359-08	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 12/09	May 12/09	May 12/09	May 12/09		
CANTEST ID:		905120300	905120301	905120302	905120303		
pH, Laboratory		7.8	7.8	7.8	7.8	0.1	pH units
Conductivity		51700	52400	52700	51900	1	µS/cm
Salinity		34.0	34.5	34.7	34.1	0.1	Salinity
Total Suspended Solids		< 2	< 2	2	< 2	1	mg/L
Alkalinity Total 4.5		111	113	113	113	2	mg/L
Bicarbonate Alkalinity	HCO3	135	138	138	138	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.338	0.342	0.339	0.349	0.002	mg/L
Nitrate	N	0.334	0.338	0.335	0.345	0.002	mg/L
Nitrite	N	0.004	0.004	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.069	0.069	0.069	0.069	0.003	mg/L as P
Total Phosphorus	P	0.075	0.076	0.078	0.077	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512103

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1359-09		
DATE SAMPLED:		May 12/09	DETECTION LIMIT	UNITS
CANTEST ID:		905120304		
pH, Laboratory		7.8	0.1	pH units
Conductivity		51900	1	µS/cm
Salinity		34.1	0.1	Salinity
Total Suspended Solids		4	1	mg/L
Alkalinity Total 4.5		111	2	mg/L
Bicarbonate Alkalinity	HCO3	135	2	mg/L
Carbonate Alkalinity	CO3	<	2	mg/L
Hydroxide Alkalinity	OH	<	2	mg/L
Nitrate and Nitrite	N	0.344	0.002	mg/L
Nitrate	N	0.340	0.002	mg/L
Nitrite	N	0.004	0.002	mg/L
Ortho Phosphorus	P	0.069	0.003	mg/L as P
Total Phosphorus	P	0.078	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512103

CANTEST

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1359-01	May 12/09	905120296	4
1359-02	May 12/09	905120297	5
1359-03	May 12/09	905120298	4
1359-04	May 12/09	905120299	18
1359-05	May 12/09	905120300	14
1359-06	May 12/09	905120301	17
1359-07	May 12/09	905120302	25
1359-08	May 12/09	905120303	20
1359-09	May 12/09	905120304	18
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1359
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 9

REPORT DATE: May 20, 2009

DATE SUBMITTED: May 12, 2009

GROUP NUMBER: 100512103

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 20, 2009

GROUP NUMBER: 100512103

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 21, 2009

GROUP NUMBER: 100514010

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1361-01	1361-02	1361-03	1361-04	
DATE SAMPLED:		May 13/09	May 13/09	May 13/09	May 13/09	DETECTION LIMIT
CANTEST ID:		905140047	905140050	905140052	905140053	
Dissolved Fluoride	F	<	<	<	<	10
Dissolved Chloride	Cl	18600	18800	18400	18500	40
Dissolved Sulphate	SO4	2460	2490	2450	2470	100
Ammonia Nitrogen	N	0.04	0.04	0.04	0.03	0.01
Total Kjeldahl Nitrogen	N	0.4	0.3	0.4	0.2	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 21, 2009

GROUP NUMBER: 100514010

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1361-05	1361-06	1361-07	1361-08	
DATE SAMPLED:		May 13/09	May 13/09	May 13/09	May 13/09	DETECTION LIMIT
CANTEST ID:		905140054	905140055	905140056	905140057	
Dissolved Fluoride	F	<	<	<	<	10
Dissolved Chloride	Cl	18700	18700	18400	18500	40
Dissolved Sulphate	SO4	2500	2510	2440	2470	100
Ammonia Nitrogen	N	0.04	0.04	0.02	0.03	0.01
Total Kjeldahl Nitrogen	N	<	0.2	0.4	0.2	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 21, 2009

GROUP NUMBER: 100514010

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1361-09	
DATE SAMPLED:		May 13/09	DETECTION LIMIT
CANTEST ID:		905140061	
Dissolved Fluoride	F	<	10
Dissolved Chloride	Cl	18700	40
Dissolved Sulphate	SO4	2510	100
Ammonia Nitrogen	N	0.04	0.01
Total Kjeldahl Nitrogen	N	0.3	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 21, 2009

GROUP NUMBER: 100514010

CANTEST

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
1361-01	May 13/09	905140047	<
1361-02	May 13/09	905140050	<
1361-03	May 13/09	905140052	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 21, 2009

GROUP NUMBER: 100514010

CANTEST

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1361-01	May 13/09	905140047	<
1361-02	May 13/09	905140050	<
1361-03	May 13/09	905140052	<
1361-04	May 13/09	905140053	<
1361-05	May 13/09	905140054	<
1361-06	May 13/09	905140055	1
1361-07	May 13/09	905140056	<
1361-08	May 13/09	905140057	<
1361-09	May 13/09	905140061	<
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 21, 2009

GROUP NUMBER: 100514010

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1361-01	1361-02	1361-03	1361-04		
DATE SAMPLED:		May 13/09	May 13/09	May 13/09	May 13/09	DETECTION LIMIT	UNITS
CANTEST ID:		905140047	905140050	905140052	905140053		
pH, Laboratory		7.8	7.9	7.9	7.9	0.1	pH units
Conductivity		48900	49300	48700	48400	1	µS/cm
Salinity		31.9	32.2	31.8	31.6	0.1	Salinity
Total Suspended Solids		3	4	5	6	1	mg/L
Alkalinity Total 4.5		111	109	109	108	2	mg/L
Bicarbonate Alkalinity	HCO3	135	133	133	132	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.397	0.318	0.255	0.259	0.002	mg/L
Nitrate	N	0.392	0.314	0.251	0.255	0.002	mg/L
Nitrite	N	0.005	0.004	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.063	0.063	0.057	0.058	0.003	mg/L as P
Total Phosphorus	P	0.078	0.072	0.068	0.070	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 21, 2009

GROUP NUMBER: 100514010

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1361-05	1361-06	1361-07	1361-08	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 13/09	May 13/09	May 13/09	May 13/09		
CANTEST ID:		905140054	905140055	905140056	905140057		
pH, Laboratory		7.9	7.9	8.0	7.9	0.1	pH units
Conductivity		49200	48900	48400	48900	1	µS/cm
Salinity		32.2	31.9	31.6	31.9	0.1	Salinity
Total Suspended Solids		4	< 2	3	3	1	mg/L
Alkalinity Total 4.5		110	111	109	108	2	mg/L
Bicarbonate Alkalinity	HCO3	134	135	133	132	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.287	0.287	0.239	0.267	0.002	mg/L
Nitrate	N	0.283	0.283	0.235	0.263	0.002	mg/L
Nitrite	N	0.004	0.004	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.062	0.061	0.055	0.060	0.003	mg/L as P
Total Phosphorus	P	0.074	0.070	0.068	0.072	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 21, 2009

GROUP NUMBER: 100514010

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1361-09		
DATE SAMPLED:		May 13/09	DETECTION LIMIT	UNITS
CANTEST ID:		905140061		
pH, Laboratory		7.9	0.1	pH units
Conductivity		49200	1	µS/cm
Salinity		32.2	0.1	Salinity
Total Suspended Solids		6	1	mg/L
Alkalinity Total 4.5		111	2	mg/L
Bicarbonate Alkalinity	HCO3	135	2	mg/L
Carbonate Alkalinity	CO3	<	2	mg/L
Hydroxide Alkalinity	OH	<	2	mg/L
Nitrate and Nitrite	N	0.276	0.002	mg/L
Nitrate	N	0.271	0.002	mg/L
Nitrite	N	0.005	0.002	mg/L
Ortho Phosphorus	P	0.063	0.003	mg/L as P
Total Phosphorus	P	0.074	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 21, 2009

GROUP NUMBER: 100514010

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1361-01	May 13/09	905140047	5
1361-02	May 13/09	905140050	2
1361-03	May 13/09	905140052	<
1361-04	May 13/09	905140053	<
1361-05	May 13/09	905140054	<
1361-06	May 13/09	905140055	2
1361-07	May 13/09	905140056	<
1361-08	May 13/09	905140057	1
1361-09	May 13/09	905140061	1
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1361
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 9

REPORT DATE: May 21, 2009

DATE SUBMITTED: May 13, 2009

GROUP NUMBER: 100514010

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 21, 2009

GROUP NUMBER: 100514010

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100514078

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1368-01	1368-02	1368-03	1368-04	
DATE SAMPLED:		May 14/09	May 14/09	May 14/09	May 14/09	DETECTION LIMIT
CANTEST ID:		905140258	905140259	905140260	905140261	
Dissolved Fluoride	F	<	<	<	<	25
Dissolved Chloride	Cl	20800	21200	21000	20900	100
Dissolved Sulphate	SO4	2530	2570	2550	2530	250
Ammonia Nitrogen	N	0.02	0.03	0.03	0.02	0.01
Total Kjeldahl Nitrogen	N	<	0.3	0.3	0.2	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100514078

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1368-05	1368-06	1368-07	1368-08	
DATE SAMPLED:		May 14/09	May 14/09	May 14/09	May 14/09	DETECTION LIMIT
CANTEST ID:		905140262	905140263	905140264	905140266	
Dissolved Fluoride	F	<	<	<	<	25
Dissolved Chloride	Cl	20600	21200	20900	21000	100
Dissolved Sulphate	SO4	2520	2570	2550	2560	250
Ammonia Nitrogen	N	0.04	0.03	0.04	0.05	0.01
Total Kjeldahl Nitrogen	N	0.5	1.0	0.3	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100514078

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1368-09	1368-10	
DATE SAMPLED:		May 14/09	May 14/09	DETECTION LIMIT
CANTEST ID:		905140267	905140268	
Dissolved Fluoride	F	< 25	<	0.05
Dissolved Chloride	Cl	20800	<	0.2
Dissolved Sulphate	SO4	2550	<	0.5
Ammonia Nitrogen	N	0.06	<	0.01
Total Kjeldahl Nitrogen	N	<	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100514078

CANTEST

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
1368-01	May 14/09	905140258	<
1368-02	May 14/09	905140259	<
1368-03	May 14/09	905140260	0.02
1368-10	May 14/09	905140268	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100514078

CANTEST

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1368-01	May 14/09	905140258	4
1368-02	May 14/09	905140259	18
1368-03	May 14/09	905140260	2
1368-04	May 14/09	905140261	1
1368-05	May 14/09	905140262	10
1368-06	May 14/09	905140263	3
1368-07	May 14/09	905140264	<
1368-08	May 14/09	905140266	6
1368-09	May 14/09	905140267	5
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100514078

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1368-01	1368-02	1368-03	1368-04		
DATE SAMPLED:		May 14/09	May 14/09	May 14/09	May 14/09	DETECTION LIMIT	UNITS
CANTEST ID:		905140258	905140259	905140260	905140261		
pH, Laboratory		7.8	7.8	7.8	7.8	0.1	pH units
Conductivity		48300	48200	48300	48900	1	µS/cm
Salinity		31.5	31.4	31.5	31.9	0.1	Salinity
Total Suspended Solids		3	2	4	9	1	mg/L
Alkalinity Total 4.5		109	112	111	113	2	mg/L
Bicarbonate Alkalinity	HCO3	133	136	136	137	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.300	0.306	0.303	0.307	0.002	mg/L
Nitrate	N	0.296	0.301	0.299	0.303	0.002	mg/L
Nitrite	N	0.004	0.005	0.004	0.004	0.002	mg/L
Ortho Phosphorus	P	0.065	0.067	0.065	0.065	0.003	mg/L as P
Total Phosphorus	P	0.072	0.072	0.074	0.071	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100514078

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1368-05	1368-06	1368-07	1368-08	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 14/09	May 14/09	May 14/09	May 14/09		
CANTEST ID:		905140262	905140263	905140264	905140266		
pH, Laboratory		7.8	7.8	7.9	7.8	0.1	pH units
Conductivity		48700	49000	48300	47900	1	µS/cm
Salinity		31.8	32.0	31.5	31.2	0.1	Salinity
Total Suspended Solids		4	< 2	2	8	1	mg/L
Alkalinity Total 4.5		110	112	110	112	2	mg/L
Bicarbonate Alkalinity	HCO3	135	137	134	136	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.306	0.310	0.300	0.313	0.002	mg/L
Nitrate	N	0.302	0.306	0.296	0.308	0.002	mg/L
Nitrite	N	0.004	0.004	0.004	0.005	0.002	mg/L
Ortho Phosphorus	P	0.065	0.066	0.065	0.065	0.003	mg/L as P
Total Phosphorus	P	0.074	0.072	0.075	0.068	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100514078

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1368-09	1368-10	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 14/09	May 14/09		
CANTEST ID:		905140267	905140268		
pH, Laboratory		7.9	5.6	0.1	pH units
Conductivity		48300	3.5	1	µS/cm
Salinity		31.5	<	0.1	Salinity
Total Suspended Solids		4	2	1	mg/L
Alkalinity Total 4.5		110	<	2	mg/L
Bicarbonate Alkalinity	HCO3	134	<	2	mg/L
Carbonate Alkalinity	CO3	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	2	mg/L
Nitrate and Nitrite	N	0.300	0.013	0.002	mg/L
Nitrate	N	0.295	0.013	0.002	mg/L
Nitrite	N	0.005	<	0.002	mg/L
Ortho Phosphorus	P	0.065	<	0.003	mg/L as P
Total Phosphorus	P	0.069	<	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100514078

CANTEST

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1368-01	May 14/09	905140258	4
1368-02	May 14/09	905140259	85
1368-03	May 14/09	905140260	15
1368-04	May 14/09	905140261	8
1368-05	May 14/09	905140262	90
1368-06	May 14/09	905140263	28
1368-07	May 14/09	905140264	5
1368-08	May 14/09	905140266	22
1368-09	May 14/09	905140267	19
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1368
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 10

REPORT DATE: May 26, 2009

DATE SUBMITTED: May 14, 2009

GROUP NUMBER: 100514078

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100514078

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100515071

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1370-01	1370-02	1370-03	1370-04	
DATE SAMPLED:		May 15/09	May 15/09	May 15/09	May 15/09	DETECTION LIMIT
CANTEST ID:		905150265	905150272	905150273	905150274	
Dissolved Fluoride	F	<	<	<	<	25
Dissolved Chloride	Cl	20300	20700	20900	20500	100
Dissolved Sulphate	SO4	2700	2740	2910	2760	250
Ammonia Nitrogen	N	0.03	0.06	0.06	0.03	0.01
Total Kjeldahl Nitrogen	N	0.2	<	<	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100515071

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1370-05	1370-06	1370-07	1370-08	
DATE SAMPLED:		May 15/09	May 15/09	May 15/09	May 15/09	DETECTION LIMIT
CANTEST ID:		905150275	905150277	905150279	905150280	
Dissolved Fluoride	F	<	<	<	<	25
Dissolved Chloride	Cl	20700	20800	20300	21000	100
Dissolved Sulphate	SO4	2810	2820	2800	2870	250
Ammonia Nitrogen	N	0.05	0.05	0.03	0.04	0.01
Total Kjeldahl Nitrogen	N	<	<	<	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100515071

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1370-09	
DATE SAMPLED:		May 15/09	DETECTION LIMIT
CANTEST ID:		905150281	
Dissolved Fluoride	F	<	25
Dissolved Chloride	Cl	21100	100
Dissolved Sulphate	SO4	2870	250
Ammonia Nitrogen	N	0.04	0.01
Total Kjeldahl Nitrogen	N	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100515071

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
1370-01	May 15/09	905150265	<
1370-02	May 15/09	905150272	<
1370-03	May 15/09	905150273	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100515071

CANTEST

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1370-01	May 15/09	905150265	<
1370-02	May 15/09	905150272	<
1370-03	May 15/09	905150273	<
1370-04	May 15/09	905150274	<
1370-05	May 15/09	905150275	<
1370-06	May 15/09	905150277	<
1370-07	May 15/09	905150279	<
1370-08	May 15/09	905150280	1
1370-09	May 15/09	905150281	<
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100515071

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1370-01	1370-02	1370-03	1370-04		
DATE SAMPLED:		May 15/09	May 15/09	May 15/09	May 15/09	DETECTION LIMIT	UNITS
CANTEST ID:		905150265	905150272	905150273	905150274		
pH, Laboratory		7.8	7.9	7.9	7.9	0.1	pH units
Conductivity		48900	47400	47700	47000	1	µS/cm
Salinity		31.9	30.8	31.1	30.6	0.1	Salinity
Total Suspended Solids		6	7	3	2	1	mg/L
Alkalinity Total 4.5		107	112	109	111	2	mg/L
Bicarbonate Alkalinity	HCO3	131	137	133	135	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.257	0.279	0.299	0.238	0.002	mg/L
Nitrate	N	0.252	0.274	0.294	0.233	0.002	mg/L
Nitrite	N	0.005	0.005	0.005	0.005	0.002	mg/L
Ortho Phosphorus	P	0.059	0.067	0.067	0.059	0.003	mg/L as P
Total Phosphorus	P	0.062	0.067	0.068	0.061	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100515071

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1370-05	1370-06	1370-07	1370-08	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 15/09	May 15/09	May 15/09	May 15/09		
CANTEST ID:		905150275	905150277	905150279	905150280		
pH, Laboratory		7.9	7.9	7.9	7.9	0.1	pH units
Conductivity		47500	48200	47100	46800	1	µS/cm
Salinity		30.9	31.4	30.6	30.4	0.1	Salinity
Total Suspended Solids		5	8	8	4	1	mg/L
Alkalinity Total 4.5		112	110	110	105	2	mg/L
Bicarbonate Alkalinity	HCO3	136	134	134	128	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.258	0.291	0.236	0.280	0.002	mg/L
Nitrate	N	0.253	0.286	0.231	0.275	0.002	mg/L
Nitrite	N	0.004	0.005	0.005	0.005	0.002	mg/L
Ortho Phosphorus	P	0.066	0.067	0.059	0.065	0.003	mg/L as P
Total Phosphorus	P	0.066	0.067	0.063	0.067	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100515071

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1370-09		
DATE SAMPLED:		May 15/09	DETECTION LIMIT	UNITS
CANTEST ID:		905150281		
pH, Laboratory		7.9	0.1	pH units
Conductivity		46300	1	µS/cm
Salinity		30.0	0.1	Salinity
Total Suspended Solids		4	1	mg/L
Alkalinity Total 4.5		112	2	mg/L
Bicarbonate Alkalinity	HCO3	137	2	mg/L
Carbonate Alkalinity	CO3	<	2	mg/L
Hydroxide Alkalinity	OH	<	2	mg/L
Nitrate and Nitrite	N	0.273	0.002	mg/L
Nitrate	N	0.268	0.002	mg/L
Nitrite	N	0.005	0.002	mg/L
Ortho Phosphorus	P	0.067	0.003	mg/L as P
Total Phosphorus	P	0.087	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100515071

CANTEST

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1370-01	May 15/09	905150265	<
1370-02	May 15/09	905150272	2
1370-03	May 15/09	905150273	1
1370-04	May 15/09	905150274	1
1370-05	May 15/09	905150275	2
1370-06	May 15/09	905150277	5
1370-07	May 15/09	905150279	<
1370-08	May 15/09	905150280	2
1370-09	May 15/09	905150281	7
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

Analysis Report

CANTEST®

CANTEST LTD.

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4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

CHAIN OF CUSTODY: 1370
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 9

REPORT DATE: May 26, 2009

DATE SUBMITTED: May 15, 2009

GROUP NUMBER: 100515071

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): - Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 26, 2009

GROUP NUMBER: 100515071

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 27, 2009

GROUP NUMBER: 100520150

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1372-01	1372-02	1372-03	1372-04	
DATE SAMPLED:		May 20/09	May 20/09	May 20/09	May 20/09	DETECTION LIMIT
CANTEST ID:		905200506	905200507	905200508	905200509	
Dissolved Fluoride	F	<	<	<	<	25
Dissolved Chloride	Cl	18800	18900	19400	19100	100
Dissolved Sulphate	SO4	2110	2060	2220	2110	250
Ammonia Nitrogen	N	0.02	0.02	0.04	0.03	0.01
Total Kjeldahl Nitrogen	N	<	<	<	0.3	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 27, 2009

GROUP NUMBER: 100520150

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1372-05	1372-06	
DATE SAMPLED:		May 20/09	May 20/09	DETECTION LIMIT
CANTEST ID:		905200510	905200512	
Dissolved Fluoride	F	<	<	25
Dissolved Chloride	Cl	19400	19500	100
Dissolved Sulphate	SO4	2130	2140	250
Ammonia Nitrogen	N	0.03	0.03	0.01
Total Kjeldahl Nitrogen	N	0.3	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 27, 2009

GROUP NUMBER: 100520150

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1372-01	May 20/09	905200506	<
1372-02	May 20/09	905200507	<
1372-03	May 20/09	905200508	<
1372-04	May 20/09	905200509	<
1372-05	May 20/09	905200510	<
1372-06	May 20/09	905200512	<
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 27, 2009

GROUP NUMBER: 100520150

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1372-01	1372-02	1372-03	1372-04	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 20/09	May 20/09	May 20/09	May 20/09		
CANTEST ID:		905200506	905200507	905200508	905200509		
pH, Laboratory		7.9	7.9	7.8	7.9	0.1	pH units
Conductivity		49200	49200	49900	49200	1	µS/cm
Salinity		32.2	32.1	32.7	32.2	0.1	Salinity
Total Suspended Solids		8	6	9	7	1	mg/L
Alkalinity Total 4.5		112	110	109	111	2	mg/L
Bicarbonate Alkalinity	HCO3	137	134	133	135	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.262	0.274	0.332	0.331	0.002	mg/L
Nitrate	N	0.256	0.268	0.326	0.325	0.002	mg/L
Nitrite	N	0.006	0.006	0.006	0.006	0.002	mg/L
Ortho Phosphorus	P	0.049	0.057	0.065	0.063	0.003	mg/L as P
Total Phosphorus	P	0.067	0.067	0.076	0.072	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 27, 2009

GROUP NUMBER: 100520150

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1372-05	1372-06	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 20/09	May 20/09		
CANTEST ID:		905200510	905200512		
pH, Laboratory		7.9	7.9	0.1	pH units
Conductivity		49100	49000	1	µS/cm
Salinity		32.1	32.0	0.1	Salinity
Total Suspended Solids		6	15	1	mg/L
Alkalinity Total 4.5		109	110	2	mg/L
Bicarbonate Alkalinity	HCO3	133	134	2	mg/L
Carbonate Alkalinity	CO3	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	2	mg/L
Nitrate and Nitrite	N	0.326	0.313	0.002	mg/L
Nitrate	N	0.321	0.309	0.002	mg/L
Nitrite	N	0.005	0.005	0.002	mg/L
Ortho Phosphorus	P	0.064	0.062	0.003	mg/L as P
Total Phosphorus	P	0.074	0.071	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit
Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 27, 2009

GROUP NUMBER: 100520150

CANTEST

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1372-01	May 20/09	905200506	<
1372-02	May 20/09	905200507	<
1372-03	May 20/09	905200508	<
1372-04	May 20/09	905200509	<
1372-05	May 20/09	905200510	4
1372-06	May 20/09	905200512	7
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

Analysis Report

CANTEST LTD.

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4606 Canada Way
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FAX: 604 731 2386

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1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1372
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 6

REPORT DATE: May 27, 2009

DATE SUBMITTED: May 20, 2009

GROUP NUMBER: 100520150

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 27, 2009

GROUP NUMBER: 100520150

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: May 28, 2009

GROUP NUMBER: 100520153

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		21385-01	21385-02	21385-03	21385-04	
DATE SAMPLED:		May 20/09	May 20/09	May 20/09	May 20/09	DETECTION LIMIT
CANTEST ID:		905200517	905200519	905200520	905200521	
Dissolved Fluoride	F	<	<	<	<	25
Dissolved Chloride	Cl	18800	18800	18800	18800	100
Dissolved Sulphate	SO4	2090	2040	2020	2060	250
Ammonia Nitrogen	N	0.01	0.01	0.03	0.03	0.01
Total Kjeldahl Nitrogen	N	<	0.3	<	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 28, 2009

GROUP NUMBER: 100520153

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		21385-05	21385-06	21385-07	21385-08	
DATE SAMPLED:		May 20/09	May 20/09	May 20/09	May 20/09	DETECTION LIMIT
CANTEST ID:		905200522	905200525	905200526	905200528	
Dissolved Fluoride	F	<	<	<	<	25
Dissolved Chloride	Cl	18900	18800	18900	19000	100
Dissolved Sulphate	SO4	2060	2030	2040	2080	250
Ammonia Nitrogen	N	0.03	0.04	0.05	0.04	0.01
Total Kjeldahl Nitrogen	N	<	0.4	0.4	0.5	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 28, 2009

GROUP NUMBER: 100520153

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		21385-09	
DATE SAMPLED:		May 20/09	DETECTION LIMIT
CANTEST ID:		905200529	
Dissolved Fluoride	F	<	25
Dissolved Chloride	Cl	19000	100
Dissolved Sulphate	SO4	2070	250
Ammonia Nitrogen	N	0.04	0.01
Total Kjeldahl Nitrogen	N	0.4	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 28, 2009

GROUP NUMBER: 100520153

CANTEST

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
21385-01	May 20/09	905200517	<
21385-02	May 20/09	905200519	<
21385-03	May 20/09	905200520	<
21385-04	May 20/09	905200521	<
21385-05	May 20/09	905200522	<
21385-06	May 20/09	905200525	<
21385-07	May 20/09	905200526	<
21385-08	May 20/09	905200528	<
21385-09	May 20/09	905200529	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 28, 2009

GROUP NUMBER: 100520153

CANTEST

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
21385-01	May 20/09	905200517	<
21385-02	May 20/09	905200519	<
21385-03	May 20/09	905200520	<
21385-04	May 20/09	905200521	<
21385-05	May 20/09	905200522	<
21385-06	May 20/09	905200525	<
21385-07	May 20/09	905200526	<
21385-08	May 20/09	905200528	<
21385-09	May 20/09	905200529	<
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: May 28, 2009

GROUP NUMBER: 100520153

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		21385-01	21385-02	21385-03	21385-04	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 20/09	May 20/09	May 20/09	May 20/09		
CANTEST ID:		905200517	905200519	905200520	905200521		
pH, Laboratory		8.0	7.9	8.0	7.9	0.1	pH units
Conductivity		51200	49800	47700	49100	1	µS/cm
Salinity		33.6	32.6	31.1	32.1	0.1	Salinity
Total Suspended Solids		11	11	10	17	1	mg/L
Alkalinity Total 4.5		109	109	110	110	2	mg/L
Bicarbonate Alkalinity	HCO3	133	133	134	134	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.253	0.251	0.257	0.250	0.002	mg/L
Nitrate	N	0.247	0.245	0.251	0.244	0.002	mg/L
Nitrite	N	0.006	0.006	0.006	0.006	0.002	mg/L
Ortho Phosphorus	P	0.053	0.053	0.053	0.055	0.003	mg/L as P
Total Phosphorus	P	0.066	0.066	0.067	0.070	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 28, 2009

GROUP NUMBER: 100520153

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		21385-05	21385-06	21385-07	21385-08		
DATE SAMPLED:		May 20/09	May 20/09	May 20/09	May 20/09	DETECTION LIMIT	UNITS
CANTEST ID:		905200522	905200525	905200526	905200528		
pH, Laboratory		7.9	7.9	7.9	7.9	0.1	pH units
Conductivity		48500	48700	49300	48800	1	µS/cm
Salinity		31.6	31.8	32.2	31.9	0.1	Salinity
Total Suspended Solids		22	12	10	6	1	mg/L
Alkalinity Total 4.5		111	110	108	108	2	mg/L
Bicarbonate Alkalinity	HCO3	135	134	132	132	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.256	0.265	0.296	0.329	0.002	mg/L
Nitrate	N	0.250	0.260	0.290	0.323	0.002	mg/L
Nitrite	N	0.006	0.005	0.006	0.006	0.002	mg/L
Ortho Phosphorus	P	0.056	0.056	0.061	0.062	0.003	mg/L as P
Total Phosphorus	P	0.069	0.069	0.072	0.074	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 28, 2009

GROUP NUMBER: 100520153

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		21385-09		
DATE SAMPLED:		May 20/09	DETECTION LIMIT	UNITS
CANTEST ID:		905200529		
pH, Laboratory		7.9	0.1	pH units
Conductivity		49000	1	µS/cm
Salinity		32.0	0.1	Salinity
Total Suspended Solids		17	1	mg/L
Alkalinity Total 4.5		106	2	mg/L
Bicarbonate Alkalinity	HCO3	129	2	mg/L
Carbonate Alkalinity	CO3	<	2	mg/L
Hydroxide Alkalinity	OH	<	2	mg/L
Nitrate and Nitrite	N	0.300	0.002	mg/L
Nitrate	N	0.295	0.002	mg/L
Nitrite	N	0.005	0.002	mg/L
Ortho Phosphorus	P	0.062	0.003	mg/L as P
Total Phosphorus	P	0.077	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: May 28, 2009

GROUP NUMBER: 100520153

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
21385-01	May 20/09	905200517	<
21385-02	May 20/09	905200519	<
21385-03	May 20/09	905200520	<
21385-04	May 20/09	905200521	<
21385-05	May 20/09	905200522	<
21385-06	May 20/09	905200525	<
21385-07	May 20/09	905200526	1
21385-08	May 20/09	905200528	<
21385-09	May 20/09	905200529	2
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 21385
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 9

REPORT DATE: May 28, 2009

DATE SUBMITTED: May 20, 2009

GROUP NUMBER: 100520153

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: May 28, 2009

GROUP NUMBER: 100520153

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

REPORTED TO: Capital Regional District

REPORT DATE: June 1, 2009

GROUP NUMBER: 100521070

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1371-01	1371-02	1371-03	1371-04	
DATE SAMPLED:		May 21/09	May 21/09	May 21/09	May 21/09	DETECTION LIMIT
CANTEST ID:		905210138	905210139	905210141	905210143	
Dissolved Fluoride	F	<	<	<	<	25
Dissolved Chloride	Cl	19300	19400	19300	19000	100
Dissolved Sulphate	SO4	2120	2120	2120	2060	250
Ammonia Nitrogen	N	0.04	0.05	0.05	0.04	0.01
Total Kjeldahl Nitrogen	N	<	<	<	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: June 1, 2009

GROUP NUMBER: 100521070

CANTEST

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1371-05	1371-06	1371-07	1371-08	
DATE SAMPLED:		May 21/09	May 21/09	May 21/09	May 21/09	DETECTION LIMIT
CANTEST ID:		905210144	905210145	905210146	905210147	
Dissolved Fluoride	F	<	<	<	<	25
Dissolved Chloride	Cl	19000	18900	18900	18900	100
Dissolved Sulphate	SO4	2080	2090	2060	2070	250
Ammonia Nitrogen	N	0.04	0.04	0.04	0.04	0.01
Total Kjeldahl Nitrogen	N	<	<	<	0.2	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: June 1, 2009

GROUP NUMBER: 100521070

Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:		1371-09	
DATE SAMPLED:		May 21/09	DETECTION LIMIT
CANTEST ID:		905210149	
Dissolved Fluoride	F	<	25
Dissolved Chloride	Cl	18800	100
Dissolved Sulphate	SO4	2040	250
Ammonia Nitrogen	N	0.04	0.01
Total Kjeldahl Nitrogen	N	<	0.2

Results expressed as milligrams per liter (mg/L)
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: June 1, 2009

GROUP NUMBER: 100521070

Metals Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Total Mercury Hg
1371-01	May 21/09	905210138	<
1371-02	May 21/09	905210139	<
1371-03	May 21/09	905210141	<
DETECTION LIMIT			0.02
UNITS			µg/L

µg/L = micrograms per liter
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: June 1, 2009

GROUP NUMBER: 100521070

CANTEST

Microbiological Analysis in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Enterococci
1371-01	May 21/09	905210138	1
1371-02	May 21/09	905210139	92
1371-03	May 21/09	905210141	83
1371-04	May 21/09	905210143	<
1371-05	May 21/09	905210144	1
1371-06	May 21/09	905210145	44
1371-07	May 21/09	905210146	1
1371-08	May 21/09	905210147	1
1371-09	May 21/09	905210149	4
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL
< = Less than detection limit

REPORTED TO: Capital Regional District

REPORT DATE: June 1, 2009

GROUP NUMBER: 100521070

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1371-01	1371-02	1371-03	1371-04	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 21/09	May 21/09	May 21/09	May 21/09		
CANTEST ID:		905210138	905210139	905210141	905210143		
pH, Laboratory		7.8	7.8	7.8	7.8	0.1	pH units
Conductivity		52300	49800	49900	50400	1	µS/cm
Salinity		34.4	32.6	32.7	33.0	0.1	Salinity
Total Suspended Solids		< 2	< 2	< 2	<	2	mg/L
Alkalinity Total 4.5		110	110	111	112	2	mg/L
Bicarbonate Alkalinity	HCO3	134	134	135	137	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.321	0.362	0.357	0.334	0.002	mg/L
Nitrate	N	0.317	0.357	0.353	0.329	0.002	mg/L
Nitrite	N	0.004	0.005	0.004	0.005	0.002	mg/L
Ortho Phosphorus	P	0.057	0.062	0.062	0.060	0.003	mg/L as P
Total Phosphorus	P	0.068	0.072	0.074	0.069	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: June 1, 2009

GROUP NUMBER: 100521070

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1371-05	1371-06	1371-07	1371-08	DETECTION LIMIT	UNITS
DATE SAMPLED:		May 21/09	May 21/09	May 21/09	May 21/09		
CANTEST ID:		905210144	905210145	905210146	905210147		
pH, Laboratory		7.8	7.8	7.8	7.8	0.1	pH units
Conductivity		50200	50500	50200	50100	1	µS/cm
Salinity		32.9	33.1	32.9	32.8	0.1	Salinity
Total Suspended Solids		< 2	< 2	< 2	<	2	mg/L
Alkalinity Total 4.5		110	109	108	104	2	mg/L
Bicarbonate Alkalinity	HCO3	134	133	132	127	2	mg/L
Carbonate Alkalinity	CO3	<	<	<	<	2	mg/L
Hydroxide Alkalinity	OH	<	<	<	<	2	mg/L
Nitrate and Nitrite	N	0.345	0.364	0.455	0.349	0.002	mg/L
Nitrate	N	0.341	0.360	0.450	0.344	0.002	mg/L
Nitrite	N	0.004	0.004	0.005	0.005	0.002	mg/L
Ortho Phosphorus	P	0.059	0.062	0.061	0.061	0.003	mg/L as P
Total Phosphorus	P	0.073	0.071	0.071	0.069	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: June 1, 2009

GROUP NUMBER: 100521070

CANTEST

Conventional Parameters-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:		1371-09		
DATE SAMPLED:		May 21/09	DETECTION LIMIT	UNITS
CANTEST ID:		905210149		
pH, Laboratory		7.9	0.1	pH units
Conductivity		49600	1	µS/cm
Salinity		32.4	0.1	Salinity
Total Suspended Solids		<	2	mg/L
Alkalinity Total 4.5		97	2	mg/L
Bicarbonate Alkalinity	HCO3	118	2	mg/L
Carbonate Alkalinity	CO3	<	2	mg/L
Hydroxide Alkalinity	OH	<	2	mg/L
Nitrate and Nitrite	N	0.342	0.002	mg/L
Nitrate	N	0.337	0.002	mg/L
Nitrite	N	0.005	0.002	mg/L
Ortho Phosphorus	P	0.061	0.003	mg/L as P
Total Phosphorus	P	0.073	0.003	mg/L as P

µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
< = Less than detection limit

Salinity = Salinity Units
mg/L as P = milligrams per liter as P

REPORTED TO: Capital Regional District

REPORT DATE: June 1, 2009

GROUP NUMBER: 100521070

CANTEST

Microbiological Analysis-Victoria Laboratory- in Water

CLIENT SAMPLE IDENTIFICATION:	SAMPLE DATE	CANTEST ID	Fecal Coliform
1371-01	May 21/09	905210138	7
1371-02	May 21/09	905210139	470
1371-03	May 21/09	905210141	280
1371-04	May 21/09	905210143	3
1371-05	May 21/09	905210144	22
1371-06	May 21/09	905210145	140
1371-07	May 21/09	905210146	13
1371-08	May 21/09	905210147	11
1371-09	May 21/09	905210149	15
DETECTION LIMIT			1
UNITS			Col./100 mL

Col./100 mL = Colonies per 100 mL

Analysis Report

CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Water Samples

REPORTED TO: Capital Regional District
Environmental Programs
PO Box 1000
625 Fisgard St
Victoria, BC
V8W 2S6

Att'n: Shirley Lyons

cc: Golder Associates Ltd. 500-4260 Still Creek Dr Burnaby BC V5C 6C6
Att'n: E. Irving

CHAIN OF CUSTODY: 1371
PROJECT NUMBER: 09-1421-0028

NUMBER OF SAMPLES: 9

REPORT DATE: June 1, 2009

DATE SUBMITTED: May 21, 2009

GROUP NUMBER: 100521070

SAMPLE TYPE: Sea Water

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Anions in Water by Ion Chromatography - was determined based on Method 4110 in Standard Methods (21st Edition) and EPA Method 300.0 (Revision 2.1).

Ammonia in Water - was performed using Flow Injection Analysis where the aqueous sample is injected into a carrier stream, which merges a sodium hydroxide stream. Gaseous ammonia is formed, which diffuses through a gas permeable membrane into an indicator stream. This indicator stream is comprised of a mixture of acid-base indicators, which will react with the ammonia gas; resulting in a colour shift which is measured photometrically @ 590 nm.

Total Kjeldahl Nitrogen in Water - was determined based on Method 4500-N in Standard Methods (21st Edition) and Method X325 in the BC Laboratory Manual (2005).

Conventional Parameters - Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC V8Z 7X8): -
Analyses performed at Cantest's Victoria facility follow procedures based on those described in the most current editions of "British Columbia Environmental Laboratory Manual" (2005) and/or "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

(Continued)

CANTEST LTD.

David Nadler
Supervisor, CANTEST Victoria

REPORTED TO: Capital Regional District

REPORT DATE: June 1, 2009

GROUP NUMBER: 100521070

Mercury in Water - analysis was performed using procedures based on U. S. EPA Method 245.7, oxidative digestion using bromination, and analysis using Cold Vapour Atomic Fluorescence Spectroscopy.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis may be performed using either the MPN Method (reported as "Most Probable Number") or the Membrane Filtration (MF) Method (reported as "Colonies or CFU per unit volume"). Method selection is dependent upon factors including turbidity, microbial levels, etc.

Microbiological Parameters - analyses were performed using procedures based on those described in "B. C. Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater", 21st Edition. Analysis was performed at CANTEST Ltd. Victoria Laboratory (1104 - 4464 Markham Street, Victoria, BC, V8Z 7X8).

TEST RESULTS:

(See following pages)

LABORATORY CERTIFICATES

MAXAAM

Your Project #: 09-1421-0028
Your C.O.C. #: 1335

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/05/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A920553
Received: 2009/05/05, 08:00

Sample Matrix: Sea Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	1	N/A	2009/05/19		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	1	N/A	2009/05/18	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	1	N/A	2009/05/21	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	1	N/A	2009/05/18	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	1	N/A	2009/05/21	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	2009/05/15	2009/05/18	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	1	2009/05/15	2009/05/18	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	1	N/A	2009/05/05	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Elaine Cousins
21 May 2009 12:59:35 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A920553
Report Date: 2009/05/21

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

RESULTS OF CHEMICAL ANALYSES OF SEA WATER

Maxxam ID		O66227		
	Units	**1335-01**	**RDL**	**QC Batch**
Preparation				
Filter and HNO3 Preservation	N/A	FIELD	N/A	ONSITE
Misc. Inorganics				
Dissolved Hardness (CaCO3)	mg/L	<0.5	0.5	3107169

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A920553
Report Date: 2009/05/21

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O66227		
	Units	1335-01	RDL	QC Batch
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	ug/L	<10	10	3129905
Dissolved Antimony (Sb)	ug/L	<0.5	0.5	3129905
Dissolved Arsenic (As)	ug/L	<0.5	0.5	3129905
Dissolved Barium (Ba)	ug/L	<1	1	3129905
Dissolved Beryllium (Be)	ug/L	<1	1	3129905
Dissolved Bismuth (Bi)	ug/L	<1	1	3129905
Dissolved Boron (B)	ug/L	<50	50	3129905
Dissolved Cadmium (Cd)	ug/L	0.02	0.01	3134489
Dissolved Chromium (Cr)	ug/L	<0.5	0.5	3129905
Dissolved Cobalt (Co)	ug/L	<0.05	0.05	3134489
Dissolved Copper (Cu)	ug/L	0.30	0.05	3134489
Dissolved Iron (Fe)	ug/L	<1	1	3134489
Dissolved Lead (Pb)	ug/L	0.13	0.05	3134489
Dissolved Lithium (Li)	ug/L	<20	20	3129905
Dissolved Manganese (Mn)	ug/L	<0.2	0.2	3134489
Dissolved Molybdenum (Mo)	ug/L	<1	1	3129905
Dissolved Nickel (Ni)	ug/L	0.07	0.05	3134489
Dissolved Selenium (Se)	ug/L	<0.5	0.5	3129905
Dissolved Silicon (Si)	ug/L	<100	100	3129905
Dissolved Silver (Ag)	ug/L	<0.05	0.05	3129905
Dissolved Strontium (Sr)	ug/L	<10	10	3129905
Dissolved Thallium (Tl)	ug/L	<0.1	0.1	3129905
Dissolved Tin (Sn)	ug/L	<1	1	3129905
Dissolved Titanium (Ti)	ug/L	<10	10	3129905
Dissolved Uranium (U)	ug/L	<0.05	0.05	3129905
Dissolved Vanadium (V)	ug/L	<10	10	3129905
Dissolved Zinc (Zn)	ug/L	14.8(1)	0.5	3134489
Dissolved Calcium (Ca)	mg/L	<1	1	3131499
Dissolved Magnesium (Mg)	mg/L	<1	1	3131499
Dissolved Potassium (K)	mg/L	<1	1	3131499
Dissolved Sodium (Na)	mg/L	4	1	3131499
Dissolved Sulphur (S)	mg/L	<20	20	3131499

RDL = Reportable Detection Limit
(1) - dissolved > total, reanalyzed & confirmed. Possible trace level of field-filtered contamination on dissolved metal bottle or there is a discrepancy between samples taken.

Maxxam Job #: A920553
Report Date: 2009/05/21

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O66227		
	Units	1335-01	RDL	QC Batch
Total Metals by ICPMS				
Total Aluminum (Al)	ug/L	<10	10	3130219
Total Antimony (Sb)	ug/L	<0.5	0.5	3130219
Total Arsenic (As)	ug/L	<0.5	0.5	3130219
Total Barium (Ba)	ug/L	<1	1	3130219
Total Beryllium (Be)	ug/L	<1	1	3130219
Total Bismuth (Bi)	ug/L	<1	1	3130219
Total Boron (B)	ug/L	<50	50	3130219
Total Cadmium (Cd)	ug/L	<0.01	0.01	3134530
Total Chromium (Cr)	ug/L	<0.5	0.5	3130219
Total Cobalt (Co)	ug/L	<0.05	0.05	3134530
Total Copper (Cu)	ug/L	0.29	0.05	3134530
Total Iron (Fe)	ug/L	<1	1	3134530
Total Lead (Pb)	ug/L	0.10	0.05	3134530
Total Lithium (Li)	ug/L	<20	20	3130219
Total Manganese (Mn)	ug/L	<0.2	0.2	3134530
Total Molybdenum (Mo)	ug/L	<1	1	3130219
Total Nickel (Ni)	ug/L	0.18	0.05	3134530
Total Selenium (Se)	ug/L	<0.5	0.5	3130219
Total Silicon (Si)	ug/L	<100	100	3130219
Total Silver (Ag)	ug/L	<0.05	0.05	3130219
Total Strontium (Sr)	ug/L	<10	10	3130219
Total Thallium (Tl)	ug/L	<0.1	0.1	3130219
Total Tin (Sn)	ug/L	<1	1	3130219
Total Titanium (Ti)	ug/L	<10	10	3130219
Total Uranium (U)	ug/L	<0.05	0.05	3130219
Total Vanadium (V)	ug/L	<10	10	3130219
Total Zinc (Zn)	ug/L	11.8	0.5	3134530
Total Calcium (Ca)	mg/L	<1	1	3131498
Total Magnesium (Mg)	mg/L	<1	1	3131498
Total Potassium (K)	mg/L	<1	1	3131498
Total Sodium (Na)	mg/L	<1	1	3131498
Total Sulphur (S)	mg/L	<20	20	3131498

RDL = Reportable Detection Limit

Maxxam Job #: A920553
Report Date: 2009/05/21

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3129905	Dissolved Arsenic (As)	2009/05/18	98	75 - 125	96	75 - 125	<0.5	ug/L	NC	25
3129905	Dissolved Barium (Ba)	2009/05/18	97	75 - 125	107	75 - 125	<1	ug/L	NC	25
3129905	Dissolved Beryllium (Be)	2009/05/18	104	75 - 125	100	75 - 125	<1	ug/L	NC	25
3129905	Dissolved Chromium (Cr)	2009/05/18	94	75 - 125	99	75 - 125	<0.5	ug/L	NC	25
3129905	Dissolved Lithium (Li)	2009/05/18	101	75 - 125	103	75 - 125	<20	ug/L	NC	25
3129905	Dissolved Selenium (Se)	2009/05/18	100	75 - 125	96	75 - 125	<0.5	ug/L	NC	25
3129905	Dissolved Strontium (Sr)	2009/05/18	93	75 - 125	91	75 - 125	<10	ug/L	NC	25
3129905	Dissolved Titanium (Ti)	2009/05/18	87	75 - 125	92	75 - 125	<10	ug/L	NC	25
3129905	Dissolved Uranium (U)	2009/05/18	82	75 - 125	102	75 - 125	<0.05	ug/L	NC	25
3129905	Dissolved Vanadium (V)	2009/05/18	90	75 - 125	104	75 - 125	<10	ug/L	NC	25
3129905	Dissolved Aluminum (Al)	2009/05/18					<10	ug/L	NC	25
3129905	Dissolved Antimony (Sb)	2009/05/18					<0.5	ug/L	NC	25
3129905	Dissolved Bismuth (Bi)	2009/05/18					<1	ug/L	NC	25
3129905	Dissolved Boron (B)	2009/05/18					<50	ug/L	NC	25
3129905	Dissolved Molybdenum (Mo)	2009/05/18					<1	ug/L	NC	25
3129905	Dissolved Silicon (Si)	2009/05/18					<100	ug/L	NC	25
3129905	Dissolved Silver (Ag)	2009/05/18					<0.05	ug/L	NC	25
3129905	Dissolved Thallium (Tl)	2009/05/18					<0.1	ug/L	NC	25
3129905	Dissolved Tin (Sn)	2009/05/18					<1	ug/L	NC	25
3130219	Total Arsenic (As)	2009/05/18	97	75 - 125	94	75 - 125	<0.5	ug/L	NC	25
3130219	Total Barium (Ba)	2009/05/18	99	75 - 125	101	75 - 125	<1	ug/L	NC	25
3130219	Total Beryllium (Be)	2009/05/18	103	75 - 125	104	75 - 125	<1	ug/L	NC	25
3130219	Total Chromium (Cr)	2009/05/18	94	75 - 125	98	75 - 125	<0.5	ug/L	NC	25
3130219	Total Lithium (Li)	2009/05/18	101	75 - 125	103	75 - 125	<20	ug/L	NC	25
3130219	Total Selenium (Se)	2009/05/18	101	75 - 125	93	75 - 125	<0.5	ug/L	NC	25
3130219	Total Strontium (Sr)	2009/05/18	95	75 - 125	93	75 - 125	<10	ug/L	NC	25
3130219	Total Titanium (Ti)	2009/05/18	84	75 - 125	90	75 - 125	<10	ug/L	NC	25
3130219	Total Uranium (U)	2009/05/18	82	75 - 125	99	75 - 125	<0.05	ug/L	NC	25
3130219	Total Vanadium (V)	2009/05/18	90	75 - 125	107	75 - 125	<10	ug/L	NC	25
3130219	Total Aluminum (Al)	2009/05/18					<10	ug/L	NC	25
3130219	Total Antimony (Sb)	2009/05/18					<0.5	ug/L	NC	25
3130219	Total Bismuth (Bi)	2009/05/18					<1	ug/L	NC	25
3130219	Total Boron (B)	2009/05/18					<50	ug/L	NC	25
3130219	Total Molybdenum (Mo)	2009/05/18					<1	ug/L	NC	25
3130219	Total Silicon (Si)	2009/05/18					<100	ug/L	NC	25
3130219	Total Silver (Ag)	2009/05/18					<0.05	ug/L	NC	25
3130219	Total Thallium (Tl)	2009/05/18					<0.1	ug/L	NC	25
3130219	Total Tin (Sn)	2009/05/18					<1	ug/L	NC	25
3131498	Total Calcium (Ca)	2009/05/18					<1	mg/L	NC	25
3131498	Total Magnesium (Mg)	2009/05/18					<1	mg/L	NC	25

Maxxam Job #: A920553
Report Date: 2009/05/21

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3131498	Total Potassium (K)	2009/05/18					<1	mg/L	NC	25
3131498	Total Sodium (Na)	2009/05/18					<1	mg/L	NC	25
3131498	Total Sulphur (S)	2009/05/18					<20	mg/L	NC	25
3131499	Dissolved Calcium (Ca)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Magnesium (Mg)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Potassium (K)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Sodium (Na)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Sulphur (S)	2009/05/18					<20	mg/L	NC	25
3134489	Dissolved Cadmium (Cd)	2009/05/21	91	75 - 125	95	75 - 125	<0.01	ug/L	7.4	25
3134489	Dissolved Cobalt (Co)	2009/05/21	96	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Copper (Cu)	2009/05/21	91	75 - 125	99	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Lead (Pb)	2009/05/21	91	75 - 125	94	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Nickel (Ni)	2009/05/21	93	75 - 125	100	75 - 125	0.10, RDL=0.05	ug/L	1.4	25
3134489	Dissolved Zinc (Zn)	2009/05/21	87	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3134489	Dissolved Iron (Fe)	2009/05/21					<1	ug/L	NC	25
3134489	Dissolved Manganese (Mn)	2009/05/21					<0.2	ug/L	NC	25
3134530	Total Cadmium (Cd)	2009/05/21	89	75 - 125	92	75 - 125	<0.01	ug/L	0.6	25
3134530	Total Cobalt (Co)	2009/05/21	95	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3134530	Total Copper (Cu)	2009/05/21	83	75 - 125	94	75 - 125	<0.05	ug/L	NC	25
3134530	Total Lead (Pb)	2009/05/21	87	75 - 125	90	75 - 125	<0.05	ug/L	NC	25
3134530	Total Nickel (Ni)	2009/05/21	89	75 - 125	96	75 - 125	<0.05	ug/L	6.1	25
3134530	Total Zinc (Zn)	2009/05/21	80	75 - 125	99	75 - 125	<0.5	ug/L	NC	25
3134530	Total Iron (Fe)	2009/05/21					<1	ug/L	3.6	25
3134530	Total Manganese (Mn)	2009/05/21					<0.2	ug/L	6.7	25

N/A = Not Applicable
NC = Non-calculable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference

Golder Associates

2640 Douglas Street
Victoria, British Columbia, Canada V8T 4M1
Telephone 250-881-7372 Fax 250-881-7470

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

№ 1335 page 1 of 1

Project Number: 09-1421-0028		Laboratory Name: Maxxam	
[redacted]		Address: 8577 Commerce Ct., Burnaby	
Golder Contact: E. Irving	Golder E-mail Address: eirving @golder.com	Telephone/Fax: 604-444-4808	Contact: Elaine Cousins

Office the final reports should be sent to: Quote: A80018

- [x] 500 – 4260 Still Creek Dr. Burnaby, B.C. V5C 6C6 Tel: 604-298-6623 Fax: 604-298-5253
- [ ] 202 – 2790 Gladwin Road Abbotsford, B.C. V2T 4S8 Tel: 604-850-8786 Fax: 604-850-8756
- [ ] 2640 Douglas Street Victoria, B.C. V8T 4M1 Tel: 250-881-7372 Fax: 250-881-7470

Metals by Chelation

Analyses Required

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D / M / Y)	[redacted]	Number of Containers	Total Metals Marine Method	Dissolved Metals Marine Method	Major Cations Hardness								RUSH	Remarks (over) Attn Elaine Cousins
1335-01		H2O			2	✓	✓	✓									DLS as per quote
-02																	"
-03																	"
-04																	
-05																	
-06																	
-07																	
-08																	
-09																	
-10																	
-11																	
-12																	

Sampler's Signature: [signature]	Relinquished by: Signature [signature]	Company Golder.	Date May 5/09	Time 0800.	Received by: Signature	Company
Sample Storage (°C) 4°C	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Comments:	Method of Shipment:	Waybill No.:		Received for Lab by: Kurtis Vallee	Date May 5th/09	Time 8:00
	Shipped by:	Shipment Condition: Seal Intact:		Temp (°C) 7, 8, 7	Cooler opened by:	Date May 5th/09	Time 8:00

WHITE: Golder Copy YELLOW: Lab Copy PINK: Lab Returns with Final Report

Your Project #: 09-1421-0028
Your C.O.C. #: 1334

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/05/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A920591
Received: 2009/05/05, 08:00

Sample Matrix: Sea Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	3	N/A	2009/05/19		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2009/05/18	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	3	N/A	2009/05/21	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	3	N/A	2009/05/18	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	3	N/A	2009/05/21	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2009/05/15	2009/05/18	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	3	2009/05/15	2009/05/18	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	3	N/A	2009/05/05	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A920591
Report Date: 2009/05/22

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

RESULTS OF CHEMICAL ANALYSES OF SEA WATER

Maxxam ID		O66374	O66375	O66376		
	Units	**1334-01**	**1334-02**	**1334-03**	**RDL**	**QC Batch**
Preparation						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	N/A	ONSITE
Misc. Inorganics						
Dissolved Hardness (CaCO3)	mg/L	6420	6390	6410	0.5	3107169

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A920591
Report Date: 2009/05/22

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O66374	O66375	O66376		
	Units	**1334-01**	**1334-02**	**1334-03**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	<10	<10	<10	10	3129905
Dissolved Antimony (Sb)	ug/L	1.0	1.2	1.0	0.5	3129905
Dissolved Arsenic (As)	ug/L	1.8	2.0	1.6	0.5	3129905
Dissolved Barium (Ba)	ug/L	8	8	8	1	3129905
Dissolved Beryllium (Be)	ug/L	<1	<1	<1	1	3129905
Dissolved Bismuth (Bi)	ug/L	<1	<1	<1	1	3129905
Dissolved Boron (B)	ug/L	3670	3750	3820	50	3129905
Dissolved Cadmium (Cd)	ug/L	0.09	0.08	0.08	0.01	3134489
Dissolved Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3129905
Dissolved Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3134489
Dissolved Copper (Cu)	ug/L	0.24	0.25	0.23	0.05	3134489
Dissolved Iron (Fe)	ug/L	1	1	2	1	3134489
Dissolved Lead (Pb)	ug/L	<0.05	<0.05	0.06	0.05	3134489
Dissolved Lithium (Li)	ug/L	167	170	170	20	3129905
Dissolved Manganese (Mn)	ug/L	0.8	0.8	0.8	0.2	3134489
Dissolved Molybdenum (Mo)	ug/L	9	10	10	1	3129905
Dissolved Nickel (Ni)	ug/L	0.58	0.38	0.48	0.05	3134489
Dissolved Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3129905
Dissolved Silicon (Si)	ug/L	1270	1380	1350	100	3129905
Dissolved Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3129905
Dissolved Strontium (Sr)	ug/L	6720	6840	6900	10	3129905
Dissolved Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3129905
Dissolved Tin (Sn)	ug/L	<1	<1	<1	1	3129905
Dissolved Titanium (Ti)	ug/L	<10	<10	<10	10	3129905
Dissolved Uranium (U)	ug/L	2.88	3.00	2.75	0.05	3129905
Dissolved Vanadium (V)	ug/L	<10	<10	<10	10	3129905
Dissolved Zinc (Zn)	ug/L	2.0	1.8	1.9	0.5	3134489
Dissolved Calcium (Ca)	mg/L	460	450	450	1	3131499
Dissolved Magnesium (Mg)	mg/L	1280	1280	1280	1	3131499
Dissolved Potassium (K)	mg/L	392	382	383	1	3131499
Dissolved Sodium (Na)	mg/L	10100	10000	10200	1	3131499
Dissolved Sulphur (S)	mg/L	1040	1030	1040	20	3131499

RDL = Reportable Detection Limit

Maxxam Job #: A920591
Report Date: 2009/05/22

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O66374	O66375	O66376		
	Units	**1334-01**	**1334-02**	**1334-03**	**RDL**	**QC Batch**
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	18	21	19	10	3130219
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3130219
Total Arsenic (As)	ug/L	2.1	1.8	1.7	0.5	3130219
Total Barium (Ba)	ug/L	8	8	8	1	3130219
Total Beryllium (Be)	ug/L	<1	<1	<1	1	3130219
Total Bismuth (Bi)	ug/L	<1	<1	<1	1	3130219
Total Boron (B)	ug/L	3740	3820	3860	50	3130219
Total Cadmium (Cd)	ug/L	0.09	0.08	0.07	0.01	3134530
Total Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3130219
Total Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3134530
Total Copper (Cu)	ug/L	0.27	0.24	0.21	0.05	3134530
Total Iron (Fe)	ug/L	18	17	18	1	3134530
Total Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3134530
Total Lithium (Li)	ug/L	169	170	172	20	3130219
Total Manganese (Mn)	ug/L	1.5	1.3	1.2	0.2	3134530
Total Molybdenum (Mo)	ug/L	10	10	10	1	3130219
Total Nickel (Ni)	ug/L	0.83	0.34	0.64	0.05	3134530
Total Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3130219
Total Silicon (Si)	ug/L	1430	1420	1450	100	3130219
Total Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3130219
Total Strontium (Sr)	ug/L	6940	6920	6920	10	3130219
Total Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3130219
Total Tin (Sn)	ug/L	<1	<1	<1	1	3130219
Total Titanium (Ti)	ug/L	<10	<10	<10	10	3130219
Total Uranium (U)	ug/L	2.64	2.64	2.82	0.05	3130219
Total Vanadium (V)	ug/L	<10	<10	<10	10	3130219
Total Zinc (Zn)	ug/L	1.9(1)	1.2	1.3	0.5	3134530
Total Calcium (Ca)	mg/L	449	451	443	1	3131498
Total Magnesium (Mg)	mg/L	1230	1260	1250	1	3131498
Total Potassium (K)	mg/L	381	380	375	1	3131498
Total Sodium (Na)	mg/L	10300	8860	9960	1	3131498
Total Sulphur (S)	mg/L	1070	1050	1040	20	3131498

RDL = Reportable Detection Limit
(1) - Zn result entered from dilution run done on 05/18. JC

Maxxam Job #: A920591
Report Date: 2009/05/22

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3129905	Dissolved Arsenic (As)	2009/05/18	98	75 - 125	96	75 - 125	<0.5	ug/L	NC	25
3129905	Dissolved Barium (Ba)	2009/05/18	97	75 - 125	107	75 - 125	<1	ug/L	NC	25
3129905	Dissolved Beryllium (Be)	2009/05/18	104	75 - 125	100	75 - 125	<1	ug/L	NC	25
3129905	Dissolved Chromium (Cr)	2009/05/18	94	75 - 125	99	75 - 125	<0.5	ug/L	NC	25
3129905	Dissolved Lithium (Li)	2009/05/18	101	75 - 125	103	75 - 125	<20	ug/L	NC	25
3129905	Dissolved Selenium (Se)	2009/05/18	100	75 - 125	96	75 - 125	<0.5	ug/L	NC	25
3129905	Dissolved Strontium (Sr)	2009/05/18	93	75 - 125	91	75 - 125	<10	ug/L	NC	25
3129905	Dissolved Titanium (Ti)	2009/05/18	87	75 - 125	92	75 - 125	<10	ug/L	NC	25
3129905	Dissolved Uranium (U)	2009/05/18	82	75 - 125	102	75 - 125	<0.05	ug/L	NC	25
3129905	Dissolved Vanadium (V)	2009/05/18	90	75 - 125	104	75 - 125	<10	ug/L	NC	25
3129905	Dissolved Aluminum (Al)	2009/05/18					<10	ug/L	NC	25
3129905	Dissolved Antimony (Sb)	2009/05/18					<0.5	ug/L	NC	25
3129905	Dissolved Bismuth (Bi)	2009/05/18					<1	ug/L	NC	25
3129905	Dissolved Boron (B)	2009/05/18					<50	ug/L	NC	25
3129905	Dissolved Molybdenum (Mo)	2009/05/18					<1	ug/L	NC	25
3129905	Dissolved Silicon (Si)	2009/05/18					<100	ug/L	NC	25
3129905	Dissolved Silver (Ag)	2009/05/18					<0.05	ug/L	NC	25
3129905	Dissolved Thallium (Tl)	2009/05/18					<0.1	ug/L	NC	25
3129905	Dissolved Tin (Sn)	2009/05/18					<1	ug/L	NC	25
3130219	Total Arsenic (As)	2009/05/18	97	75 - 125	94	75 - 125	<0.5	ug/L	NC	25
3130219	Total Barium (Ba)	2009/05/18	99	75 - 125	101	75 - 125	<1	ug/L	NC	25
3130219	Total Beryllium (Be)	2009/05/18	103	75 - 125	104	75 - 125	<1	ug/L	NC	25
3130219	Total Chromium (Cr)	2009/05/18	94	75 - 125	98	75 - 125	<0.5	ug/L	NC	25
3130219	Total Lithium (Li)	2009/05/18	101	75 - 125	103	75 - 125	<20	ug/L	NC	25
3130219	Total Selenium (Se)	2009/05/18	101	75 - 125	93	75 - 125	<0.5	ug/L	NC	25
3130219	Total Strontium (Sr)	2009/05/18	95	75 - 125	93	75 - 125	<10	ug/L	NC	25
3130219	Total Titanium (Ti)	2009/05/18	84	75 - 125	90	75 - 125	<10	ug/L	NC	25
3130219	Total Uranium (U)	2009/05/18	82	75 - 125	99	75 - 125	<0.05	ug/L	NC	25
3130219	Total Vanadium (V)	2009/05/18	90	75 - 125	107	75 - 125	<10	ug/L	NC	25
3130219	Total Aluminum (Al)	2009/05/18					<10	ug/L	NC	25
3130219	Total Antimony (Sb)	2009/05/18					<0.5	ug/L	NC	25
3130219	Total Bismuth (Bi)	2009/05/18					<1	ug/L	NC	25
3130219	Total Boron (B)	2009/05/18					<50	ug/L	NC	25
3130219	Total Molybdenum (Mo)	2009/05/18					<1	ug/L	NC	25
3130219	Total Silicon (Si)	2009/05/18					<100	ug/L	NC	25
3130219	Total Silver (Ag)	2009/05/18					<0.05	ug/L	NC	25
3130219	Total Thallium (Tl)	2009/05/18					<0.1	ug/L	NC	25
3130219	Total Tin (Sn)	2009/05/18					<1	ug/L	NC	25
3131498	Total Calcium (Ca)	2009/05/18					<1	mg/L	NC	25
3131498	Total Magnesium (Mg)	2009/05/18					<1	mg/L	NC	25

Maxxam Job #: A920591
Report Date: 2009/05/22

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3131498	Total Potassium (K)	2009/05/18					<1	mg/L	NC	25
3131498	Total Sodium (Na)	2009/05/18					<1	mg/L	NC	25
3131498	Total Sulphur (S)	2009/05/18					<20	mg/L	NC	25
3131499	Dissolved Calcium (Ca)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Magnesium (Mg)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Potassium (K)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Sodium (Na)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Sulphur (S)	2009/05/18					<20	mg/L	NC	25
3134489	Dissolved Cadmium (Cd)	2009/05/21	91	75 - 125	95	75 - 125	<0.01	ug/L	7.4	25
3134489	Dissolved Cobalt (Co)	2009/05/21	96	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Copper (Cu)	2009/05/21	91	75 - 125	99	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Lead (Pb)	2009/05/21	91	75 - 125	94	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Nickel (Ni)	2009/05/21	93	75 - 125	100	75 - 125	0.10, RDL=0.05	ug/L	1.4	25
3134489	Dissolved Zinc (Zn)	2009/05/21	87	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3134489	Dissolved Iron (Fe)	2009/05/21					<1	ug/L	NC	25
3134489	Dissolved Manganese (Mn)	2009/05/21					<0.2	ug/L	NC	25
3134530	Total Cadmium (Cd)	2009/05/21	89	75 - 125	92	75 - 125	<0.01	ug/L	0.6	25
3134530	Total Cobalt (Co)	2009/05/21	95	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3134530	Total Copper (Cu)	2009/05/21	83	75 - 125	94	75 - 125	<0.05	ug/L	NC	25
3134530	Total Lead (Pb)	2009/05/21	87	75 - 125	90	75 - 125	<0.05	ug/L	NC	25
3134530	Total Nickel (Ni)	2009/05/21	89	75 - 125	96	75 - 125	<0.05	ug/L	5.5	25
3134530	Total Zinc (Zn)	2009/05/21	80	75 - 125	99	75 - 125	<0.5	ug/L	NC	25
3134530	Total Iron (Fe)	2009/05/21					<1	ug/L	3.6	25
3134530	Total Manganese (Mn)	2009/05/21					<0.2	ug/L	6.7	25

N/A = Not Applicable
NC = Non-calculable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

№ 1334 page 1 of 1

Golder Associates
2640 Douglas Street
Victoria, British Columbia, Canada V8T 4M1
Telephone 250-881-7372 Fax 250-881-7470

Project Number:		Laboratory Name:
09-1421-0028		Maxxam
		Address: 8577 Commerce Ct. Burnaby
Golder Contact: E. Irving	Golder E-mail Address: eirving @golder.com	Telephone/Fax: 604-444-4808
		Contact: Elaine Cousins

Office the final reports should be sent to: QUOTE : A800R

- ☒ 500 – 4260 Still Creek Dr. Burnaby, B.C. V5C 6C6 Tel: 604-298-6623 Fax: 604-298-5253
- ☐ 202 – 2790 Gladwin Road Abbotsford, B.C. V2T 4S8 Tel: 604-850-8786 Fax: 604-850-8756
- ☐ 2640 Douglas Street Victoria, B.C. V8T 4M1 Tel: 250-881-7372 Fax: 250-881-7470

Metals by Chelation

Attn Elaine Cousins

Analyses Required

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D / M / Y)	[redacted]	Number of Containers	Total Metals	Marine Methods Dissolved Metals	Marine Methods Major Cations Hardness								RUSH	Remarks (over)
1334-01		H_2O			2	✓	✓	✓									AS AS PER QUOTE
1334-02		"			2	✓	✓	✓									"
1334-03		"			2	✓	✓	✓									"
-04																	
-05																	
-06																	
-07																	
-08																	
-09																	
-10																	
-11																	
-12																	

Sampler's Signature: Virginia Arnold	Relinquished by: Signature	Company Golder	Date May 5/09.	Time 0800	Received by: Signature	Company
Sample Storage (°C) 4°C	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company

Comments:	Method of Shipment:	Waybill No.:	Received for Lab by: Kurtis Vallee	Date May 5th/09	Time 8:00
	Shipped by:	Shipment Condition: Seal Intact:	Temp (°C) 7.8.7	Cooler opened by: KV	Date May 5th/09	Time 8:00

WHITE: Golder Copy YELLOW: Lab Copy PINK: Lab Returns with Final Report

Your Project #: 09-1421-0028
Your C.O.C. #: 1331

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/05/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A921057
Received: 2009/05/07, 07:30

Sample Matrix: Sea Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	3	N/A	2009/05/19		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	2	N/A	2009/05/18	BRN SOP-00206 R7.0	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	1	N/A	2009/05/19	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	3	N/A	2009/05/21	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	2	N/A	2009/05/18	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	1	N/A	2009/05/19	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	3	N/A	2009/05/21	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2009/05/15	2009/05/18	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	3	2009/05/15	2009/05/18	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	3	N/A	2009/05/07	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Elaine Cousins
22 May 2009 11:47:18 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A921057
Report Date: 2009/05/22

Golder Associates Ltd.
Client Project #: 09-1421-0028

RESULTS OF CHEMICAL ANALYSES OF SEA WATER

Maxxam ID		O68906	O68907	O68908		
Sampling Date		2009/05/05	2009/05/05	2009/05/05		
	Units	**1331-01**	**1331-02**	**1331-03**	**RDL**	**QC Batch**
Preparation						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	N/A	ONSITE
Misc. Inorganics						
Dissolved Hardness (CaCO3)	mg/L	6160	6140	6090	0.5	3107169

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A921057
Report Date: 2009/05/22

Golder Associates Ltd.
Client Project #: 09-1421-0028

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O68906	O68907	O68908		
Sampling Date		2009/05/05	2009/05/05	2009/05/05		
	Units	1331-01	1331-02	1331-03	RDL	QC Batch
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	<10	<10	<10	10	3129905
Dissolved Antimony (Sb)	ug/L	1.0	0.8	1.1	0.5	3129905
Dissolved Arsenic (As)	ug/L	1.8	1.7	1.5	0.5	3129905
Dissolved Barium (Ba)	ug/L	9	8	8	1	3129905
Dissolved Beryllium (Be)	ug/L	<1	<1	<1	1	3129905
Dissolved Bismuth (Bi)	ug/L	<1	<1	<1	1	3129905
Dissolved Boron (B)	ug/L	3590	3730	3640	50	3129905
Dissolved Cadmium (Cd)	ug/L	0.08	0.08	0.07	0.01	3134489
Dissolved Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3129905
Dissolved Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3134489
Dissolved Copper (Cu)	ug/L	0.28	0.31	0.28	0.05	3134489
Dissolved Iron (Fe)	ug/L	2	3	2	1	3134489
Dissolved Lead (Pb)	ug/L	<0.05	0.08	<0.05	0.05	3134489
Dissolved Lithium (Li)	ug/L	161	164	161	20	3129905
Dissolved Manganese (Mn)	ug/L	1.6	1.6	1.4	0.2	3134489
Dissolved Molybdenum (Mo)	ug/L	10	10	10	1	3129905
Dissolved Nickel (Ni)	ug/L	0.55	0.40	0.42	0.05	3134489
Dissolved Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3129905
Dissolved Silicon (Si)	ug/L	1180	1210	1320	100	3129905
Dissolved Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3129905
Dissolved Strontium (Sr)	ug/L	6510	6580	6580	10	3129905
Dissolved Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3129905
Dissolved Tin (Sn)	ug/L	<1	<1	<1	1	3129905
Dissolved Titanium (Ti)	ug/L	<10	<10	<10	10	3129905
Dissolved Uranium (U)	ug/L	3.10	2.99	3.20	0.05	3129905
Dissolved Vanadium (V)	ug/L	<10	<10	<10	10	3129905
Dissolved Zinc (Zn)	ug/L	1.1	2.3	0.9	0.5	3134489
Dissolved Calcium (Ca)	mg/L	429	425	422	1	3131499
Dissolved Magnesium (Mg)	mg/L	1240	1230	1220	1	3131499
Dissolved Potassium (K)	mg/L	364	361	358	1	3131499
Dissolved Sodium (Na)	mg/L	9680	9660	9580	1	3131499
Dissolved Sulphur (S)	mg/L	990	990	958	20	3131499

RDL = Reportable Detection Limit

Maxxam Job #: A921057
Report Date: 2009/05/22

Golder Associates Ltd.
Client Project #: 09-1421-0028

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O68906	O68907	O68908		
Sampling Date		2009/05/05	2009/05/05	2009/05/05		
	Units	**1331-01**	**1331-02**	**1331-03**	**RDL**	**QC Batch**
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	20	17	19	10	3130219
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3130219
Total Arsenic (As)	ug/L	1.3	1.7	1.6	0.5	3130219
Total Barium (Ba)	ug/L	9	9	9	1	3130219
Total Beryllium (Be)	ug/L	<1	<1	<1	1	3130219
Total Bismuth (Bi)	ug/L	<1	<1	<1	1	3130219
Total Boron (B)	ug/L	3880	3870	3840	50	3130219
Total Cadmium (Cd)	ug/L	0.08	0.07	0.08	0.01	3134530
Total Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3130219
Total Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3134530
Total Copper (Cu)	ug/L	0.28	0.30	0.27	0.05	3134530
Total Iron (Fe)	ug/L	26	31	33	1	3134530
Total Lead (Pb)	ug/L	0.08	<0.05	0.09	0.05	3134530
Total Lithium (Li)	ug/L	170	169	170	20	3130219
Total Manganese (Mn)	ug/L	2.2	2.1	2.0	0.2	3134530
Total Molybdenum (Mo)	ug/L	10	10	10	1	3130219
Total Nickel (Ni)	ug/L	0.46	0.49	0.43	0.05	3134530
Total Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3130219
Total Silicon (Si)	ug/L	1260	1310	1360	100	3130219
Total Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3130219
Total Strontium (Sr)	ug/L	6820	6740	6740	10	3130219
Total Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3130219
Total Tin (Sn)	ug/L	<1	<1	<1	1	3130219
Total Titanium (Ti)	ug/L	<10	<10	<10	10	3130219
Total Uranium (U)	ug/L	2.65	2.56	2.72	0.05	3130219
Total Vanadium (V)	ug/L	<10	<10	<10	10	3130219
Total Zinc (Zn)	ug/L	0.9	0.8	1.0	0.5	3134530
Total Calcium (Ca)	mg/L	439	437	438	1	3131498
Total Magnesium (Mg)	mg/L	1250	1230	1240	1	3131498
Total Potassium (K)	mg/L	373	371	374	1	3131498
Total Sodium (Na)	mg/L	9530	9510	9660	1	3131498
Total Sulphur (S)	mg/L	1030	1020	1040	20	3131498

RDL = Reportable Detection Limit

Maxxam Job #: A921057
Report Date: 2009/05/22

Golder Associates Ltd.
Client Project #: 09-1421-0028

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3129905	Dissolved Arsenic (As)	2009/05/18	98	75 - 125	96	75 - 125	<0.5	ug/L	NC	25
3129905	Dissolved Barium (Ba)	2009/05/18	97	75 - 125	107	75 - 125	<1	ug/L	NC	25
3129905	Dissolved Beryllium (Be)	2009/05/18	104	75 - 125	100	75 - 125	<1	ug/L	NC	25
3129905	Dissolved Chromium (Cr)	2009/05/18	94	75 - 125	99	75 - 125	<0.5	ug/L	NC	25
3129905	Dissolved Lithium (Li)	2009/05/18	101	75 - 125	103	75 - 125	<20	ug/L	NC	25
3129905	Dissolved Selenium (Se)	2009/05/18	100	75 - 125	96	75 - 125	<0.5	ug/L	NC	25
3129905	Dissolved Strontium (Sr)	2009/05/18	93	75 - 125	91	75 - 125	<10	ug/L	NC	25
3129905	Dissolved Titanium (Ti)	2009/05/18	87	75 - 125	92	75 - 125	<10	ug/L	NC	25
3129905	Dissolved Uranium (U)	2009/05/18	82	75 - 125	102	75 - 125	<0.05	ug/L	NC	25
3129905	Dissolved Vanadium (V)	2009/05/18	90	75 - 125	104	75 - 125	<10	ug/L	NC	25
3129905	Dissolved Aluminum (Al)	2009/05/18					<10	ug/L	NC	25
3129905	Dissolved Antimony (Sb)	2009/05/18					<0.5	ug/L	NC	25
3129905	Dissolved Bismuth (Bi)	2009/05/18					<1	ug/L	NC	25
3129905	Dissolved Boron (B)	2009/05/18					<50	ug/L	NC	25
3129905	Dissolved Molybdenum (Mo)	2009/05/18					<1	ug/L	NC	25
3129905	Dissolved Silicon (Si)	2009/05/18					<100	ug/L	NC	25
3129905	Dissolved Silver (Ag)	2009/05/18					<0.05	ug/L	NC	25
3129905	Dissolved Thallium (Tl)	2009/05/18					<0.1	ug/L	NC	25
3129905	Dissolved Tin (Sn)	2009/05/18					<1	ug/L	NC	25
3130219	Total Arsenic (As)	2009/05/18	97	75 - 125	94	75 - 125	<0.5	ug/L	NC	25
3130219	Total Barium (Ba)	2009/05/18	99	75 - 125	101	75 - 125	<1	ug/L	NC	25
3130219	Total Beryllium (Be)	2009/05/18	103	75 - 125	104	75 - 125	<1	ug/L	NC	25
3130219	Total Chromium (Cr)	2009/05/18	94	75 - 125	98	75 - 125	<0.5	ug/L	NC	25
3130219	Total Lithium (Li)	2009/05/18	101	75 - 125	103	75 - 125	<20	ug/L	NC	25
3130219	Total Selenium (Se)	2009/05/18	101	75 - 125	93	75 - 125	<0.5	ug/L	NC	25
3130219	Total Strontium (Sr)	2009/05/18	95	75 - 125	93	75 - 125	<10	ug/L	NC	25
3130219	Total Titanium (Ti)	2009/05/18	84	75 - 125	90	75 - 125	<10	ug/L	NC	25
3130219	Total Uranium (U)	2009/05/18	82	75 - 125	99	75 - 125	<0.05	ug/L	NC	25
3130219	Total Vanadium (V)	2009/05/18	90	75 - 125	107	75 - 125	<10	ug/L	NC	25
3130219	Total Aluminum (Al)	2009/05/18					<10	ug/L	NC	25
3130219	Total Antimony (Sb)	2009/05/18					<0.5	ug/L	NC	25
3130219	Total Bismuth (Bi)	2009/05/18					<1	ug/L	NC	25
3130219	Total Boron (B)	2009/05/18					<50	ug/L	NC	25
3130219	Total Molybdenum (Mo)	2009/05/18					<1	ug/L	NC	25
3130219	Total Silicon (Si)	2009/05/18					<100	ug/L	NC	25
3130219	Total Silver (Ag)	2009/05/18					<0.05	ug/L	NC	25
3130219	Total Thallium (Tl)	2009/05/18					<0.1	ug/L	NC	25
3130219	Total Tin (Sn)	2009/05/18					<1	ug/L	NC	25
3131498	Total Calcium (Ca)	2009/05/18					<1	mg/L	NC	25
3131498	Total Magnesium (Mg)	2009/05/18					<1	mg/L	NC	25

Maxxam Job #: A921057
Report Date: 2009/05/22

Golder Associates Ltd.
Client Project #: 09-1421-0028

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3131498	Total Potassium (K)	2009/05/18					<1	mg/L	NC	25
3131498	Total Sodium (Na)	2009/05/18					<1	mg/L	NC	25
3131498	Total Sulphur (S)	2009/05/18					<20	mg/L	NC	25
3131499	Dissolved Calcium (Ca)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Magnesium (Mg)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Potassium (K)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Sodium (Na)	2009/05/18					<1	mg/L	NC	25
3131499	Dissolved Sulphur (S)	2009/05/18					<20	mg/L	NC	25
3134489	Dissolved Cadmium (Cd)	2009/05/21	91	75 - 125	95	75 - 125	<0.01	ug/L	7.4	25
3134489	Dissolved Cobalt (Co)	2009/05/21	96	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Copper (Cu)	2009/05/21	91	75 - 125	99	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Lead (Pb)	2009/05/21	91	75 - 125	94	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Nickel (Ni)	2009/05/21	93	75 - 125	100	75 - 125	0.10, RDL=0.05	ug/L	1.4	25
3134489	Dissolved Zinc (Zn)	2009/05/21	87	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3134489	Dissolved Iron (Fe)	2009/05/21					<1	ug/L	NC	25
3134489	Dissolved Manganese (Mn)	2009/05/21					<0.2	ug/L	NC	25
3134530	Total Cadmium (Cd)	2009/05/21	89	75 - 125	92	75 - 125	<0.01	ug/L	0.6	25
3134530	Total Cobalt (Co)	2009/05/21	95	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3134530	Total Copper (Cu)	2009/05/21	83	75 - 125	94	75 - 125	<0.05	ug/L	NC	25
3134530	Total Lead (Pb)	2009/05/21	87	75 - 125	90	75 - 125	<0.05	ug/L	NC	25
3134530	Total Nickel (Ni)	2009/05/21	89	75 - 125	96	75 - 125	<0.05	ug/L	5.5	25
3134530	Total Zinc (Zn)	2009/05/21	80	75 - 125	99	75 - 125	<0.5	ug/L	NC	25
3134530	Total Iron (Fe)	2009/05/21					<1	ug/L	3.6	25
3134530	Total Manganese (Mn)	2009/05/21					<0.2	ug/L	6.7	25

N/A = Not Applicable
NC = Non-calculable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference

A921057

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

№ 1331 page 1 of 1

Golder Associates

2640 Douglas Street
Victoria, British Columbia, Canada V8T 4M1
Telephone 250-881-7372 Fax 250-881-7470

Project Number:		Laboratory Name:
09-1421-0028		Maxxam
		Address: 8577 Commerce Ct., Burnaby
Golder Contact: E. Irving	Golder E-mail Address: eirving @golder.com	Telephone/Fax: 604 444 4808
		Contact: Elaine Cousins

Office the final reports should be sent to:

- ☒ 500 – 4260 Still Creek Dr., Burnaby, B.C., V5C 6C6, Tel: 604-298-6623, Fax: 604-298-5253
- ☐ 202 – 2790 Gladwin Road, Abbotsford, B.C., V2T 4S8, Tel: 604-850-8786, Fax: 604-850-8756
- ☐ 2640 Douglas Street, Victoria, B.C., V8T 4M1, Tel: 250-881-7372, Fax: 250-881-7470

Quote: A80018

Metals by Chelation

Analyses Required

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D / M / Y)	[redacted]	Number of Containers	Total Metals	Marine Method Dissolved Metals	Marine Method Major Cations Hardness							RUSH	Remarks (over)
1331 -01		H_2O	05/05/08		2	✓	✓	✓								DLS AS PER QUOTE
1331 -02		"	"		2	✓	✓	✓								"
1331 -03		"	"		2	✓	✓	✓								"
-04																
-05																
-06																
-07																
-08																
-09																
-10																
-11																
-12																

Attn ELAINE COUSINS

Sampler's Signature: Virginia Chant	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Sample Storage (°C) 4°C	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company

Comments:	Method of Shipment:	Waybill No.: D0078 26587	Received for Lab by:	Date	Time
	Shipped by: DHL	Shipment Condition: Seal Intact:	Temp (°C) 4.5.8	Cooler opened by:	Date May 7/09 Time 7:30

WHITE: Golder Copy YELLOW: Lab Copy PINK: Lab Returns with Final Report

Your Project #: 09-1421-0028
Your C.O.C. #: 1369

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/05/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A923245
Received: 2009/05/15, 07:20

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	4	N/A	2009/05/26		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	4	N/A	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	4	N/A	2009/05/21	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	4	N/A	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	4	N/A	2009/05/21	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	4	2009/05/22	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	4	2009/05/22	2009/05/25	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	4	N/A	2009/05/19	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A923245
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		O83403	O83404	O83405	O83406		
Sampling Date		2009/05/14	2009/05/14	2009/05/14	2009/05/14		
	Units	**1369-01**	**1369-02**	**1369-03**	**1369-04**	**RDL**	**QC Batch**
Preparation							
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	N/A	ONSITE
Misc. Inorganics							
Dissolved Hardness (CaCO3)	mg/L	7040	7500	7610	<0.5	0.5	3132716

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A923245
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		O83403	O83404	O83405	O83406		
Sampling Date		2009/05/14	2009/05/14	2009/05/14	2009/05/14		
	Units	**1369-01**	**1369-02**	**1369-03**	**1369-04**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS							
Dissolved Aluminum (Al)	ug/L	31	<10	<10	<10	10	3142915
Dissolved Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Arsenic (As)	ug/L	2.0	1.9	2.1	<0.5	0.5	3142915
Dissolved Barium (Ba)	ug/L	8	8	8	2	1	3142915
Dissolved Beryllium (Be)	ug/L	<1	<1	<1	<1	1	3142915
Dissolved Bismuth (Bi)	ug/L	<1	<1	<1	<1	1	3142915
Dissolved Boron (B)	ug/L	4130	4340	4420	<50	50	3142915
Dissolved Cadmium (Cd)	ug/L	0.08	0.08	0.09	<0.01	0.01	3134489
Dissolved Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	<0.05	0.05	3134489
Dissolved Copper (Cu)	ug/L	0.51	0.22	0.29	<0.05	0.05	3134489
Dissolved Iron (Fe)	ug/L	2	1	2	<1	1	3134489
Dissolved Lead (Pb)	ug/L	<0.05	0.12	0.05	<0.05	0.05	3134489
Dissolved Lithium (Li)	ug/L	181	191	195	<20	20	3142915
Dissolved Manganese (Mn)	ug/L	1.0	0.8	0.8	<0.2	0.2	3134489
Dissolved Molybdenum (Mo)	ug/L	9	10	10	<1	1	3142915
Dissolved Nickel (Ni)	ug/L	0.58	0.57	0.42	0.14	0.05	3134489
Dissolved Selenium (Se)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Silicon (Si)	ug/L	1510	1540	1600	<100	100	3142915
Dissolved Silver (Ag)	ug/L	<0.05	<0.05	<0.05	<0.05	0.05	3142915
Dissolved Strontium (Sr)	ug/L	7020	7560	7730	<10	10	3142915
Dissolved Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	3142915
Dissolved Tin (Sn)	ug/L	<1	<1	<1	<1	1	3142915
Dissolved Titanium (Ti)	ug/L	<10	<10	<10	<10	10	3142915
Dissolved Uranium (U)	ug/L	2.37	2.49	2.57	<0.05	0.05	3142915
Dissolved Vanadium (V)	ug/L	<10	<10	<10	<10	10	3142915
Dissolved Zinc (Zn)	ug/L	10.8(1)	5.4	11.0	1.4	0.5	3134489
Dissolved Calcium (Ca)	mg/L	457	490	493	<1	1	3146990
Dissolved Magnesium (Mg)	mg/L	1430	1530	1550	<1	1	3146990
Dissolved Potassium (K)	mg/L	412	444	442	<1	1	3146990
Dissolved Sodium (Na)	mg/L	10000	10300	10400	3	1	3146990
Dissolved Sulphur (S)	mg/L	1080	1150	1180	<20	20	3146990

RDL = Reportable Detection Limit
(1) - dissolved > total, reanalyzed & confirmed. Possible trace level of field-filtered contamination on dissolved metal bottle or there is a discrepancy between samples taken.

Maxxam Job #: A923245
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		O83403	O83404	O83405	O83406		
Sampling Date		2009/05/14	2009/05/14	2009/05/14	2009/05/14		
	Units	**1369-01**	**1369-02**	**1369-03**	**1369-04**	**RDL**	**QC Batch**
Total Metals by ICPMS							
Total Aluminum (Al)	ug/L	32	21	36	25	10	3142912
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	3142912
Total Arsenic (As)	ug/L	2.1	2.3	2.1	<0.5	0.5	3142912
Total Barium (Ba)	ug/L	9	9	9	<1	1	3142912
Total Beryllium (Be)	ug/L	<1	<1	<1	<1	1	3142912
Total Bismuth (Bi)	ug/L	<1	<1	<1	<1	1	3142912
Total Boron (B)	ug/L	4220	4260	4300	<50	50	3142912
Total Cadmium (Cd)	ug/L	0.08	0.09	0.09	<0.01	0.01	3134530
Total Chromium (Cr)	ug/L	<0.5	0.5	<0.5	<0.5	0.5	3142912
Total Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	<0.05	0.05	3134530
Total Copper (Cu)	ug/L	0.60	0.26	0.30	0.07	0.05	3134530
Total Iron (Fe)	ug/L	15	9	16	<1	1	3134530
Total Lead (Pb)	ug/L	<0.05	<0.05	<0.05	<0.05	0.05	3134530
Total Lithium (Li)	ug/L	191	191	194	<20	20	3142912
Total Manganese (Mn)	ug/L	1.5	1.3	1.4	<0.2	0.2	3134530
Total Molybdenum (Mo)	ug/L	10	10	10	<1	1	3142912
Total Nickel (Ni)	ug/L	0.81	0.38	0.37	0.06	0.05	3134530
Total Selenium (Se)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	3142912
Total Silicon (Si)	ug/L	1620	1720	1780	<100	100	3142912
Total Silver (Ag)	ug/L	<0.05	<0.05	<0.05	<0.05	0.05	3142912
Total Strontium (Sr)	ug/L	7670	7800	7950	<10	10	3142912
Total Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	3142912
Total Tin (Sn)	ug/L	<1	<1	<1	<1	1	3142912
Total Titanium (Ti)	ug/L	<10	<10	<10	<10	10	3142912
Total Uranium (U)	ug/L	2.51	2.36	2.51	<0.05	0.05	3142912
Total Vanadium (V)	ug/L	<10	<10	<10	<10	10	3142912
Total Zinc (Zn)	ug/L	8.0	5.4	9.4	2.4	0.5	3134530
Total Calcium (Ca)	mg/L	479	496	503	<1	1	3146988
Total Magnesium (Mg)	mg/L	1450	1510	1510	<1	1	3146988
Total Potassium (K)	mg/L	440	455	456	<1	1	3146988
Total Sodium (Na)	mg/L	10100	11600	10800	2	1	3146988
Total Sulphur (S)	mg/L	1130	1180	1190	<20	20	3146988

RDL = Reportable Detection Limit

Maxxam Job #: A923245
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3134489	Dissolved Cadmium (Cd)	2009/05/21	91	75 - 125	95	75 - 125	<0.01	ug/L	7.4	25
3134489	Dissolved Cobalt (Co)	2009/05/21	96	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Copper (Cu)	2009/05/21	91	75 - 125	99	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Lead (Pb)	2009/05/21	91	75 - 125	94	75 - 125	<0.05	ug/L	NC	25
3134489	Dissolved Nickel (Ni)	2009/05/21	93	75 - 125	100	75 - 125	0.10, RDL=0.05	ug/L	1.4	25
3134489	Dissolved Zinc (Zn)	2009/05/21	87	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3134489	Dissolved Iron (Fe)	2009/05/21					<1	ug/L	NC	25
3134489	Dissolved Manganese (Mn)	2009/05/21					<0.2	ug/L	NC	25
3134530	Total Cadmium (Cd)	2009/05/21	89	75 - 125	92	75 - 125	<0.01	ug/L	0.6	25
3134530	Total Cobalt (Co)	2009/05/21	95	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3134530	Total Copper (Cu)	2009/05/21	83	75 - 125	94	75 - 125	<0.05	ug/L	NC	25
3134530	Total Lead (Pb)	2009/05/21	87	75 - 125	90	75 - 125	<0.05	ug/L	NC	25
3134530	Total Nickel (Ni)	2009/05/21	89	75 - 125	96	75 - 125	<0.05	ug/L	5.5	25
3134530	Total Zinc (Zn)	2009/05/21	80	75 - 125	99	75 - 125	<0.5	ug/L	NC	25
3134530	Total Iron (Fe)	2009/05/21					<1	ug/L	3.6	25
3134530	Total Manganese (Mn)	2009/05/21					<0.2	ug/L	6.7	25
3142912	Total Arsenic (As)	2009/05/25	107	75 - 125	94	75 - 125	<0.5	ug/L	NC	25
3142912	Total Barium (Ba)	2009/05/25	101	75 - 125	98	75 - 125	<1	ug/L	0.7	25
3142912	Total Beryllium (Be)	2009/05/25	109	75 - 125	99	75 - 125	<1	ug/L	NC	25
3142912	Total Chromium (Cr)	2009/05/25	119	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3142912	Total Lithium (Li)	2009/05/25	NC	75 - 125	105	75 - 125	<20	ug/L	2.0	25
3142912	Total Selenium (Se)	2009/05/25	105	75 - 125	102	75 - 125	<0.5	ug/L	NC	25
3142912	Total Strontium (Sr)	2009/05/25	NC	75 - 125	95	75 - 125	<10	ug/L	1.8	25
3142912	Total Titanium (Ti)	2009/05/25	123	75 - 125	100	75 - 125	<10	ug/L	NC	25
3142912	Total Uranium (U)	2009/05/25	96	75 - 125	102	75 - 125	<0.05	ug/L	4.8	25
3142912	Total Vanadium (V)	2009/05/25	123	75 - 125	93	75 - 125	<10	ug/L	NC	25
3142912	Total Boron (B)	2009/05/25			0	N/A	<50	ug/L	1.2	25
3142912	Total Aluminum (Al)	2009/05/25					<10	ug/L	NC	25
3142912	Total Antimony (Sb)	2009/05/25					<0.5	ug/L	NC	25
3142912	Total Bismuth (Bi)	2009/05/25					<1	ug/L	NC	25
3142912	Total Molybdenum (Mo)	2009/05/25					<1	ug/L	0.7	25
3142912	Total Silicon (Si)	2009/05/25					<100	ug/L	3.2	25
3142912	Total Silver (Ag)	2009/05/25					<0.05	ug/L	NC	25
3142912	Total Thallium (Tl)	2009/05/25					<0.1	ug/L	NC	25
3142912	Total Tin (Sn)	2009/05/25					<1	ug/L	NC	25
3142915	Dissolved Arsenic (As)	2009/05/25	108	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Barium (Ba)	2009/05/25	101	75 - 125	94	75 - 125	<1	ug/L	1.8	25
3142915	Dissolved Beryllium (Be)	2009/05/25	116	75 - 125	107	75 - 125	<1	ug/L	NC	25
3142915	Dissolved Chromium (Cr)	2009/05/25	124	75 - 125	101	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Lithium (Li)	2009/05/25	NC	75 - 125	109	75 - 125	<20	ug/L	0.6	25

Maxxam Job #: A923245
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3142915	Dissolved Selenium (Se)	2009/05/25	98	75 - 125	89	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Strontium (Sr)	2009/05/25	NC	75 - 125	89	75 - 125	<10	ug/L	1.6	25
3142915	Dissolved Titanium (Ti)	2009/05/25	125	75 - 125	101	75 - 125	<10	ug/L	NC	25
3142915	Dissolved Uranium (U)	2009/05/25	101	75 - 125	98	75 - 125	<0.05	ug/L	0.5	25
3142915	Dissolved Vanadium (V)	2009/05/25	120	75 - 125	94	75 - 125	<10	ug/L	NC	25
3142915	Dissolved Aluminum (Al)	2009/05/25					<10	ug/L	NC	25
3142915	Dissolved Antimony (Sb)	2009/05/25					<0.5	ug/L	NC	25
3142915	Dissolved Bismuth (Bi)	2009/05/25					<1	ug/L	NC	25
3142915	Dissolved Boron (B)	2009/05/25					<50	ug/L	0.9	25
3142915	Dissolved Molybdenum (Mo)	2009/05/25					<1	ug/L	2.3	25
3142915	Dissolved Silicon (Si)	2009/05/25					<100	ug/L	4.4	25
3142915	Dissolved Silver (Ag)	2009/05/25					<0.05	ug/L	NC	25
3142915	Dissolved Thallium (Tl)	2009/05/25					<0.1	ug/L	NC	25
3142915	Dissolved Tin (Sn)	2009/05/25					<1	ug/L	NC	25
3146988	Total Calcium (Ca)	2009/05/25					<1	mg/L	0.3	25
3146988	Total Magnesium (Mg)	2009/05/25					<1	mg/L	0.1	25
3146988	Total Potassium (K)	2009/05/25					<1	mg/L	0.5	25
3146988	Total Sodium (Na)	2009/05/25					<1	mg/L	5.3	25
3146988	Total Sulphur (S)	2009/05/25					<20	mg/L	0.3	25
3146990	Dissolved Calcium (Ca)	2009/05/25					<1	mg/L	1.2	25
3146990	Dissolved Magnesium (Mg)	2009/05/25					<1	mg/L	1	25
3146990	Dissolved Potassium (K)	2009/05/25					<1	mg/L	1.4	25
3146990	Dissolved Sodium (Na)	2009/05/25					<1	mg/L	4.0	25
3146990	Dissolved Sulphur (S)	2009/05/25					<20	mg/L	0.3	25

N/A = Not Applicable
NC = Non-calculable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference

A923245

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

№ 1369 page 1 of 1

Golder Associates
2640 Douglas Street
Victoria, British Columbia, Canada V8T 4M1
Telephone 250-881-7372 Fax 250-881-7470

Project Number: 09-1421-0028	Laboratory Name: Maxxam
[redacted]	Address: 8577 Commerce Ct. Burnaby
Golder Contact: E.Irving	Golder E-mail Address: eirving @golder.com
	Telephone/Fax: 604-444-4808
	Contact: Elaine Cousins

Office the final reports should be sent to: Quote: A80018 Metals by Chelation

- ☑ 500 – 4260 Still Creek Dr. Burnaby, B.C. V5C 6C6 Tel: 604-298-6623 Fax: 604-298-5253
- ☐ 202 – 2790 Gladwin Road Abbotsford, B.C. V2T 4S8 Tel: 604-850-8786 Fax: 604-850-8756
- ☐ 2640 Douglas Street Victoria, B.C. V8T 4M1 Tel: 250-881-7372 Fax: 250-881-7470

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D / M / Y)	[redacted]	Number of Containers	Total Metals Maxxam Method	Dissolved Metals Maxxam Method	Major Cations Hardness							RUSH	Remarks (over)
1369 -01		H2O	14/05/09		2	✓	✓	✓								DLS as per quote
1369 -02		"	"		2	✓	✓	✓								"
1369 -03		"	"		2	✓	✓	✓								"
1369 -04		"	"		2	✓	✓	✓								"
-05																
-06																
-07																
-08																
-09																
-10																
-11																
-12																

Analyses Required

ATTN Elaine Cousins

Sampler's Signature: Virginia Chant	Relinquished by: Signature Virginia Chant	Company Golder	Date May 14,09	Time 3:00PM	Received by: Signature	Company	
Sample Storage (°C) 4°C	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company	
Comments:	Method of Shipment: Courier	Waybill No.: DO07826594	Received for Lab by:		Date		Time
	Shipped by: DHL	Shipment Condition: Seal Intact:	Temp (°C) 5, 2, 4	Cooler opened by: May 15/09	Date May 15/09 7:20		Time 7:20

WHITE: Golder Copy YELLOW: Lab Copy PINK: Lab Returns with Final Report * Bill CRD Directly *

Your Project #: 09-1421-0028
Your C.O.C. #: 1367

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/05/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A923253
Received: 2009/05/15, 07:20

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	3	N/A	2009/05/26		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	3	N/A	2009/05/22	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	3	N/A	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	3	N/A	2009/05/22	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2009/05/22	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	3	2009/05/22	2009/05/25	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	3	N/A	2009/05/19	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Elaine Cousins
26 May 2009 15:52:52 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A923253
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		O83431	O83432	O83433		
Sampling Date		2009/05/13	2009/05/13	2009/05/13		
	Units	**1367-01**	**1367-02**	**1367-03**	**RDL**	**QC Batch**
Preparation						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	N/A	ONSITE
Misc. Inorganics						
Dissolved Hardness (CaCO3)	mg/L	7370	7220	7160	0.5	3132716

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A923253
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		O83431	O83432	O83433		
Sampling Date		2009/05/13	2009/05/13	2009/05/13		
	Units	**1367-01**	**1367-02**	**1367-03**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	<10	<10	<10	10	3142915
Dissolved Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Arsenic (As)	ug/L	2.1	1.9	2.1	0.5	3142915
Dissolved Barium (Ba)	ug/L	9	8	9	1	3142915
Dissolved Beryllium (Be)	ug/L	<1	<1	<1	1	3142915
Dissolved Bismuth (Bi)	ug/L	<1	<1	<1	1	3142915
Dissolved Boron (B)	ug/L	4210	4210	4180	50	3142915
Dissolved Cadmium (Cd)	ug/L	0.07	0.06	0.07	0.01	3138035
Dissolved Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3138035
Dissolved Copper (Cu)	ug/L	0.25	0.16	0.32	0.05	3138035
Dissolved Iron (Fe)	ug/L	1	2	5	1	3138035
Dissolved Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3138035
Dissolved Lithium (Li)	ug/L	187	188	185	20	3142915
Dissolved Manganese (Mn)	ug/L	0.9	0.8	1.4	0.2	3138035
Dissolved Molybdenum (Mo)	ug/L	11	10	10	1	3142915
Dissolved Nickel (Ni)	ug/L	0.40	0.35	0.33	0.05	3138035
Dissolved Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Silicon (Si)	ug/L	1470	1470	1390	100	3142915
Dissolved Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3142915
Dissolved Strontium (Sr)	ug/L	7390	7340	7380	10	3142915
Dissolved Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3142915
Dissolved Tin (Sn)	ug/L	<1	<1	<1	1	3142915
Dissolved Titanium (Ti)	ug/L	<10	<10	<10	10	3142915
Dissolved Uranium (U)	ug/L	2.58	2.45	2.46	0.05	3142915
Dissolved Vanadium (V)	ug/L	<10	<10	<10	10	3142915
Dissolved Zinc (Zn)	ug/L	0.7	0.7	1.8	0.5	3138035
Dissolved Calcium (Ca)	mg/L	485	471	468	1	3146990
Dissolved Magnesium (Mg)	mg/L	1500	1470	1460	1	3146990
Dissolved Potassium (K)	mg/L	439	428	421	1	3146990
Dissolved Sodium (Na)	mg/L	10400	10400	10200	1	3146990
Dissolved Sulphur (S)	mg/L	1140	1110	1100	20	3146990

RDL = Reportable Detection Limit

Maxxam Job #: A923253
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		O83431	O83432	O83433		
Sampling Date		2009/05/13	2009/05/13	2009/05/13		
	Units	**1367-01**	**1367-02**	**1367-03**	**RDL**	**QC Batch**
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	24	22	17	10	3142912
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3142912
Total Arsenic (As)	ug/L	2.2	2.1	2.0	0.5	3142912
Total Barium (Ba)	ug/L	9	8	9	1	3142912
Total Beryllium (Be)	ug/L	<1	<1	<1	1	3142912
Total Bismuth (Bi)	ug/L	<1	<1	<1	1	3142912
Total Boron (B)	ug/L	4170	4160	4120	50	3142912
Total Cadmium (Cd)	ug/L	0.06	0.07	0.06	0.01	3138046
Total Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3142912
Total Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3138046
Total Copper (Cu)	ug/L	0.22	0.24	0.37	0.05	3138046
Total Iron (Fe)	ug/L	10	13	12	1	3138046
Total Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3138046
Total Lithium (Li)	ug/L	189	186	180	20	3142912
Total Manganese (Mn)	ug/L	1.5	1.6	1.8	0.2	3138046
Total Molybdenum (Mo)	ug/L	10	10	10	1	3142912
Total Nickel (Ni)	ug/L	0.40	0.39	0.34	0.05	3138046
Total Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3142912
Total Silicon (Si)	ug/L	1670	1630	1480	100	3142912
Total Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3142912
Total Strontium (Sr)	ug/L	7730	7690	7550	10	3142912
Total Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3142912
Total Tin (Sn)	ug/L	<1	<1	<1	1	3142912
Total Titanium (Ti)	ug/L	<10	<10	<10	10	3142912
Total Uranium (U)	ug/L	2.42	2.31	2.30	0.05	3142912
Total Vanadium (V)	ug/L	<10	<10	<10	10	3142912
Total Zinc (Zn)	ug/L	<0.5	0.6	1.0	0.5	3138046
Total Calcium (Ca)	mg/L	495	486	481	1	3146988
Total Magnesium (Mg)	mg/L	1470	1460	1450	1	3146988
Total Potassium (K)	mg/L	451	445	439	1	3146988
Total Sodium (Na)	mg/L	10600	10300	10200	1	3146988
Total Sulphur (S)	mg/L	1170	1150	1150	20	3146988

RDL = Reportable Detection Limit

Maxxam Job #: A923253
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3138035	Dissolved Cadmium (Cd)	2009/05/22	92	75 - 125	92	75 - 125	<0.01	ug/L	22.4	25
3138035	Dissolved Cobalt (Co)	2009/05/22	100	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3138035	Dissolved Copper (Cu)	2009/05/22	91	75 - 125	99	75 - 125	0.19, RDL=0.05	ug/L	NC	25
3138035	Dissolved Lead (Pb)	2009/05/22	91	75 - 125	88	75 - 125	<0.05	ug/L	NC	25
3138035	Dissolved Nickel (Ni)	2009/05/22	98	75 - 125	97	75 - 125	0.06, RDL=0.05	ug/L	20.5	25
3138035	Dissolved Zinc (Zn)	2009/05/22	91	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3138035	Dissolved Iron (Fe)	2009/05/22					<1	ug/L	NC	25
3138035	Dissolved Manganese (Mn)	2009/05/22					<0.2	ug/L	NC	25
3138046	Total Cadmium (Cd)	2009/05/22	85	75 - 125	84	75 - 125	<0.01	ug/L	17.7	25
3138046	Total Cobalt (Co)	2009/05/22	97	75 - 125	90	75 - 125	<0.05	ug/L	NC	25
3138046	Total Copper (Cu)	2009/05/22	83	75 - 125	80	75 - 125	0.13, RDL=0.05	ug/L	NC	25
3138046	Total Lead (Pb)	2009/05/22	84	75 - 125	80	75 - 125	<0.05	ug/L	NC	25
3138046	Total Nickel (Ni)	2009/05/22	90	75 - 125	89	75 - 125	0.12, RDL=0.05	ug/L	15.4	25
3138046	Total Zinc (Zn)	2009/05/22	81	75 - 125	87	75 - 125	<0.5	ug/L	NC	25
3138046	Total Iron (Fe)	2009/05/22					<1	ug/L	24.0	25
3138046	Total Manganese (Mn)	2009/05/22					<0.2	ug/L	5.4	25
3142912	Total Arsenic (As)	2009/05/25	107	75 - 125	94	75 - 125	<0.5	ug/L	NC	25
3142912	Total Barium (Ba)	2009/05/25	101	75 - 125	98	75 - 125	<1	ug/L	0.7	25
3142912	Total Beryllium (Be)	2009/05/25	109	75 - 125	99	75 - 125	<1	ug/L	NC	25
3142912	Total Chromium (Cr)	2009/05/25	119	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3142912	Total Lithium (Li)	2009/05/25	NC	75 - 125	105	75 - 125	<20	ug/L	2.0	25
3142912	Total Selenium (Se)	2009/05/25	105	75 - 125	102	75 - 125	<0.5	ug/L	NC	25
3142912	Total Strontium (Sr)	2009/05/25	NC	75 - 125	95	75 - 125	<10	ug/L	1.8	25
3142912	Total Titanium (Ti)	2009/05/25	123	75 - 125	100	75 - 125	<10	ug/L	NC	25
3142912	Total Uranium (U)	2009/05/25	96	75 - 125	102	75 - 125	<0.05	ug/L	4.8	25
3142912	Total Vanadium (V)	2009/05/25	123	75 - 125	93	75 - 125	<10	ug/L	NC	25
3142912	Total Boron (B)	2009/05/25			0	N/A	<50	ug/L	1.2	25
3142912	Total Aluminum (Al)	2009/05/25					<10	ug/L	NC	25
3142912	Total Antimony (Sb)	2009/05/25					<0.5	ug/L	NC	25
3142912	Total Bismuth (Bi)	2009/05/25					<1	ug/L	NC	25
3142912	Total Molybdenum (Mo)	2009/05/25					<1	ug/L	0.7	25
3142912	Total Silicon (Si)	2009/05/25					<100	ug/L	3.2	25
3142912	Total Silver (Ag)	2009/05/25					<0.05	ug/L	NC	25
3142912	Total Thallium (Tl)	2009/05/25					<0.1	ug/L	NC	25
3142912	Total Tin (Sn)	2009/05/25					<1	ug/L	NC	25
3142915	Dissolved Arsenic (As)	2009/05/25	108	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Barium (Ba)	2009/05/25	101	75 - 125	94	75 - 125	<1	ug/L	1.8	25
3142915	Dissolved Beryllium (Be)	2009/05/25	116	75 - 125	107	75 - 125	<1	ug/L	NC	25
3142915	Dissolved Chromium (Cr)	2009/05/25	124	75 - 125	101	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Lithium (Li)	2009/05/25	NC	75 - 125	109	75 - 125	<20	ug/L	0.6	25

Your Project #: 09-1421-0028
Your C.O.C. #: 1360

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/05/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A923261
Received: 2009/05/15, 07:20

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	9	N/A	2009/05/26		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	9	N/A	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	9	N/A	2009/05/25	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	9	N/A	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	9	N/A	2009/05/25	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	9	2009/05/22	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	9	2009/05/22	2009/05/25	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	9	N/A	2009/05/19	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Elaine Cousins
27 May 2009 09:59:26 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A923261
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		O83457	O83458	O83459	O83460	O83461	O83462	O83463	O83464	O83465		
Sampling Date		2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12		
	Units	**1360-01**	**1360-02**	**1360-03**	**1360-04**	**1360-05**	**1360-06**	**1360-07**	**1360-08**	**1360-09**	**RDL**	**QC Batch**
Preparation												
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	N/A	ONSITE
Misc. Inorganics												
Dissolved Hardness (CaCO3)	mg/L	7420	7360	7460	7470	7480	7420	7450	7500	7480	0.5	3132716

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A923261
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		O83457	O83458	O83459	O83460	O83461	O83462	O83463	O83464	O83465		
Sampling Date		2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12		
	Units	**1360-01**	**1360-02**	**1360-03**	**1360-04**	**1360-05**	**1360-06**	**1360-07**	**1360-08**	**1360-09**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS												
Dissolved Aluminum (Al)	ug/L	<10	<10	<10	21	<10	15	<10	<10	<10	10	3142915
Dissolved Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Arsenic (As)	ug/L	2.2	2.1	2.1	2.1	2.2	2.0	2.1	2.2	2.1	0.5	3142915
Dissolved Barium (Ba)	ug/L	8	8	8	8	8	8	8	8	9	1	3142915
Dissolved Beryllium (Be)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3142915
Dissolved Bismuth (Bi)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3142915
Dissolved Boron (B)	ug/L	4280	4280	4280	4310	4340	4320	4200	4310	4310	50	3142915
Dissolved Cadmium (Cd)	ug/L	0.07	0.08	0.07	0.07	0.06	0.08	0.08	0.08	0.07	0.01	3141013
Dissolved Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3141013
Dissolved Copper (Cu)	ug/L	0.19	0.23	0.23	0.22	0.27	0.26	0.32	0.40	0.29	0.05	3141013
Dissolved Iron (Fe)	ug/L	3	2	2	3	3	2	3	3	2	1	3141013
Dissolved Lead (Pb)	ug/L	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.06	<0.05	0.05	3141013
Dissolved Lithium (Li)	ug/L	189	191	189	193	195	194	186	190	196	20	3142915
Dissolved Manganese (Mn)	ug/L	0.8	0.8	0.7	0.7	0.8	0.7	0.7	0.8	0.8	0.2	3141013
Dissolved Molybdenum (Mo)	ug/L	10	10	11	11	11	10	10	11	11	1	3142915
Dissolved Nickel (Ni)	ug/L	0.38	0.37	0.36	0.37	0.38	0.39	0.37	0.39	0.35	0.05	3141013
Dissolved Selenium (Se)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Silicon (Si)	ug/L	1610	1590	1670	1570	1610	1650	1640	1660	1610	100	3142915
Dissolved Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3142915
Dissolved Strontium (Sr)	ug/L	7580	7690	7670	7860	7810	7810	7690	7850	7760	10	3142915
Dissolved Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3142915
Dissolved Tin (Sn)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3142915
Dissolved Titanium (Ti)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	3142915
Dissolved Uranium (U)	ug/L	2.49	2.52	2.57	2.65	2.64	2.52	2.65	2.71	2.70	0.05	3142915
Dissolved Vanadium (V)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	3142915
Dissolved Zinc (Zn)	ug/L	1.9	0.8	0.7	0.7	0.8	0.9	1.4	1.8	0.8	0.5	3141013
Dissolved Calcium (Ca)	mg/L	487	484	489	492	493	492	493	495	495	1	3146990
Dissolved Magnesium (Mg)	mg/L	1510	1490	1520	1520	1520	1500	1510	1520	1520	1	3146990
Dissolved Potassium (K)	mg/L	443	438	444	447	448	447	446	451	449	1	3146990
Dissolved Sodium (Na)	mg/L	12400	10400	10500	10700	10500	10500	10700	10600	10700	1	3146990
Dissolved Sulphur (S)	mg/L	1140	1160	1160	1170	1160	1160	1160	1180	1170	20	3146990

RDL = Reportable Detection Limit

Maxxam Job #: A923261
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		O83457	O83458	O83459	O83460	O83461	O83462	O83463	O83464	O83465		
Sampling Date		2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12	2009/05/12		
	Units	**1360-01**	**1360-02**	**1360-03**	**1360-04**	**1360-05**	**1360-06**	**1360-07**	**1360-08**	**1360-09**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	ug/L	18	19	18	20	21	24	21	20	22	10	3142912
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3142912
Total Arsenic (As)	ug/L	2.0	2.2	2.0	1.9	2.0	2.1	2.0	1.9	2.1	0.5	3142912
Total Barium (Ba)	ug/L	8	8	8	8	8	8	8	8	8	1	3142912
Total Beryllium (Be)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3142912
Total Bismuth (Bi)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3142912
Total Boron (B)	ug/L	4250	4240	4210	4300	4470	4480	4420	4400	4430	50	3142912
Total Cadmium (Cd)	ug/L	0.07	0.07	0.06	0.08	0.07	0.08	0.08	0.07	0.08	0.01	3141015
Total Chromium (Cr)	ug/L	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3142912
Total Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3141015
Total Copper (Cu)	ug/L	0.26	0.26	0.25	0.27	0.29	0.27	0.30	0.61	0.40	0.05	3141015
Total Iron (Fe)	ug/L	15	15	15	20	19	18	20	21	20	1	3141015
Total Lead (Pb)	ug/L	0.15	0.06	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	0.05	3141015
Total Lithium (Li)	ug/L	188	190	192	192	196	196	195	191	196	20	3142912
Total Manganese (Mn)	ug/L	1.3	1.3	1.2	1.4	1.3	1.3	1.3	1.3	1.4	0.2	3141015
Total Molybdenum (Mo)	ug/L	10	10	10	10	10	10	10	10	10	1	3142912
Total Nickel (Ni)	ug/L	0.37	0.42	0.34	0.38	0.38	0.38	0.35	0.40	0.38	0.05	3141015
Total Selenium (Se)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3142912
Total Silicon (Si)	ug/L	1760	1960	1730	1670	1660	1710	1730	1720	1720	100	3142912
Total Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.06	0.05	<0.05	<0.05	<0.05	<0.05	0.05	3142912
Total Strontium (Sr)	ug/L	7780	7790	7750	7440	7610	7530	7490	7440	7570	10	3142912
Total Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3142912
Total Tin (Sn)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3142912
Total Titanium (Ti)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	3142912
Total Uranium (U)	ug/L	2.45	2.34	2.30	2.44	2.50	2.59	2.58	2.55	2.44	0.05	3142912
Total Vanadium (V)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	3142912
Total Zinc (Zn)	ug/L	0.8	0.9	0.5	1.2	0.8	<0.5	<0.5	<0.5	0.6	0.5	3141015
Total Calcium (Ca)	mg/L	494	508	493	486	490	487	483	491	499	1	3146988
Total Magnesium (Mg)	mg/L	1490	1530	1470	1520	1560	1540	1530	1540	1560	1	3146988
Total Potassium (K)	mg/L	452	464	448	443	454	449	448	450	458	1	3146988
Total Sodium (Na)	mg/L	10800	10200	10600	10500	10300	11000	10800	11300	10600	1	3146988
Total Sulphur (S)	mg/L	1160	1210	1160	1180	1200	1190	1170	1180	1210	20	3146988

RDL = Reportable Detection Limit

Maxxam Job #: A923261
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3141013	Dissolved Cadmium (Cd)	2009/05/25	87	75 - 125	92	75 - 125	<0.01	ug/L	6.9	25
3141013	Dissolved Cobalt (Co)	2009/05/25	99	75 - 125	97	75 - 125	<0.05	ug/L	NC	25
3141013	Dissolved Copper (Cu)	2009/05/25	92	75 - 125	96	75 - 125	0.20, RDL=0.05	ug/L	NC	25
3141013	Dissolved Lead (Pb)	2009/05/25	89	75 - 125	94	75 - 125	<0.05	ug/L	NC	25
3141013	Dissolved Nickel (Ni)	2009/05/25	94	75 - 125	98	75 - 125	<0.05	ug/L	4.7	25
3141013	Dissolved Zinc (Zn)	2009/05/25	76	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3141013	Dissolved Iron (Fe)	2009/05/25					<1	ug/L	NC	25
3141013	Dissolved Manganese (Mn)	2009/05/25					<0.2	ug/L	NC	25
3141015	Total Cadmium (Cd)	2009/05/25	82	75 - 125	92	75 - 125	<0.01	ug/L	9.4	25
3141015	Total Cobalt (Co)	2009/05/25	95	75 - 125	92	75 - 125	<0.05	ug/L	NC	25
3141015	Total Copper (Cu)	2009/05/25	86	75 - 125	92	75 - 125	<0.05	ug/L	NC	25
3141015	Total Lead (Pb)	2009/05/25	84	75 - 125	92	75 - 125	<0.05	ug/L	NC	25
3141015	Total Nickel (Ni)	2009/05/25	90	75 - 125	92	75 - 125	<0.05	ug/L	4.2	25
3141015	Total Zinc (Zn)	2009/05/25	76	75 - 125	92	75 - 125	<0.5	ug/L	NC	25
3141015	Total Iron (Fe)	2009/05/25					1, RDL=1	ug/L	21.3	25
3141015	Total Manganese (Mn)	2009/05/25					<0.2	ug/L	3.7	25
3142912	Total Arsenic (As)	2009/05/25	107	75 - 125	94	75 - 125	<0.5	ug/L	NC	25
3142912	Total Barium (Ba)	2009/05/25	101	75 - 125	98	75 - 125	<1	ug/L	0.7	25
3142912	Total Beryllium (Be)	2009/05/25	109	75 - 125	99	75 - 125	<1	ug/L	NC	25
3142912	Total Chromium (Cr)	2009/05/25	119	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3142912	Total Lithium (Li)	2009/05/25	NC	75 - 125	105	75 - 125	<20	ug/L	2.0	25
3142912	Total Selenium (Se)	2009/05/25	105	75 - 125	102	75 - 125	<0.5	ug/L	NC	25
3142912	Total Strontium (Sr)	2009/05/25	NC	75 - 125	95	75 - 125	<10	ug/L	1.8	25
3142912	Total Titanium (Ti)	2009/05/25	123	75 - 125	100	75 - 125	<10	ug/L	NC	25
3142912	Total Uranium (U)	2009/05/25	96	75 - 125	102	75 - 125	<0.05	ug/L	4.8	25
3142912	Total Vanadium (V)	2009/05/25	123	75 - 125	93	75 - 125	<10	ug/L	NC	25
3142912	Total Boron (B)	2009/05/25			0	N/A	<50	ug/L	1.2	25
3142912	Total Aluminum (Al)	2009/05/25					<10	ug/L	NC	25
3142912	Total Antimony (Sb)	2009/05/25					<0.5	ug/L	NC	25
3142912	Total Bismuth (Bi)	2009/05/25					<1	ug/L	NC	25
3142912	Total Molybdenum (Mo)	2009/05/25					<1	ug/L	0.7	25
3142912	Total Silicon (Si)	2009/05/25					<100	ug/L	3.2	25
3142912	Total Silver (Ag)	2009/05/25					<0.05	ug/L	NC	25
3142912	Total Thallium (Tl)	2009/05/25					<0.1	ug/L	NC	25
3142912	Total Tin (Sn)	2009/05/25					<1	ug/L	NC	25
3142915	Dissolved Arsenic (As)	2009/05/25	108	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Barium (Ba)	2009/05/25	101	75 - 125	94	75 - 125	<1	ug/L	1.8	25
3142915	Dissolved Beryllium (Be)	2009/05/25	116	75 - 125	107	75 - 125	<1	ug/L	NC	25
3142915	Dissolved Chromium (Cr)	2009/05/25	124	75 - 125	101	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Lithium (Li)	2009/05/25	NC	75 - 125	109	75 - 125	<20	ug/L	0.6	25

Maxxam Job #: A923261
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3142915	Dissolved Selenium (Se)	2009/05/25	98	75 - 125	89	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Strontium (Sr)	2009/05/25	NC	75 - 125	89	75 - 125	<10	ug/L	1.6	25
3142915	Dissolved Titanium (Ti)	2009/05/25	125	75 - 125	101	75 - 125	<10	ug/L	NC	25
3142915	Dissolved Uranium (U)	2009/05/25	101	75 - 125	98	75 - 125	<0.05	ug/L	0.5	25
3142915	Dissolved Vanadium (V)	2009/05/25	120	75 - 125	94	75 - 125	<10	ug/L	NC	25
3142915	Dissolved Aluminum (Al)	2009/05/25					<10	ug/L	NC	25
3142915	Dissolved Antimony (Sb)	2009/05/25					<0.5	ug/L	NC	25
3142915	Dissolved Bismuth (Bi)	2009/05/25					<1	ug/L	NC	25
3142915	Dissolved Boron (B)	2009/05/25					<50	ug/L	0.9	25
3142915	Dissolved Molybdenum (Mo)	2009/05/25					<1	ug/L	2.3	25
3142915	Dissolved Silicon (Si)	2009/05/25					<100	ug/L	4.4	25
3142915	Dissolved Silver (Ag)	2009/05/25					<0.05	ug/L	NC	25
3142915	Dissolved Thallium (Tl)	2009/05/25					<0.1	ug/L	NC	25
3142915	Dissolved Tin (Sn)	2009/05/25					<1	ug/L	NC	25
3146988	Total Calcium (Ca)	2009/05/25					<1	mg/L	0.3	25
3146988	Total Magnesium (Mg)	2009/05/25					<1	mg/L	0.1	25
3146988	Total Potassium (K)	2009/05/25					<1	mg/L	0.5	25
3146988	Total Sodium (Na)	2009/05/25					<1	mg/L	5.3	25
3146988	Total Sulphur (S)	2009/05/25					<20	mg/L	0.3	25
3146990	Dissolved Calcium (Ca)	2009/05/25					<1	mg/L	1.2	25
3146990	Dissolved Magnesium (Mg)	2009/05/25					<1	mg/L	1	25
3146990	Dissolved Potassium (K)	2009/05/25					<1	mg/L	1.4	25
3146990	Dissolved Sodium (Na)	2009/05/25					<1	mg/L	4.0	25
3146990	Dissolved Sulphur (S)	2009/05/25					<20	mg/L	0.3	25

N/A = Not Applicable
NC = Non-calculable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference

A923261

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

№ 1360 page 1 of 1

Golder Associates

2640 Douglas Street
Victoria, British Columbia, Canada V8T 4M1
Telephone 250-881-7372 Fax 250-881-7470

Project Number:		Laboratory Name:
09-1421-0028		Maxxam
[redacted]		Address: 8577 Commerce Ct. Burnaby
Golder Contact: E. Irving	Golder E-mail Address: eirving @golder.com	Telephone/Fax: 604-444-4808
		Contact: Elaine Cousins

Office the final reports should be sent to: Quote: A80018 Metals by Chelation

- ☒ 500 – 4260 Still Creek Dr. Burnaby, B.C. V5C 6C6 Tel: 604-298-6623 Fax: 604-298-5253
- ☐ 202 – 2790 Gladwin Road Abbotsford, B.C. V2T 4S8 Tel: 604-850-8786 Fax: 604-850-8756
- ☐ 2640 Douglas Street Victoria, B.C. V8T 4M1 Tel: 250-881-7372 Fax: 250-881-7470

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D / M / Y)	[redacted]	Number of Containers	Total Metals Marine Method	Dissolved Metals Marine Method	Major Cations Hardness							RUSH	Remarks (over)
1360-01		H2O	12/05/09		2	✓	✓	✓								DLS as per quote
1360-02		"	"		2	✓	✓	✓								"
1360-03		"	"		2	✓	✓	✓								"
1360-04		"	"		2	✓	✓	✓								"
1360-05		"	"		2	✓	✓	✓								"
1360-06		"	"		2	✓	✓	✓								"
1360-07		"	"		2	✓	✓	✓								"
1360-08		"	"		2	✓	✓	✓								"
1360-09		"	"		2	✓	✓	✓								"
-10																
-11																
-12																

Attn Elaine Cousins

Analyses Required

Sampler's Signature:	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Virginia Chant	Virginia Chant	Golder	May 14, 09	3:00PM		
Sample Storage (°C) 4°C	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company

Comments:	Method of Shipment:	Waybill No.:	Received for Lab by:	Date	Time
	Courier	D007826594			
	Shipped by: DHL	Shipment Condition: Seal Intact:	Temp (°C) 5.2, 4	Cooler opened by: AMD	Date May 15/09 Time 7:20

WHITE: Golder Copy YELLOW: Lab Copy PINK: Lab Returns with Final Report *Bill CRD Directly*

Your Project #: 09-1421-0028
Your C.O.C. #: 1340

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/05/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A923281
Received: 2009/05/15, 07:20

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	3	N/A	2009/05/26		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	3	N/A	2009/05/22	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	3	N/A	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	3	N/A	2009/05/22	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2009/05/22	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	3	2009/05/22	2009/05/25	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	3	N/A	2009/05/19	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Elaine Cousins
26 May 2009 15:50:30 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A923281
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		O83532	O83533	O83534		
Sampling Date		2009/05/11	2009/05/11	2009/05/11		
	Units	**1340-01**	**1340-02**	**1340-03**	**RDL**	**QC Batch**
Preparation						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	N/A	ONSITE
Misc. Inorganics						
Dissolved Hardness (CaCO3)	mg/L	7320	7430	7480	0.5	3132716

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A923281
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		O83532	O83533	O83534		
Sampling Date		2009/05/11	2009/05/11	2009/05/11		
	Units	**1340-01**	**1340-02**	**1340-03**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	<10	<10	<10	10	3142915
Dissolved Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Arsenic (As)	ug/L	2.1	2.2	2.2	0.5	3142915
Dissolved Barium (Ba)	ug/L	8	8	8	1	3142915
Dissolved Beryllium (Be)	ug/L	<1	<1	<1	1	3142915
Dissolved Bismuth (Bi)	ug/L	<1	<1	<1	1	3142915
Dissolved Boron (B)	ug/L	4230	4230	4190	50	3142915
Dissolved Cadmium (Cd)	ug/L	0.07	0.07	0.07	0.01	3138035
Dissolved Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3138035
Dissolved Copper (Cu)	ug/L	0.23	0.30	0.24	0.05	3138035
Dissolved Iron (Fe)	ug/L	2	2	4	1	3138035
Dissolved Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3138035
Dissolved Lithium (Li)	ug/L	190	188	187	20	3142915
Dissolved Manganese (Mn)	ug/L	0.7	0.7	0.7	0.2	3138035
Dissolved Molybdenum (Mo)	ug/L	11	11	11	1	3142915
Dissolved Nickel (Ni)	ug/L	0.41	0.35	0.41	0.05	3138035
Dissolved Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Silicon (Si)	ug/L	1630	1700	1660	100	3142915
Dissolved Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3142915
Dissolved Strontium (Sr)	ug/L	7720	7720	7820	10	3142915
Dissolved Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3142915
Dissolved Tin (Sn)	ug/L	<1	<1	<1	1	3142915
Dissolved Titanium (Ti)	ug/L	<10	<10	<10	10	3142915
Dissolved Uranium (U)	ug/L	2.61	2.61	2.71	0.05	3142915
Dissolved Vanadium (V)	ug/L	<10	<10	<10	10	3142915
Dissolved Zinc (Zn)	ug/L	0.6	0.7	1.0	0.5	3138035
Dissolved Calcium (Ca)	mg/L	487	498	500	1	3146990
Dissolved Magnesium (Mg)	mg/L	1480	1500	1510	1	3146990
Dissolved Potassium (K)	mg/L	441	447	453	1	3146990
Dissolved Sodium (Na)	mg/L	10600	10800	10600	1	3146990
Dissolved Sulphur (S)	mg/L	1160	1170	1170	20	3146990

RDL = Reportable Detection Limit

Maxxam Job #: A923281
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		O83532	O83533	O83534		
Sampling Date		2009/05/11	2009/05/11	2009/05/11		
	Units	**1340-01**	**1340-02**	**1340-03**	**RDL**	**QC Batch**
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	15	31	20	10	3142912
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3142912
Total Arsenic (As)	ug/L	2.1	2.0	2.1	0.5	3142912
Total Barium (Ba)	ug/L	8	8	8	1	3142912
Total Beryllium (Be)	ug/L	<1	<1	<1	1	3142912
Total Bismuth (Bi)	ug/L	<1	<1	<1	1	3142912
Total Boron (B)	ug/L	4370	4360	4280	50	3142912
Total Cadmium (Cd)	ug/L	0.07	0.09	0.08	0.01	3138046
Total Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3142912
Total Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3138046
Total Copper (Cu)	ug/L	0.24	0.25	0.26	0.05	3138046
Total Iron (Fe)	ug/L	12	15	15	1	3138046
Total Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3138046
Total Lithium (Li)	ug/L	191	193	188	20	3142912
Total Manganese (Mn)	ug/L	1.2	1.3	1.2	0.2	3138046
Total Molybdenum (Mo)	ug/L	10	11	10	1	3142912
Total Nickel (Ni)	ug/L	0.40	0.36	0.76	0.05	3138046
Total Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3142912
Total Silicon (Si)	ug/L	1720	1770	1760	100	3142912
Total Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3142912
Total Strontium (Sr)	ug/L	7570	7570	7440	10	3142912
Total Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3142912
Total Tin (Sn)	ug/L	<1	<1	<1	1	3142912
Total Titanium (Ti)	ug/L	<10	<10	<10	10	3142912
Total Uranium (U)	ug/L	2.56	2.67	2.45	0.05	3142912
Total Vanadium (V)	ug/L	<10	<10	<10	10	3142912
Total Zinc (Zn)	ug/L	0.7	0.5	0.5	0.5	3138046
Total Calcium (Ca)	mg/L	491	491	487	1	3146988
Total Magnesium (Mg)	mg/L	1540	1540	1530	1	3146988
Total Potassium (K)	mg/L	446	452	450	1	3146988
Total Sodium (Na)	mg/L	10500	10700	10600	1	3146988
Total Sulphur (S)	mg/L	1200	1180	1200	20	3146988

RDL = Reportable Detection Limit

Maxxam Job #: A923281
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3138035	Dissolved Cadmium (Cd)	2009/05/22	92	75 - 125	92	75 - 125	<0.01	ug/L	22.4	25
3138035	Dissolved Cobalt (Co)	2009/05/22	100	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3138035	Dissolved Copper (Cu)	2009/05/22	91	75 - 125	99	75 - 125	0.19, RDL=0.05	ug/L	NC	25
3138035	Dissolved Lead (Pb)	2009/05/22	91	75 - 125	88	75 - 125	<0.05	ug/L	NC	25
3138035	Dissolved Nickel (Ni)	2009/05/22	98	75 - 125	97	75 - 125	0.06, RDL=0.05	ug/L	20.5	25
3138035	Dissolved Zinc (Zn)	2009/05/22	91	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3138035	Dissolved Iron (Fe)	2009/05/22					<1	ug/L	NC	25
3138035	Dissolved Manganese (Mn)	2009/05/22					<0.2	ug/L	NC	25
3138046	Total Cadmium (Cd)	2009/05/22	85	75 - 125	84	75 - 125	<0.01	ug/L	17.7	25
3138046	Total Cobalt (Co)	2009/05/22	97	75 - 125	90	75 - 125	<0.05	ug/L	NC	25
3138046	Total Copper (Cu)	2009/05/22	83	75 - 125	80	75 - 125	0.13, RDL=0.05	ug/L	NC	25
3138046	Total Lead (Pb)	2009/05/22	84	75 - 125	80	75 - 125	<0.05	ug/L	NC	25
3138046	Total Nickel (Ni)	2009/05/22	90	75 - 125	89	75 - 125	0.12, RDL=0.05	ug/L	15.4	25
3138046	Total Zinc (Zn)	2009/05/22	81	75 - 125	87	75 - 125	<0.5	ug/L	NC	25
3138046	Total Iron (Fe)	2009/05/22					<1	ug/L	24.0	25
3138046	Total Manganese (Mn)	2009/05/22					<0.2	ug/L	5.4	25
3142912	Total Arsenic (As)	2009/05/25	107	75 - 125	94	75 - 125	<0.5	ug/L	NC	25
3142912	Total Barium (Ba)	2009/05/25	101	75 - 125	98	75 - 125	<1	ug/L	0.7	25
3142912	Total Beryllium (Be)	2009/05/25	109	75 - 125	99	75 - 125	<1	ug/L	NC	25
3142912	Total Chromium (Cr)	2009/05/25	119	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3142912	Total Lithium (Li)	2009/05/25	NC	75 - 125	105	75 - 125	<20	ug/L	2.0	25
3142912	Total Selenium (Se)	2009/05/25	105	75 - 125	102	75 - 125	<0.5	ug/L	NC	25
3142912	Total Strontium (Sr)	2009/05/25	NC	75 - 125	95	75 - 125	<10	ug/L	1.8	25
3142912	Total Titanium (Ti)	2009/05/25	123	75 - 125	100	75 - 125	<10	ug/L	NC	25
3142912	Total Uranium (U)	2009/05/25	96	75 - 125	102	75 - 125	<0.05	ug/L	4.8	25
3142912	Total Vanadium (V)	2009/05/25	123	75 - 125	93	75 - 125	<10	ug/L	NC	25
3142912	Total Boron (B)	2009/05/25			0	N/A	<50	ug/L	1.2	25
3142912	Total Aluminum (Al)	2009/05/25					<10	ug/L	NC	25
3142912	Total Antimony (Sb)	2009/05/25					<0.5	ug/L	NC	25
3142912	Total Bismuth (Bi)	2009/05/25					<1	ug/L	NC	25
3142912	Total Molybdenum (Mo)	2009/05/25					<1	ug/L	0.7	25
3142912	Total Silicon (Si)	2009/05/25					<100	ug/L	3.2	25
3142912	Total Silver (Ag)	2009/05/25					<0.05	ug/L	NC	25
3142912	Total Thallium (Tl)	2009/05/25					<0.1	ug/L	NC	25
3142912	Total Tin (Sn)	2009/05/25					<1	ug/L	NC	25
3142915	Dissolved Arsenic (As)	2009/05/25	108	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Barium (Ba)	2009/05/25	101	75 - 125	94	75 - 125	<1	ug/L	1.8	25
3142915	Dissolved Beryllium (Be)	2009/05/25	116	75 - 125	107	75 - 125	<1	ug/L	NC	25
3142915	Dissolved Chromium (Cr)	2009/05/25	124	75 - 125	101	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Lithium (Li)	2009/05/25	NC	75 - 125	109	75 - 125	<20	ug/L	0.6	25

Maxxam Job #: A923281
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3142915	Dissolved Selenium (Se)	2009/05/25	98	75 - 125	89	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Strontium (Sr)	2009/05/25	NC	75 - 125	89	75 - 125	<10	ug/L	1.6	25
3142915	Dissolved Titanium (Ti)	2009/05/25	125	75 - 125	101	75 - 125	<10	ug/L	NC	25
3142915	Dissolved Uranium (U)	2009/05/25	101	75 - 125	98	75 - 125	<0.05	ug/L	0.5	25
3142915	Dissolved Vanadium (V)	2009/05/25	120	75 - 125	94	75 - 125	<10	ug/L	NC	25
3142915	Dissolved Aluminum (Al)	2009/05/25					<10	ug/L	NC	25
3142915	Dissolved Antimony (Sb)	2009/05/25					<0.5	ug/L	NC	25
3142915	Dissolved Bismuth (Bi)	2009/05/25					<1	ug/L	NC	25
3142915	Dissolved Boron (B)	2009/05/25					<50	ug/L	0.9	25
3142915	Dissolved Molybdenum (Mo)	2009/05/25					<1	ug/L	2.3	25
3142915	Dissolved Silicon (Si)	2009/05/25					<100	ug/L	4.4	25
3142915	Dissolved Silver (Ag)	2009/05/25					<0.05	ug/L	NC	25
3142915	Dissolved Thallium (Tl)	2009/05/25					<0.1	ug/L	NC	25
3142915	Dissolved Tin (Sn)	2009/05/25					<1	ug/L	NC	25
3146988	Total Calcium (Ca)	2009/05/25					<1	mg/L	0.3	25
3146988	Total Magnesium (Mg)	2009/05/25					<1	mg/L	0.1	25
3146988	Total Potassium (K)	2009/05/25					<1	mg/L	0.5	25
3146988	Total Sodium (Na)	2009/05/25					<1	mg/L	5.3	25
3146988	Total Sulphur (S)	2009/05/25					<20	mg/L	0.3	25
3146990	Dissolved Calcium (Ca)	2009/05/25					<1	mg/L	1.2	25
3146990	Dissolved Magnesium (Mg)	2009/05/25					<1	mg/L	1	25
3146990	Dissolved Potassium (K)	2009/05/25					<1	mg/L	1.4	25
3146990	Dissolved Sodium (Na)	2009/05/25					<1	mg/L	4.0	25
3146990	Dissolved Sulphur (S)	2009/05/25					<20	mg/L	0.3	25

N/A = Not Applicable
NC = Non-calculable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference

A923291

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

№ 1340 page 1 of 1

Golder Associates

2640 Douglas Street
Victoria, British Columbia, Canada V8T 4M1
Telephone 250-881-7372 Fax 250-881-7470

Project Number: 09-1421-0028		Laboratory Name: Maxxam
[redacted]		Address: 8577 Commerce Ct. Burnaby
Golder Contact: E. Irving	Golder E-mail Address: eirving @golder.com	Telephone/Fax: 604-444-4808
		Contact: Elaine Cousins

Office the final reports should be sent to: Quote: A80018 Metals by Chelation

- [x] 500 – 4260 Still Creek Dr. Burnaby, B.C. V5C 6C6 Tel: 604-298-6623 Fax: 604-298-5253
- [ ] 202 – 2790 Gladwin Road Abbotsford, B.C. V2T 4S8 Tel: 604-850-8786 Fax: 604-850-8756
- [ ] 2640 Douglas Street Victoria, B.C. V8T 4M1 Tel: 250-881-7372 Fax: 250-881-7470

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D / M / Y)	[redacted]	Number of Containers	Total Metals Marine Method	Dissolved Metals Marine Method	Major Cations Hardness							RUSH	Remarks (over)
1340-01		H2O	11/05/09		2	✓	✓	✓								DIS as per quote
1340-02		"	"		2	✓	✓	✓								"
1340-03		"	"		2	✓	✓	✓								"
-04																
-05																
-06																
-07																
-08																
-09																
-10																
-11																
-12																

Analyses Required

Attn Elaine Cousins

Sampler's Signature: Virginia Chant	Relinquished by: Signature: Virginia Chant	Company: Golder	Date: May 14, 09	Time: 3:00pm	Received by: Signature	Company
Sample Storage (°C): 4°C	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Comments:	Method of Shipment: ~~FAX~~ Courier	Waybill No.: D007826594	Received for Lab by:	Date	Time	
	Shipped by: DHL	Shipment Condition: Seal Intact:	Temp (°C): 5.2.6	Cooler opened by: AMD	Date: May 15/09	Time: 7:20

WHITE: Golder Copy YELLOW: Lab Copy PINK: Lab Returns with Final Report * Bill CRD Directly *

Your Project #: 09-1421-0028
Your C.O.C. #: 1344

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/05/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A923284
Received: 2009/05/15, 07:20

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	3	N/A	2009/05/26		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	3	N/A	2009/05/22	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	3	N/A	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	3	N/A	2009/05/22	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2009/05/22	2009/05/25	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	3	2009/05/22	2009/05/25	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	3	N/A	2009/05/19	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Elaine Cousins
26 May 2009 15:52:15 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A923284
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		O83544	O83545	O83546		
Sampling Date		2009/05/11	2009/05/11	2009/05/11		
	Units	**1344-01**	**1344-02**	**1344-03**	**RDL**	**QC Batch**
Preparation						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	N/A	ONSITE
Misc. Inorganics						
Dissolved Hardness (CaCO3)	mg/L	7040	7160	7010	0.5	3132716

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A923284
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		O83544	O83545	O83546		
Sampling Date		2009/05/11	2009/05/11	2009/05/11		
	Units	**1344-01**	**1344-02**	**1344-03**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	<10	<10	18	10	3142915
Dissolved Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Arsenic (As)	ug/L	2.1	1.9	1.8	0.5	3142915
Dissolved Barium (Ba)	ug/L	9	8	8	1	3142915
Dissolved Beryllium (Be)	ug/L	<1	<1	<1	1	3142915
Dissolved Bismuth (Bi)	ug/L	<1	<1	<1	1	3142915
Dissolved Boron (B)	ug/L	4030	4240	4070	50	3142915
Dissolved Cadmium (Cd)	ug/L	0.07	0.07	0.06	0.01	3138035
Dissolved Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3138035
Dissolved Copper (Cu)	ug/L	0.22	0.31	0.32	0.05	3138035
Dissolved Iron (Fe)	ug/L	2	2	2	1	3138035
Dissolved Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3138035
Dissolved Lithium (Li)	ug/L	183	181	174	20	3142915
Dissolved Manganese (Mn)	ug/L	1.1	1.2	1.3	0.2	3138035
Dissolved Molybdenum (Mo)	ug/L	10	10	9	1	3142915
Dissolved Nickel (Ni)	ug/L	0.34	0.38	0.37	0.05	3138035
Dissolved Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3142915
Dissolved Silicon (Si)	ug/L	1440	1160	1180	100	3142915
Dissolved Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3142915
Dissolved Strontium (Sr)	ug/L	7560	6980	6610	10	3142915
Dissolved Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3142915
Dissolved Tin (Sn)	ug/L	<1	<1	<1	1	3142915
Dissolved Titanium (Ti)	ug/L	<10	<10	<10	10	3142915
Dissolved Uranium (U)	ug/L	2.50	2.39	2.38	0.05	3142915
Dissolved Vanadium (V)	ug/L	<10	<10	<10	10	3142915
Dissolved Zinc (Zn)	ug/L	0.5	1.1	0.6	0.5	3138035
Dissolved Calcium (Ca)	mg/L	473	452	440	1	3146990
Dissolved Magnesium (Mg)	mg/L	1420	1460	1440	1	3146990
Dissolved Potassium (K)	mg/L	426	412	402	1	3146990
Dissolved Sodium (Na)	mg/L	11600	10200	10300	1	3146990
Dissolved Sulphur (S)	mg/L	1110	1070	1050	20	3146990

RDL = Reportable Detection Limit

Maxxam Job #: A923284
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		O83544	O83545	O83546		
Sampling Date		2009/05/11	2009/05/11	2009/05/11		
	Units	**1344-01**	**1344-02**	**1344-03**	**RDL**	**QC Batch**
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	74	29	28	10	3142912
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3142912
Total Arsenic (As)	ug/L	2.0	2.7	2.4	0.5	3142912
Total Barium (Ba)	ug/L	9	9	9	1	3142912
Total Beryllium (Be)	ug/L	<1	<1	<1	1	3142912
Total Bismuth (Bi)	ug/L	<1	<1	<1	1	3142912
Total Boron (B)	ug/L	4190	3720	4000	50	3142912
Total Cadmium (Cd)	ug/L	0.06	0.06	0.07	0.01	3138046
Total Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3142912
Total Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3138046
Total Copper (Cu)	ug/L	0.27	0.26	0.26	0.05	3138046
Total Iron (Fe)	ug/L	23	17	16	1	3138046
Total Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3138046
Total Lithium (Li)	ug/L	186	175	180	20	3142912
Total Manganese (Mn)	ug/L	1.9	1.6	1.9	0.2	3138046
Total Molybdenum (Mo)	ug/L	10	12	12	1	3142912
Total Nickel (Ni)	ug/L	0.37	0.43	0.42	0.05	3138046
Total Selenium (Se)	ug/L	<0.5	5.8	3.1	0.5	3142912
Total Silicon (Si)	ug/L	1490	1500	1610	100	3142912
Total Silver (Ag)	ug/L	<0.05	0.55	0.19	0.05	3142912
Total Strontium (Sr)	ug/L	7190	7760	7990	10	3142912
Total Thallium (Tl)	ug/L	<0.1	0.7	0.3	0.1	3142912
Total Tin (Sn)	ug/L	<1	<1	<1	1	3142912
Total Titanium (Ti)	ug/L	<10	<10	<10	10	3142912
Total Uranium (U)	ug/L	2.43	2.62	2.67	0.05	3142912
Total Vanadium (V)	ug/L	<10	<10	<10	10	3142912
Total Zinc (Zn)	ug/L	<0.5	1.1	0.5	0.5	3138046
Total Calcium (Ca)	mg/L	469	471	510	1	3146988
Total Magnesium (Mg)	mg/L	1440	1340	1460	1	3146988
Total Potassium (K)	mg/L	425	427	460	1	3146988
Total Sodium (Na)	mg/L	11200	10300	10300	1	3146988
Total Sulphur (S)	mg/L	1130	1130	1210	20	3146988

RDL = Reportable Detection Limit

Maxxam Job #: A923284
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3138035	Dissolved Cadmium (Cd)	2009/05/22	92	75 - 125	92	75 - 125	<0.01	ug/L	22.4	25
3138035	Dissolved Cobalt (Co)	2009/05/22	100	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3138035	Dissolved Copper (Cu)	2009/05/22	91	75 - 125	99	75 - 125	0.19, RDL=0.05	ug/L	NC	25
3138035	Dissolved Lead (Pb)	2009/05/22	91	75 - 125	88	75 - 125	<0.05	ug/L	NC	25
3138035	Dissolved Nickel (Ni)	2009/05/22	98	75 - 125	97	75 - 125	0.06, RDL=0.05	ug/L	20.5	25
3138035	Dissolved Zinc (Zn)	2009/05/22	91	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3138035	Dissolved Iron (Fe)	2009/05/22					<1	ug/L	NC	25
3138035	Dissolved Manganese (Mn)	2009/05/22					<0.2	ug/L	NC	25
3138046	Total Cadmium (Cd)	2009/05/22	85	75 - 125	84	75 - 125	<0.01	ug/L	17.7	25
3138046	Total Cobalt (Co)	2009/05/22	97	75 - 125	90	75 - 125	<0.05	ug/L	NC	25
3138046	Total Copper (Cu)	2009/05/22	83	75 - 125	80	75 - 125	0.13, RDL=0.05	ug/L	NC	25
3138046	Total Lead (Pb)	2009/05/22	84	75 - 125	80	75 - 125	<0.05	ug/L	NC	25
3138046	Total Nickel (Ni)	2009/05/22	90	75 - 125	89	75 - 125	0.12, RDL=0.05	ug/L	15.4	25
3138046	Total Zinc (Zn)	2009/05/22	81	75 - 125	87	75 - 125	<0.5	ug/L	NC	25
3138046	Total Iron (Fe)	2009/05/22					<1	ug/L	24.0	25
3138046	Total Manganese (Mn)	2009/05/22					<0.2	ug/L	5.4	25
3142912	Total Arsenic (As)	2009/05/25	107	75 - 125	94	75 - 125	<0.5	ug/L	NC	25
3142912	Total Barium (Ba)	2009/05/25	101	75 - 125	98	75 - 125	<1	ug/L	0.7	25
3142912	Total Beryllium (Be)	2009/05/25	109	75 - 125	99	75 - 125	<1	ug/L	NC	25
3142912	Total Chromium (Cr)	2009/05/25	119	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3142912	Total Lithium (Li)	2009/05/25	NC	75 - 125	105	75 - 125	<20	ug/L	2.0	25
3142912	Total Selenium (Se)	2009/05/25	105	75 - 125	102	75 - 125	<0.5	ug/L	NC	25
3142912	Total Strontium (Sr)	2009/05/25	NC	75 - 125	95	75 - 125	<10	ug/L	1.8	25
3142912	Total Titanium (Ti)	2009/05/25	123	75 - 125	100	75 - 125	<10	ug/L	NC	25
3142912	Total Uranium (U)	2009/05/25	96	75 - 125	102	75 - 125	<0.05	ug/L	4.8	25
3142912	Total Vanadium (V)	2009/05/25	123	75 - 125	93	75 - 125	<10	ug/L	NC	25
3142912	Total Boron (B)	2009/05/25			0	N/A	<50	ug/L	1.2	25
3142912	Total Aluminum (Al)	2009/05/25					<10	ug/L	NC	25
3142912	Total Antimony (Sb)	2009/05/25					<0.5	ug/L	NC	25
3142912	Total Bismuth (Bi)	2009/05/25					<1	ug/L	NC	25
3142912	Total Molybdenum (Mo)	2009/05/25					<1	ug/L	0.7	25
3142912	Total Silicon (Si)	2009/05/25					<100	ug/L	3.2	25
3142912	Total Silver (Ag)	2009/05/25					<0.05	ug/L	NC	25
3142912	Total Thallium (Tl)	2009/05/25					<0.1	ug/L	NC	25
3142912	Total Tin (Sn)	2009/05/25					<1	ug/L	NC	25
3142915	Dissolved Arsenic (As)	2009/05/25	108	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Barium (Ba)	2009/05/25	101	75 - 125	94	75 - 125	<1	ug/L	0.06	25
3142915	Dissolved Beryllium (Be)	2009/05/25	116	75 - 125	107	75 - 125	<1	ug/L	NC	25
3142915	Dissolved Chromium (Cr)	2009/05/25	124	75 - 125	101	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Lithium (Li)	2009/05/25	NC	75 - 125	109	75 - 125	<20	ug/L	2.6	25

Maxxam Job #: A923284
Report Date: 2009/05/26

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3142915	Dissolved Selenium (Se)	2009/05/25	98	75 - 125	89	75 - 125	<0.5	ug/L	NC	25
3142915	Dissolved Strontium (Sr)	2009/05/25	NC	75 - 125	89	75 - 125	<10	ug/L	3.7	25
3142915	Dissolved Titanium (Ti)	2009/05/25	125	75 - 125	101	75 - 125	<10	ug/L	NC	25
3142915	Dissolved Uranium (U)	2009/05/25	101	75 - 125	98	75 - 125	<0.05	ug/L	0.5	25
3142915	Dissolved Vanadium (V)	2009/05/25	120	75 - 125	94	75 - 125	<10	ug/L	NC	25
3142915	Dissolved Aluminum (Al)	2009/05/25					<10	ug/L	NC	25
3142915	Dissolved Antimony (Sb)	2009/05/25					<0.5	ug/L	NC	25
3142915	Dissolved Bismuth (Bi)	2009/05/25					<1	ug/L	NC	25
3142915	Dissolved Boron (B)	2009/05/25					<50	ug/L	2.9	25
3142915	Dissolved Molybdenum (Mo)	2009/05/25					<1	ug/L	7.2	25
3142915	Dissolved Silicon (Si)	2009/05/25					<100	ug/L	0.8	25
3142915	Dissolved Silver (Ag)	2009/05/25					<0.05	ug/L	NC	25
3142915	Dissolved Thallium (Tl)	2009/05/25					<0.1	ug/L	NC	25
3142915	Dissolved Tin (Sn)	2009/05/25					<1	ug/L	NC	25
3146988	Total Calcium (Ca)	2009/05/25					<1	mg/L	0.3	25
3146988	Total Magnesium (Mg)	2009/05/25					<1	mg/L	0.1	25
3146988	Total Potassium (K)	2009/05/25					<1	mg/L	0.5	25
3146988	Total Sodium (Na)	2009/05/25					<1	mg/L	5.3	25
3146988	Total Sulphur (S)	2009/05/25					<20	mg/L	0.3	25
3146990	Dissolved Calcium (Ca)	2009/05/25					<1	mg/L	3.6	25
3146990	Dissolved Magnesium (Mg)	2009/05/25					<1	mg/L	2.4	25
3146990	Dissolved Potassium (K)	2009/05/25					<1	mg/L	2.4	25
3146990	Dissolved Sodium (Na)	2009/05/25					<1	mg/L	5.2	25
3146990	Dissolved Sulphur (S)	2009/05/25					<20	mg/L	2.0	25

N/A = Not Applicable
NC = Non-calculable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference

A923284

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

№ 1344 page 1 of 1

Golder Associates

2640 Douglas Street
Victoria, British Columbia, Canada V8T 4M1
Telephone 250-881-7372 Fax 250-881-7470

Project Number: 09-1421-0018		Laboratory Name: Maxxam	
		Address: 8577 Commerce Ct. Burnaby	
Golder Contact: E. Irving	Golder E-mail Address: eirving @golder.com	Telephone/Fax: 604-444-4808	Contact: Elaine Cousins

Office the final reports should be sent to: Quote : A80018 Metals by Chelation

- ☒ 500 – 4260 Still Creek Dr. Burnaby, B.C. V5C 6C6 Tel: 604-298-6623 Fax: 604-298-5253
- ☐ 202 – 2790 Gladwin Road Abbotsford, B.C. V2T 4S8 Tel: 604-850-8786 Fax: 604-850-8756
- ☐ 2640 Douglas Street Victoria, B.C. V8T 4M1 Tel: 250-881-7372 Fax: 250-881-7470

Attn Elaine Cousins

Sample Control Number (SCN)	Sample Matrix (over)	Date Sampled (D / M / Y)	Number of Containers	Analyses Required: Total Metals Marine Method	Dissolved Metals Marine Method	Major Cations Hardness	RUSH	Remarks (over)
1344 -01	H_2O	11/05/09	2	✓	✓	✓		DCS as per quote
1344 -02	"	"	2	✓	✓	✓		"
1344 -03	"	"	2	✓	✓	✓		"
-04								
-05								
-06								
-07								
-08								
-09								
-10								
-11								
-12								

Sampler's Signature: Virginia Grant	Relinquished by: Signature: Virginia Grant	Company: Golder	Date: May 14, 09	Time: 3:00PM	Received by: Signature	Company
Sample Storage (°C): 4°C	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company

Comments:	Method of Shipment: Courier	Waybill No.: D007826594	Received for Lab by:		Date	Time
	Shipped by: DHL	Shipment Condition: Seal Intact:	Temp (°C): 5.2	Cooler opened by: AMD	Date: May 15/09	Time: 7:20

WHITE: Golder Copy YELLOW: Lab Copy PINK: Lab Returns with Final Report * Bill CRD Directly *

Your Project #: 09-1421-0028
Your C.O.C. #: 1373

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/05/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A924173
Received: 2009/05/22, 07:40

Sample Matrix: Sea Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	3	N/A	2009/05/29		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2009/05/29	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	3	N/A	2009/05/27	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	3	N/A	2009/05/29	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	3	N/A	2009/05/27	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2009/05/28	2009/05/29	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	3	2009/05/28	2009/05/29	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	3	N/A	2009/05/28	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A924173
Report Date: 2009/05/29

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

RESULTS OF CHEMICAL ANALYSES OF SEA WATER

Maxxam ID		O89075	O89076	O89077		
Sampling Date		2009/05/15	2009/05/15	2009/05/15		
	Units	**1373-01**	**1373-02**	**1373-03**	**RDL**	**QC Batch**
Preparation						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	N/A	ONSITE
Misc. Inorganics						
Dissolved Hardness (CaCO3)	mg/L	5920	6920	6910	0.5	3144007

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A924173
Report Date: 2009/05/29

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O89075	O89076	O89077		
Sampling Date		2009/05/15	2009/05/15	2009/05/15		
	Units	**1373-01**	**1373-02**	**1373-03**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	<10	<10	<10	10	3154500
Dissolved Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3154500
Dissolved Arsenic (As)	ug/L	1.6	1.7	2.0	0.5	3154500
Dissolved Barium (Ba)	ug/L	8	8	9	1	3154500
Dissolved Beryllium (Be)	ug/L	<1	<1	<1	1	3154500
Dissolved Bismuth (Bi)	ug/L	<1	<1	<1	1	3154500
Dissolved Boron (B)	ug/L	3340	3700	3760	50	3154500
Dissolved Cadmium (Cd)	ug/L	0.06	0.07	0.07	0.01	3147202
Dissolved Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3154500
Dissolved Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3147202
Dissolved Copper (Cu)	ug/L	0.42	0.41	0.41	0.05	3147202
Dissolved Iron (Fe)	ug/L	3	1	2	1	3147202
Dissolved Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3147202
Dissolved Lithium (Li)	ug/L	159	176	178	20	3154500
Dissolved Manganese (Mn)	ug/L	1.4	1.0	1.0	0.2	3147202
Dissolved Molybdenum (Mo)	ug/L	9	10	10	1	3154500
Dissolved Nickel (Ni)	ug/L	0.47	0.42	0.51	0.05	3147202
Dissolved Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3154500
Dissolved Silicon (Si)	ug/L	1420	1650	1610	100	3154500
Dissolved Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3154500
Dissolved Strontium (Sr)	ug/L	6420	7170	7250	10	3154500
Dissolved Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3154500
Dissolved Tin (Sn)	ug/L	<1	<1	<1	1	3154500
Dissolved Titanium (Ti)	ug/L	<10	<10	<10	10	3154500
Dissolved Uranium (U)	ug/L	2.02	2.43	2.32	0.05	3154500
Dissolved Vanadium (V)	ug/L	<10	<10	<10	10	3154500
Dissolved Zinc (Zn)	ug/L	1.7	1.9	2.0	0.5	3147202
Dissolved Calcium (Ca)	mg/L	408	471	470	1	3156967
Dissolved Magnesium (Mg)	mg/L	1190	1400	1390	1	3156967
Dissolved Potassium (K)	mg/L	365	421	422	1	3156967
Dissolved Sodium (Na)	mg/L	9900	11600	11600	1	3156967
Dissolved Sulphur (S)	mg/L	954	1110	1110	20	3156967

RDL = Reportable Detection Limit

Maxxam Job #: A924173
Report Date: 2009/05/29

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O89075	O89076	O89077		
Sampling Date		2009/05/15	2009/05/15	2009/05/15		
	Units	**1373-01**	**1373-02**	**1373-03**	**RDL**	**QC Batch**
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	21	20	18	10	3154569
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3154569
Total Arsenic (As)	ug/L	1.9	1.9	1.9	0.5	3154569
Total Barium (Ba)	ug/L	8	9	8	1	3154569
Total Beryllium (Be)	ug/L	<1	<1	<1	1	3154569
Total Bismuth (Bi)	ug/L	<1	<1	<1	1	3154569
Total Boron (B)	ug/L	3530	3770	3770	50	3154569
Total Cadmium (Cd)	ug/L	0.06	0.06	0.07	0.01	3147205
Total Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3154569
Total Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3147205
Total Copper (Cu)	ug/L	0.39	0.50	0.41	0.05	3147205
Total Iron (Fe)	ug/L	12	13	14	1	3147205
Total Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3147205
Total Lithium (Li)	ug/L	170	178	179	20	3154569
Total Manganese (Mn)	ug/L	1.9	1.3	1.6	0.2	3147205
Total Molybdenum (Mo)	ug/L	9	9	10	1	3154569
Total Nickel (Ni)	ug/L	0.40	0.35	0.41	0.05	3147205
Total Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3154569
Total Silicon (Si)	ug/L	1470	1690	1650	100	3154569
Total Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3154569
Total Strontium (Sr)	ug/L	6570	6950	7020	10	3154569
Total Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3154569
Total Tin (Sn)	ug/L	<1	<1	<1	1	3154569
Total Titanium (Ti)	ug/L	<10	<10	<10	10	3154569
Total Uranium (U)	ug/L	2.16	2.27	2.55	0.05	3154569
Total Vanadium (V)	ug/L	<10	<10	<10	10	3154569
Total Zinc (Zn)	ug/L	1.7	1.6	1.6	0.5	3147205
Total Calcium (Ca)	mg/L	425	450	453	1	3156975
Total Magnesium (Mg)	mg/L	1310	1400	1420	1	3156975
Total Potassium (K)	mg/L	390	413	417	1	3156975
Total Sodium (Na)	mg/L	11200	10300	10400	1	3156975
Total Sulphur (S)	mg/L	1020	1100	1110	20	3156975

RDL = Reportable Detection Limit

Maxxam Job #: A924173
Report Date: 2009/05/29

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3147202	Dissolved Cadmium (Cd)	2009/05/27	91	75 - 125	95	75 - 125	<0.01	ug/L	NC	25
3147202	Dissolved Cobalt (Co)	2009/05/27	90	75 - 125	95	75 - 125	<0.05	ug/L		
3147202	Dissolved Copper (Cu)	2009/05/27	90	75 - 125	100	75 - 125	0.21, RDL=0.05	ug/L		
3147202	Dissolved Lead (Pb)	2009/05/27	94	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3147202	Dissolved Nickel (Ni)	2009/05/27	94	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3147202	Dissolved Zinc (Zn)	2009/05/27	100	75 - 125	98	75 - 125	<0.5	ug/L	NC	25
3147202	Dissolved Iron (Fe)	2009/05/27					<1	ug/L	NC	25
3147202	Dissolved Manganese (Mn)	2009/05/27					<0.2	ug/L		
3147205	Total Cadmium (Cd)	2009/05/27	92	75 - 125	93	75 - 125	<0.01	ug/L	NC	25
3147205	Total Cobalt (Co)	2009/05/27	90	75 - 125	91	75 - 125	<0.05	ug/L		
3147205	Total Copper (Cu)	2009/05/27	92	75 - 125	95	75 - 125	0.21, RDL=0.05	ug/L		
3147205	Total Lead (Pb)	2009/05/27	98	75 - 125	95	75 - 125	<0.05	ug/L	NC	25
3147205	Total Nickel (Ni)	2009/05/27	87	75 - 125	93	75 - 125	<0.05	ug/L	NC	25
3147205	Total Zinc (Zn)	2009/05/27	94	75 - 125	92	75 - 125	<0.5	ug/L	NC	25
3147205	Total Iron (Fe)	2009/05/27					<1	ug/L	NC	25
3147205	Total Manganese (Mn)	2009/05/27					<0.2	ug/L		
3154500	Dissolved Arsenic (As)	2009/05/29	106	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3154500	Dissolved Barium (Ba)	2009/05/29	100	75 - 125	96	75 - 125	<1	ug/L	2.7	25
3154500	Dissolved Beryllium (Be)	2009/05/29	93	75 - 125	98	75 - 125	<1	ug/L	NC	25
3154500	Dissolved Chromium (Cr)	2009/05/29	116	75 - 125	100	75 - 125	<0.5	ug/L	NC	25
3154500	Dissolved Lithium (Li)	2009/05/29	NC	75 - 125	99	75 - 125	<20	ug/L	4.5	25
3154500	Dissolved Selenium (Se)	2009/05/29	101	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3154500	Dissolved Strontium (Sr)	2009/05/29	NC	75 - 125	94	75 - 125	<10	ug/L	3.8	25
3154500	Dissolved Titanium (Ti)	2009/05/29	119	75 - 125	103	75 - 125	<10	ug/L	NC	25
3154500	Dissolved Uranium (U)	2009/05/29	96	75 - 125	99	75 - 125	<0.05	ug/L	6.6	25
3154500	Dissolved Vanadium (V)	2009/05/29	119	75 - 125	97	75 - 125	<10	ug/L	NC	25
3154500	Dissolved Aluminum (Al)	2009/05/29					<10	ug/L	NC	25
3154500	Dissolved Antimony (Sb)	2009/05/29					<0.5	ug/L	NC	25
3154500	Dissolved Bismuth (Bi)	2009/05/29					<1	ug/L	NC	25
3154500	Dissolved Boron (B)	2009/05/29					<50	ug/L	4.8	25
3154500	Dissolved Molybdenum (Mo)	2009/05/29					<1	ug/L	3.5	25
3154500	Dissolved Silicon (Si)	2009/05/29					<100	ug/L	8.9	25
3154500	Dissolved Silver (Ag)	2009/05/29					<0.05	ug/L	NC	25
3154500	Dissolved Thallium (Tl)	2009/05/29					<0.1	ug/L	NC	25
3154500	Dissolved Tin (Sn)	2009/05/29					<1	ug/L	NC	25
3154569	Total Arsenic (As)	2009/05/29	104	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3154569	Total Barium (Ba)	2009/05/29	98	75 - 125	98	75 - 125	<1	ug/L	5.2	25
3154569	Total Beryllium (Be)	2009/05/29	96	75 - 125	103	75 - 125	<1	ug/L	NC	25
3154569	Total Chromium (Cr)	2009/05/29	115	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3154569	Total Lithium (Li)	2009/05/29	NC	75 - 125	103	75 - 125	<20	ug/L	0.8	25

Maxxam Job #: A924173
Report Date: 2009/05/29

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3154569	Total Selenium (Se)	2009/05/29	101	75 - 125	98	75 - 125	<0.5	ug/L	NC	25
3154569	Total Strontium (Sr)	2009/05/29	NC	75 - 125	93	75 - 125	<10	ug/L	0.9	25
3154569	Total Titanium (Ti)	2009/05/29	116	75 - 125	92	75 - 125	<10	ug/L	NC	25
3154569	Total Uranium (U)	2009/05/29	97	75 - 125	104	75 - 125	<0.05	ug/L	2.7	25
3154569	Total Vanadium (V)	2009/05/29	120	75 - 125	95	75 - 125	<10	ug/L	NC	25
3154569	Total Aluminum (Al)	2009/05/29					<10	ug/L	NC	25
3154569	Total Antimony (Sb)	2009/05/29					<0.5	ug/L	NC	25
3154569	Total Bismuth (Bi)	2009/05/29					<1	ug/L	NC	25
3154569	Total Boron (B)	2009/05/29					<50	ug/L	0.7	25
3154569	Total Molybdenum (Mo)	2009/05/29					<1	ug/L	3.6	25
3154569	Total Silicon (Si)	2009/05/29					<100	ug/L	2.4	25
3154569	Total Silver (Ag)	2009/05/29					<0.05	ug/L	NC	25
3154569	Total Thallium (Tl)	2009/05/29					<0.1	ug/L	NC	25
3154569	Total Tin (Sn)	2009/05/29					<1	ug/L	NC	25
3156967	Dissolved Calcium (Ca)	2009/05/29					<1	mg/L	5.3	25
3156967	Dissolved Magnesium (Mg)	2009/05/29					<1	mg/L	6.2	25
3156967	Dissolved Potassium (K)	2009/05/29					<1	mg/L	5.0	25
3156967	Dissolved Sodium (Na)	2009/05/29					<1	mg/L	6.1	25
3156967	Dissolved Sulphur (S)	2009/05/29					<20	mg/L	5.3	25
3156975	Total Calcium (Ca)	2009/05/29					<1	mg/L	0.3	25
3156975	Total Magnesium (Mg)	2009/05/29					<1	mg/L	1.1	25
3156975	Total Potassium (K)	2009/05/29					<1	mg/L	0.2	25
3156975	Total Sodium (Na)	2009/05/29					<1	mg/L	1.7	25
3156975	Total Sulphur (S)	2009/05/29					<20	mg/L	1.7	25

N/A = Not Applicable
NC = Non-calculable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference

A924173

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

№ 1373 page 1 of 1

Golder Associates

2640 Douglas Street
Victoria, British Columbia, Canada V8T 4M1
Telephone 250-881-7372 Fax 250-881-7470

Project Number:		Laboratory Name:	
09-1421-0028		Maxxam	
		Address: 8577 Commerce Ct. Burnaby	
Golder Contact: E. Irving	Golder E-mail Address: eirving @golder.com	Telephone/Fax: 604-444-4808	Contact: Elaine Cousins

Office the final reports should be sent to: Quote : A80018 Metals by Chelation

- ☑ 500 – 4260 Still Creek Dr., Burnaby, B.C., V5C 6C6, Tel: 604-298-6623, Fax: 604-298-5253
- ☐ 202 – 2790 Gladwin Road, Abbotsford, B.C., V2T 4S8, Tel: 604-850-8786, Fax: 604-850-8756
- ☐ 2640 Douglas Street, Victoria, B.C., V8T 4M1, Tel: 250-881-7372, Fax: 250-881-7470

Attn: Elaine Cousins

Sample Control Number (SCN)	Sample Matrix (over)	Date Sampled (D / M / Y)	Number of Containers	Total Metals Marine Method	Dissolved Metals Marine Method	Major cations Hardness	RUSH	Remarks (over)
1373 -01	H_2O	15/05/09	2	✓	✓	✓		Dis as per quote
1373 -02	"	"	2	✓	✓	✓		"
1373 -03	"	"	2	✓	✓	✓		"
-04								
-05								
-06								
-07								
-08								
-09								
-10								
-11								
-12								

Sampler's Signature: Virginia Chant	Relinquished by: Signature: Virginia Chant	Company: Golder	Date: May 21, 09	Time: 15:00	Received by: Signature	Company
Sample Storage (°C): 4°	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company

Comments:	Method of Shipment: Courier	Waybill No.: D0078 26595	Received for Lab by:	Date	Time
	Shipped by: DHL	Shipment Condition: Seal Intact:	Temp (°C): 5, 5, 5	Cooler opened by: AMD	Date: May 22/09	Time: 7:40

WHITE: Golder Copy YELLOW: Lab Copy PINK: Lab Returns with Final Report * Bill CRD Directly *

Your Project #: 09-1421-0028
Your C.O.C. #: 1375

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/05/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A924177
Received: 2009/05/22, 07:40

Sample Matrix: Sea Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	3	N/A	2009/05/29		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2009/05/29	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	3	N/A	2009/05/27	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	3	N/A	2009/05/29	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	3	N/A	2009/05/27	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2009/05/28	2009/05/29	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	3	2009/05/28	2009/05/29	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	1	N/A	N/A	BRN WI-00006 R1.0	Based on EPA 200.2
Filter and HNO3 Preserve for Metals	2	N/A	2009/05/28	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Elaine Cousins
29 May 2009 14:54:34 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A924177
Report Date: 2009/05/29

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

RESULTS OF CHEMICAL ANALYSES OF SEA WATER

Maxxam ID		O89092	O89093	O89094		
Sampling Date		2009/05/21	2009/05/21	2009/05/21		
	Units	**1375-01**	**1375-02**	**1375-03**	**RDL**	**QC Batch**
Preparation						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	N/A	ONSITE
Misc. Inorganics						
Dissolved Hardness (CaCO3)	mg/L	6800	7060	7020	0.5	3144007

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A924177
Report Date: 2009/05/29

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O89092	O89093	O89094		
Sampling Date		2009/05/21	2009/05/21	2009/05/21		
	Units	**1375-01**	**1375-02**	**1375-03**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	<10	<10	<10	10	3154500
Dissolved Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3154500
Dissolved Arsenic (As)	ug/L	1.8	2.0	2.0	0.5	3154500
Dissolved Barium (Ba)	ug/L	8	8	8	1	3154500
Dissolved Beryllium (Be)	ug/L	<1	<1	<1	1	3154500
Dissolved Bismuth (Bi)	ug/L	<1	<1	<1	1	3154500
Dissolved Boron (B)	ug/L	3700	3850	3790	50	3154500
Dissolved Cadmium (Cd)	ug/L	0.07	0.07	0.07	0.01	3147202
Dissolved Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3154500
Dissolved Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3147202
Dissolved Copper (Cu)	ug/L	0.55	0.61	0.53	0.05	3147202
Dissolved Iron (Fe)	ug/L	2	2	2	1	3147202
Dissolved Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3147202
Dissolved Lithium (Li)	ug/L	177	185	181	20	3154500
Dissolved Manganese (Mn)	ug/L	0.9	0.9	0.8	0.2	3147202
Dissolved Molybdenum (Mo)	ug/L	10	10	10	1	3154500
Dissolved Nickel (Ni)	ug/L	0.50	0.62	0.44	0.05	3147202
Dissolved Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3154500
Dissolved Silicon (Si)	ug/L	1690	1670	1720	100	3154500
Dissolved Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3154500
Dissolved Strontium (Sr)	ug/L	7020	7380	7230	10	3154500
Dissolved Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3154500
Dissolved Tin (Sn)	ug/L	<1	<1	<1	1	3154500
Dissolved Titanium (Ti)	ug/L	<10	<10	<10	10	3154500
Dissolved Uranium (U)	ug/L	2.29	2.40	2.36	0.05	3154500
Dissolved Vanadium (V)	ug/L	<10	<10	<10	10	3154500
Dissolved Zinc (Zn)	ug/L	1.2	1.3	0.9	0.5	3147202
Dissolved Calcium (Ca)	mg/L	464	479	477	1	3156967
Dissolved Magnesium (Mg)	mg/L	1370	1420	1420	1	3156967
Dissolved Potassium (K)	mg/L	419	431	430	1	3156967
Dissolved Sodium (Na)	mg/L	11400	11800	11800	1	3156967
Dissolved Sulphur (S)	mg/L	1090	1130	1130	20	3156967

RDL = Reportable Detection Limit

Maxxam Job #: A924177
Report Date: 2009/05/29

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O89092	O89093	O89094		
Sampling Date		2009/05/21	2009/05/21	2009/05/21		
	Units	**1375-01**	**1375-02**	**1375-03**	**RDL**	**QC Batch**
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	14	20	21	10	3154569
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	3154569
Total Arsenic (As)	ug/L	1.9	1.8	1.9	0.5	3154569
Total Barium (Ba)	ug/L	9	8	9	1	3154569
Total Beryllium (Be)	ug/L	<1	<1	<1	1	3154569
Total Bismuth (Bi)	ug/L	<1	<1	<1	1	3154569
Total Boron (B)	ug/L	3910	3890	3940	50	3154569
Total Cadmium (Cd)	ug/L	0.09	0.07	0.09	0.01	3147205
Total Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	0.5	3154569
Total Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	0.05	3147205
Total Copper (Cu)	ug/L	0.46	0.54	0.51	0.05	3147205
Total Iron (Fe)	ug/L	8	17	16	1	3147205
Total Lead (Pb)	ug/L	<0.05	<0.05	<0.05	0.05	3147205
Total Lithium (Li)	ug/L	186	185	186	20	3154569
Total Manganese (Mn)	ug/L	1.5	1.5	1.5	0.2	3147205
Total Molybdenum (Mo)	ug/L	10	10	10	1	3154569
Total Nickel (Ni)	ug/L	0.42	0.41	0.50	0.05	3147205
Total Selenium (Se)	ug/L	<0.5	<0.5	<0.5	0.5	3154569
Total Silicon (Si)	ug/L	1630	1710	1690	100	3154569
Total Silver (Ag)	ug/L	<0.05	<0.05	<0.05	0.05	3154569
Total Strontium (Sr)	ug/L	7150	7020	7120	10	3154569
Total Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	0.1	3154569
Total Tin (Sn)	ug/L	<1	<1	<1	1	3154569
Total Titanium (Ti)	ug/L	<10	<10	<10	10	3154569
Total Uranium (U)	ug/L	2.33	2.29	2.31	0.05	3154569
Total Vanadium (V)	ug/L	<10	<10	<10	10	3154569
Total Zinc (Zn)	ug/L	0.8	0.7	0.6	0.5	3147205
Total Calcium (Ca)	mg/L	471	453	468	1	3156975
Total Magnesium (Mg)	mg/L	1470	1420	1470	1	3156975
Total Potassium (K)	mg/L	432	420	430	1	3156975
Total Sodium (Na)	mg/L	10500	10600	10500	1	3156975
Total Sulphur (S)	mg/L	1130	1110	1130	20	3156975

RDL = Reportable Detection Limit

Maxxam Job #: A924177
Report Date: 2009/05/29

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3147202	Dissolved Cadmium (Cd)	2009/05/27	91	75 - 125	95	75 - 125	<0.01	ug/L	NC	25
3147202	Dissolved Cobalt (Co)	2009/05/27	90	75 - 125	95	75 - 125	<0.05	ug/L		
3147202	Dissolved Copper (Cu)	2009/05/27	90	75 - 125	100	75 - 125	0.21, RDL=0.05	ug/L		
3147202	Dissolved Lead (Pb)	2009/05/27	94	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3147202	Dissolved Nickel (Ni)	2009/05/27	94	75 - 125	98	75 - 125	<0.05	ug/L	NC	25
3147202	Dissolved Zinc (Zn)	2009/05/27	100	75 - 125	98	75 - 125	<0.5	ug/L	NC	25
3147202	Dissolved Iron (Fe)	2009/05/27					<1	ug/L	NC	25
3147202	Dissolved Manganese (Mn)	2009/05/27					<0.2	ug/L		
3147205	Total Cadmium (Cd)	2009/05/27	92	75 - 125	93	75 - 125	<0.01	ug/L	NC	25
3147205	Total Cobalt (Co)	2009/05/27	90	75 - 125	91	75 - 125	<0.05	ug/L		
3147205	Total Copper (Cu)	2009/05/27	92	75 - 125	95	75 - 125	0.21, RDL=0.05	ug/L		
3147205	Total Lead (Pb)	2009/05/27	98	75 - 125	95	75 - 125	<0.05	ug/L	NC	25
3147205	Total Nickel (Ni)	2009/05/27	87	75 - 125	93	75 - 125	<0.05	ug/L	NC	25
3147205	Total Zinc (Zn)	2009/05/27	94	75 - 125	92	75 - 125	<0.5	ug/L	NC	25
3147205	Total Iron (Fe)	2009/05/27					<1	ug/L	NC	25
3147205	Total Manganese (Mn)	2009/05/27					<0.2	ug/L		
3154500	Dissolved Arsenic (As)	2009/05/29	106	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3154500	Dissolved Barium (Ba)	2009/05/29	100	75 - 125	96	75 - 125	<1	ug/L	2.7	25
3154500	Dissolved Beryllium (Be)	2009/05/29	93	75 - 125	98	75 - 125	<1	ug/L	NC	25
3154500	Dissolved Chromium (Cr)	2009/05/29	116	75 - 125	100	75 - 125	<0.5	ug/L	NC	25
3154500	Dissolved Lithium (Li)	2009/05/29	NC	75 - 125	99	75 - 125	<20	ug/L	4.5	25
3154500	Dissolved Selenium (Se)	2009/05/29	101	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3154500	Dissolved Strontium (Sr)	2009/05/29	NC	75 - 125	94	75 - 125	<10	ug/L	3.8	25
3154500	Dissolved Titanium (Ti)	2009/05/29	119	75 - 125	103	75 - 125	<10	ug/L	NC	25
3154500	Dissolved Uranium (U)	2009/05/29	96	75 - 125	99	75 - 125	<0.05	ug/L	6.6	25
3154500	Dissolved Vanadium (V)	2009/05/29	119	75 - 125	97	75 - 125	<10	ug/L	NC	25
3154500	Dissolved Aluminum (Al)	2009/05/29					<10	ug/L	NC	25
3154500	Dissolved Antimony (Sb)	2009/05/29					<0.5	ug/L	NC	25
3154500	Dissolved Bismuth (Bi)	2009/05/29					<1	ug/L	NC	25
3154500	Dissolved Boron (B)	2009/05/29					<50	ug/L	4.8	25
3154500	Dissolved Molybdenum (Mo)	2009/05/29					<1	ug/L	3.5	25
3154500	Dissolved Silicon (Si)	2009/05/29					<100	ug/L	8.9	25
3154500	Dissolved Silver (Ag)	2009/05/29					<0.05	ug/L	NC	25
3154500	Dissolved Thallium (Tl)	2009/05/29					<0.1	ug/L	NC	25
3154500	Dissolved Tin (Sn)	2009/05/29					<1	ug/L	NC	25
3154569	Total Arsenic (As)	2009/05/29	104	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3154569	Total Barium (Ba)	2009/05/29	98	75 - 125	98	75 - 125	<1	ug/L	5.2	25
3154569	Total Beryllium (Be)	2009/05/29	96	75 - 125	103	75 - 125	<1	ug/L	NC	25
3154569	Total Chromium (Cr)	2009/05/29	115	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3154569	Total Lithium (Li)	2009/05/29	NC	75 - 125	103	75 - 125	<20	ug/L	0.8	25

Maxxam Job #: A924177
Report Date: 2009/05/29

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3154569	Total Selenium (Se)	2009/05/29	101	75 - 125	98	75 - 125	<0.5	ug/L	NC	25
3154569	Total Strontium (Sr)	2009/05/29	NC	75 - 125	93	75 - 125	<10	ug/L	0.9	25
3154569	Total Titanium (Ti)	2009/05/29	116	75 - 125	92	75 - 125	<10	ug/L	NC	25
3154569	Total Uranium (U)	2009/05/29	97	75 - 125	104	75 - 125	<0.05	ug/L	2.7	25
3154569	Total Vanadium (V)	2009/05/29	120	75 - 125	95	75 - 125	<10	ug/L	NC	25
3154569	Total Aluminum (Al)	2009/05/29					<10	ug/L	NC	25
3154569	Total Antimony (Sb)	2009/05/29					<0.5	ug/L	NC	25
3154569	Total Bismuth (Bi)	2009/05/29					<1	ug/L	NC	25
3154569	Total Boron (B)	2009/05/29					<50	ug/L	0.7	25
3154569	Total Molybdenum (Mo)	2009/05/29					<1	ug/L	3.6	25
3154569	Total Silicon (Si)	2009/05/29					<100	ug/L	2.4	25
3154569	Total Silver (Ag)	2009/05/29					<0.05	ug/L	NC	25
3154569	Total Thallium (Tl)	2009/05/29					<0.1	ug/L	NC	25
3154569	Total Tin (Sn)	2009/05/29					<1	ug/L	NC	25
3156967	Dissolved Calcium (Ca)	2009/05/29					<1	mg/L	5.3	25
3156967	Dissolved Magnesium (Mg)	2009/05/29					<1	mg/L	6.2	25
3156967	Dissolved Potassium (K)	2009/05/29					<1	mg/L	5.0	25
3156967	Dissolved Sodium (Na)	2009/05/29					<1	mg/L	6.1	25
3156967	Dissolved Sulphur (S)	2009/05/29					<20	mg/L	5.3	25
3156975	Total Calcium (Ca)	2009/05/29					<1	mg/L	0.3	25
3156975	Total Magnesium (Mg)	2009/05/29					<1	mg/L	1.1	25
3156975	Total Potassium (K)	2009/05/29					<1	mg/L	0.2	25
3156975	Total Sodium (Na)	2009/05/29					<1	mg/L	1.7	25
3156975	Total Sulphur (S)	2009/05/29					<20	mg/L	1.7	25

N/A = Not Applicable
NC = Non-calculable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference

A924177

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

№ 1375 page 1 of 1

Golder Associates

2640 Douglas Street
Victoria, British Columbia, Canada V8T 4M1
Telephone 250-881-7372 Fax 250-881-7470

Project Number:		Laboratory Name:
09-1421-0028		Maxxam
[redacted]		Address: 8577 Commerce Ct., Burnaby
Golder Contact: E. Irving	Golder E-mail Address: eirving @golder.com	Telephone/Fax: 604-444-4808
		Contact: Elaine Cousins

Office the final reports should be sent to: Quote: A80018 Metals by Chelation

- ☑ 500 – 4260 Still Creek Dr., Burnaby, B.C., V5C 6C6, Tel: 604-298-6623, Fax: 604-298-5253
- ☐ 202 – 2790 Gladwin Road, Abbotsford, B.C., V2T 4S8, Tel: 604-850-8786, Fax: 604-850-8756
- ☐ 2640 Douglas Street, Victoria, B.C., V8T 4M1, Tel: 250-881-7372, Fax: 250-881-7470

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D / M / Y)	[redacted]	Number of Containers	Analyses Required: Total Metals	Marine Method Dissolved Metals	Marine Method Major cations Hardness								RUSH	Remarks (over)
1375 -01		H_2O	21/05/09		2	✓	✓	✓									DIS aqua regia
1375 -02		"	"		2	✓	✓	✓									"
1375 -03		"	"		2	✓	✓	✓									"
-04																	
-05																	
-06																	
-07																	
-08																	
-09																	
-10																	
-11																	
-12																	

Sampler's Signature:	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Virginia Chant	Virginia Chant	Golder	May 21, 09	15:00		
Sample Storage (°C): 4°C	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company

Comments:	Method of Shipment:	Waybill No.:	Received for Lab by:	Date	Time
	Courier	D007826595			
	Shipped by: DHL	Shipment Condition: / Seal Intact:	Temp (°C): 5.5.5	Cooler opened by: AmD	Date: May 22/09 Time: 7:40

WHITE: Golder Copy YELLOW: Lab Copy PINK: Lab Returns with Final Report *Bill CRD Directly*

Your Project #: 09-1421-0028
Your C.O.C. #: 21386

Attention: Elaine Irving
Golder Associates Ltd.
4260 Still Creek Drive
Suite 500
Burnaby, BC
CANADA V5C 6C6

Report Date: 2009/06/06

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A924180
Received: 2009/05/22, 07:40

Sample Matrix: Sea Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	9	N/A	2009/05/29		
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	9	N/A	2009/05/29	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (dis) (1)	9	N/A	2009/06/04	BRN SOP-00206	Based on EPA 200.8
Elements by CRC ICPMS (dissolved) (1)	9	N/A	2009/05/29	BRN SOP-00206 R7.0	Based on EPA 200.8
Metals by Chelation CRC ICPMS (tot) (1)	9	N/A	2009/06/04	BRN SOP-00206	Based on EPA 200.8
Na, K, Ca, Mg, S by CRC ICPMS (total)	9	2009/05/28	2009/05/29	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) (1)	9	2009/05/28	2009/05/29	BRN SOP-00206	Based on EPA 200.8
Filter and HNO3 Preserve for Metals	9	N/A	2009/06/05	BRN WI-00006 R1.0	Based on EPA 200.2

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Elaine Cousins
08 Jun 2009 14:56:06 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ELAINE COUSINS, BBY CS Manager
Email: elaine.cousins@maxxamanalytics.com
Phone# (604) 444-4808 Ext:276

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A924180
Report Date: 2009/06/06

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

RESULTS OF CHEMICAL ANALYSES OF SEA WATER

Maxxam ID		O89121	O89122	O89123	O89124	O89125	O89126	O89127	O89128	O89129		
Sampling Date		2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20		
	Units	**21386-01**	**21386-02**	**21386-03**	**21386-04**	**21386-05**	**21386-06**	**21386-07**	**21386-08**	**21386-09**	**RDL**	**QC Batch**
Preparation												
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	N/A	ONSITE
Misc. Inorganics												
Dissolved Hardness (CaCO3)	mg/L	6670	6680	6760	6780	6610	6770	6690	7030	6760	0.5	3144007

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A924180
Report Date: 2009/06/06

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O89121	O89122	O89123	O89124	O89125	O89126	O89127	O89128	O89129		
Sampling Date		2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20		
	Units	**21386-01**	**21386-02**	**21386-03**	**21386-04**	**21386-05**	**21386-06**	**21386-07**	**21386-08**	**21386-09**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS												
Dissolved Aluminum (Al)	ug/L	<10	11	<10	<10	<10	<10	13	<10	12	10	3154500
Dissolved Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3154500
Dissolved Arsenic (As)	ug/L	1.8	1.7	1.8	1.7	1.6	1.7	1.8	1.9	1.9	0.5	3154500
Dissolved Barium (Ba)	ug/L	9	9	9	9	9	9	9	9	8	1	3154500
Dissolved Beryllium (Be)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3154500
Dissolved Bismuth (Bi)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3154500
Dissolved Boron (B)	ug/L	3660	3710	3650	3740	3690	3710	3690	3760	3680	50	3154500
Dissolved Cadmium (Cd)	ug/L	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.01	3171786
Dissolved Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3154500
Dissolved Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3171786
Dissolved Copper (Cu)	ug/L	0.37	0.32	0.32	0.30	0.33	0.38	0.37	0.46(1)	0.29	0.05	3171786
Dissolved Iron (Fe)	ug/L	2	2	2	5	2	2	3	3	2	1	3171786
Dissolved Lead (Pb)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.07	<0.05	0.05	3171786
Dissolved Lithium (Li)	ug/L	172	176	171	176	174	173	175	179	174	20	3154500
Dissolved Manganese (Mn)	ug/L	1.4	1.4	1.4	1.5	1.4	1.4	1.3	1.4	1.3	0.2	3171786
Dissolved Molybdenum (Mo)	ug/L	10	9	10	10	10	10	10	10	10	1	3154500
Dissolved Nickel (Ni)	ug/L	0.37	0.42	0.40	0.36	0.41	0.37	0.38	0.43	0.44	0.05	3171786
Dissolved Selenium (Se)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3154500
Dissolved Silicon (Si)	ug/L	1510	1440	1440	1430	1490	1440	1640	1580	1660	100	3154500
Dissolved Silver (Ag)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3154500
Dissolved Strontium (Sr)	ug/L	6910	7040	6930	7050	6900	7100	6940	7150	7000	10	3154500
Dissolved Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3154500
Dissolved Tin (Sn)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3154500
Dissolved Titanium (Ti)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	3154500
Dissolved Uranium (U)	ug/L	2.23	2.27	2.24	2.28	2.49	2.47	2.27	2.32	2.32	0.05	3154500
Dissolved Vanadium (V)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	3154500
Dissolved Zinc (Zn)	ug/L	3.6(1)	1.0	0.8	0.9	1.3	1.2	6.9(1)	2.5(1)	1.5	0.5	3171786
Dissolved Calcium (Ca)	mg/L	452	452	457	461	448	458	454	476	458	1	3156967
Dissolved Magnesium (Mg)	mg/L	1350	1350	1360	1370	1330	1370	1350	1420	1360	1	3156967
Dissolved Potassium (K)	mg/L	410	409	414	415	406	415	411	429	417	1	3156967
Dissolved Sodium (Na)	mg/L	11100	11200	11300	11400	11100	11300	11200	11700	11400	1	3156967
Dissolved Sulphur (S)	mg/L	1060	1060	1070	1090	1060	1090	1090	1130	1070	20	3156967

RDL = Reportable Detection Limit
(1) - dissolved > total, reanalyzed & confirmed. Possible trace level of field-filtered contamination on dissolved metal bottle or there is a discrepancy between samples taken.

Maxxam Job #: A924180
Report Date: 2009/06/06

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

ELEMENTS BY ATOMIC SPECTROSCOPY (SEA WATER)

Maxxam ID		O89121	O89122	O89123	O89124	O89125	O89126	O89127	O89128	O89129		
Sampling Date		2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20	2009/05/20		
	Units	**21386-01**	**21386-02**	**21386-03**	**21386-04**	**21386-05**	**21386-06**	**21386-07**	**21386-08**	**21386-09**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	ug/L	49	17	17	23	24	23	23	25	21	10	3154569
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3154569
Total Arsenic (As)	ug/L	2.0	1.7	1.9	1.7	1.9	1.8	1.8	1.8	1.9	0.5	3154569
Total Barium (Ba)	ug/L	9	9	9	9	9	9	9	9	9	1	3154569
Total Beryllium (Be)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3154569
Total Bismuth (Bi)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3154569
Total Boron (B)	ug/L	3790	3860	3820	3920	3890	3890	3820	3780	3900	50	3154569
Total Cadmium (Cd)	ug/L	0.08	0.09	0.08	0.09	0.08	0.09	0.08	0.08	0.08	0.01	3171790
Total Chromium (Cr)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3154569
Total Cobalt (Co)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3171790
Total Copper (Cu)	ug/L	0.37	0.41	0.39	0.44	0.40	0.34	0.39	0.33	0.37	0.05	3171790
Total Iron (Fe)	ug/L	16	19	20	28	30	27	31	28	24	1	3171790
Total Lead (Pb)	ug/L	0.07	0.07	0.08	0.08	<0.05	<0.05	0.06	0.06	0.07	0.05	3171790
Total Lithium (Li)	ug/L	177	181	176	185	179	182	175	176	180	20	3154569
Total Manganese (Mn)	ug/L	2.0	2.0	2.2	2.3	2.5	2.3	2.3	2.2	2.2	0.2	3171790
Total Molybdenum (Mo)	ug/L	9	9	10	10	10	10	9	9	9	1	3154569
Total Nickel (Ni)	ug/L	0.40	0.41	0.40	0.44	0.44	0.42	0.42	0.44	0.42	0.05	3171790
Total Selenium (Se)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	3154569
Total Silicon (Si)	ug/L	1500	1470	1470	1460	1460	1460	1640	1760	1620	100	3154569
Total Silver (Ag)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3154569
Total Strontium (Sr)	ug/L	6680	6780	6730	6980	6950	6880	6700	6680	6790	10	3154569
Total Thallium (Tl)	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3154569
Total Tin (Sn)	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3154569
Total Titanium (Ti)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	3154569
Total Uranium (U)	ug/L	2.15	2.22	2.14	2.30	2.30	2.33	2.19	2.19	2.27	0.05	3154569
Total Vanadium (V)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	3154569
Total Zinc (Zn)	ug/L	0.6	0.8	1.0	6.4	0.7	0.6	1.8	1.5	1.6	0.5	3171790
Total Calcium (Ca)	mg/L	438	442	438	453	455	454	448	453	440	1	3156975
Total Magnesium (Mg)	mg/L	1370	1390	1380	1430	1440	1420	1410	1420	1380	1	3156975
Total Potassium (K)	mg/L	405	410	409	415	421	416	414	417	406	1	3156975
Total Sodium (Na)	mg/L	11700	12000	11900	10300	10400	10400	10500	10400	11800	1	3156975
Total Sulphur (S)	mg/L	1070	1090	1060	1110	1110	1100	1100	1100	1070	20	3156975

RDL = Reportable Detection Limit

Maxxam Job #: A924180
Report Date: 2009/06/06

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3154500	Dissolved Arsenic (As)	2009/05/29	106	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3154500	Dissolved Barium (Ba)	2009/05/29	100	75 - 125	96	75 - 125	<1	ug/L	2.7	25
3154500	Dissolved Beryllium (Be)	2009/05/29	93	75 - 125	98	75 - 125	<1	ug/L	NC	25
3154500	Dissolved Chromium (Cr)	2009/05/29	116	75 - 125	100	75 - 125	<0.5	ug/L	NC	25
3154500	Dissolved Lithium (Li)	2009/05/29	NC	75 - 125	99	75 - 125	<20	ug/L	4.5	25
3154500	Dissolved Selenium (Se)	2009/05/29	101	75 - 125	97	75 - 125	<0.5	ug/L	NC	25
3154500	Dissolved Strontium (Sr)	2009/05/29	NC	75 - 125	94	75 - 125	<10	ug/L	3.8	25
3154500	Dissolved Titanium (Ti)	2009/05/29	119	75 - 125	103	75 - 125	<10	ug/L	NC	25
3154500	Dissolved Uranium (U)	2009/05/29	96	75 - 125	99	75 - 125	<0.05	ug/L	6.6	25
3154500	Dissolved Vanadium (V)	2009/05/29	119	75 - 125	97	75 - 125	<10	ug/L	NC	25
3154500	Dissolved Aluminum (Al)	2009/05/29					<10	ug/L	NC	25
3154500	Dissolved Antimony (Sb)	2009/05/29					<0.5	ug/L	NC	25
3154500	Dissolved Bismuth (Bi)	2009/05/29					<1	ug/L	NC	25
3154500	Dissolved Boron (B)	2009/05/29					<50	ug/L	4.8	25
3154500	Dissolved Molybdenum (Mo)	2009/05/29					<1	ug/L	3.5	25
3154500	Dissolved Silicon (Si)	2009/05/29					<100	ug/L	8.9	25
3154500	Dissolved Silver (Ag)	2009/05/29					<0.05	ug/L	NC	25
3154500	Dissolved Thallium (Tl)	2009/05/29					<0.1	ug/L	NC	25
3154500	Dissolved Tin (Sn)	2009/05/29					<1	ug/L	NC	25
3154569	Total Arsenic (As)	2009/05/29	104	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3154569	Total Barium (Ba)	2009/05/29	98	75 - 125	98	75 - 125	<1	ug/L	5.2	25
3154569	Total Beryllium (Be)	2009/05/29	96	75 - 125	103	75 - 125	<1	ug/L	NC	25
3154569	Total Chromium (Cr)	2009/05/29	115	75 - 125	95	75 - 125	<0.5	ug/L	NC	25
3154569	Total Lithium (Li)	2009/05/29	NC	75 - 125	103	75 - 125	<20	ug/L	0.8	25
3154569	Total Selenium (Se)	2009/05/29	101	75 - 125	98	75 - 125	<0.5	ug/L	NC	25
3154569	Total Strontium (Sr)	2009/05/29	NC	75 - 125	93	75 - 125	<10	ug/L	0.9	25
3154569	Total Titanium (Ti)	2009/05/29	116	75 - 125	92	75 - 125	<10	ug/L	NC	25
3154569	Total Uranium (U)	2009/05/29	97	75 - 125	104	75 - 125	<0.05	ug/L	2.7	25
3154569	Total Vanadium (V)	2009/05/29	120	75 - 125	95	75 - 125	<10	ug/L	NC	25
3154569	Total Aluminum (Al)	2009/05/29					<10	ug/L	NC	25
3154569	Total Antimony (Sb)	2009/05/29					<0.5	ug/L	NC	25
3154569	Total Bismuth (Bi)	2009/05/29					<1	ug/L	NC	25
3154569	Total Boron (B)	2009/05/29					<50	ug/L	0.7	25
3154569	Total Molybdenum (Mo)	2009/05/29					<1	ug/L	3.6	25
3154569	Total Silicon (Si)	2009/05/29					<100	ug/L	2.4	25
3154569	Total Silver (Ag)	2009/05/29					<0.05	ug/L	NC	25
3154569	Total Thallium (Tl)	2009/05/29					<0.1	ug/L	NC	25
3154569	Total Tin (Sn)	2009/05/29					<1	ug/L	NC	25
3156967	Dissolved Calcium (Ca)	2009/05/29					<1	mg/L	5.3	25
3156967	Dissolved Magnesium (Mg)	2009/05/29					<1	mg/L	6.2	25

Maxxam Job #: A924180
Report Date: 2009/06/06

Golder Associates Ltd.
Client Project #: 09-1421-0028

Sampler Initials: VC

QUALITY ASSURANCE REPORT

			Matrix Spike		Spike		Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3156967	Dissolved Potassium (K)	2009/05/29					<1	mg/L	5.0	25
3156967	Dissolved Sodium (Na)	2009/05/29					<1	mg/L	6.1	25
3156967	Dissolved Sulphur (S)	2009/05/29					<20	mg/L	5.3	25
3156975	Total Calcium (Ca)	2009/05/29					<1	mg/L	0.3	25
3156975	Total Magnesium (Mg)	2009/05/29					<1	mg/L	1.1	25
3156975	Total Potassium (K)	2009/05/29					<1	mg/L	0.2	25
3156975	Total Sodium (Na)	2009/05/29					<1	mg/L	1.7	25
3156975	Total Sulphur (S)	2009/05/29					<20	mg/L	1.7	25
3171786	Dissolved Cadmium (Cd)	2009/06/04	93	75 - 125	93	75 - 125	<0.01	ug/L	1.6	25
3171786	Dissolved Cobalt (Co)	2009/06/04	91	75 - 125	89	75 - 125	<0.05	ug/L	NC	25
3171786	Dissolved Copper (Cu)	2009/06/04	83	75 - 125	90	75 - 125	<0.05	ug/L	7.6	25
3171786	Dissolved Lead (Pb)	2009/06/04	92	75 - 125	95	75 - 125	<0.05	ug/L	NC	25
3171786	Dissolved Nickel (Ni)	2009/06/04	89	75 - 125	86	75 - 125	<0.05	ug/L	1.4	25
3171786	Dissolved Zinc (Zn)	2009/06/04	81	75 - 125	88	75 - 125	<0.5	ug/L	1.7	25
3171786	Dissolved Iron (Fe)	2009/06/04					<1	ug/L	NC	25
3171786	Dissolved Manganese (Mn)	2009/06/04					<0.2	ug/L	8.4	25
3171790	Total Cadmium (Cd)	2009/06/04	88	75 - 125	88	75 - 125	<0.01	ug/L	10.5	25
3171790	Total Cobalt (Co)	2009/06/04	86	75 - 125	86	75 - 125	<0.05	ug/L	NC	25
3171790	Total Copper (Cu)	2009/06/04	97	75 - 125	80	75 - 125	<0.05	ug/L	16.8	25
3171790	Total Lead (Pb)	2009/06/04	91	75 - 125	90	75 - 125	<0.05	ug/L	NC	25
3171790	Total Nickel (Ni)	2009/06/04	90	75 - 125	75	75 - 125	<0.05	ug/L	13.4	25
3171790	Total Zinc (Zn)	2009/06/04	92	75 - 125	90	75 - 125	<0.5	ug/L	NC	25
3171790	Total Iron (Fe)	2009/06/04					<1	ug/L	19.6	25
3171790	Total Manganese (Mn)	2009/06/04					<0.2	ug/L	1.7	25

N/A = Not Applicable
NC = Non-calculable
RPD = Relative Percent Difference

A924180

CHAIN-OF-CUSTODY RECORD/ANALYSIS REQUEST

№ 21386 page 1 of 1

Golder Associates
500–4260 Still Creek Drive
Burnaby, British Columbia, Canada V5C 6C6
Telephone: 604-298-6623 Fax: 604-298-5253

Project Number: 09-1421-0028

Laboratory Name: Maxxam

[redacted]

Address: 8577 Commerce Ct., Burnaby

Golder Contact: E. Irving

Golder E-mail Address: eirving @golder.com

Tel/Fax: 604-444-4808

Contact: Elaine Cousins

Office the final reports should be sent to: Quote: A80018 MetalsbyChelation

- ☑ 500–4260 Still Creek Drive, Burnaby, BC V5C 6C6, Tel: 604-298-6623, Fax: 604-298-5253
- ☐ 202–2790 Gladwin Road, Abbotsford, BC V2T 4S8, Tel: 604-850-8786, Fax: 604-850-8756
- ☐ 2640 Douglas Street, Victoria, BC V8T 4M1, Tel: 250-881-7372, Fax: 250-881-7470

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D/M/Y)	[redacted]	Number of Containers	Total Metals Marine Method	Dissolved Metals Marine Method	Major Cations Hardness						RUSH	Remarks (over)
21386 -01		H_2O	20/05/09		2	✓	✓	✓							DLS as per quote
21386 -02		"	"		2	✓	✓	✓							"
21386 -03		"	"		2	✓	✓	✓							"
21386 -04		"	"		2	✓	✓	✓							"
21386 -05		"	"		2	✓	✓	✓							"
21386 -06		"	"		2	✓	✓	✓							"
21386 -07		"	"		2	✓	✓	✓							"
21386 -08		"	"		2	✓	✓	✓							"
21386 -09		"	"		2	✓	✓	✓							"
-10															
-11															
-12															

Analyses Required

Attn Elaine Cousins

Sampler's Signature	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Virginia Chant	Virginia Chant	Golder	May 21, 09	15:00		
Sample Storage (°C) 4°C	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company

Comments:	Method of Shipment:	Waybill No.:	Received for Lab by:	Date	Time
	Courier	D007826595			
	Shipped by: DHL	Shipment Condition: Seal Intact:	Temp (°C) 5,5,5 / Cooler opened by: AmD	Date May 22/09	Time 7:40

WHITE: Golder copy YELLOW: Lab copy PINK: Lab returns with Final Report * Bill CRD Directly *