

CERTIFICATE OF ANALYSIS

Date: October 13, 2005

ALS File No. W4870

Report On: 118004-Faro GW Inteception
Water Analysis

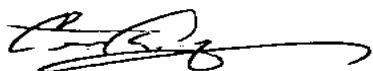
Report To: Robertson GeoConsultants Inc.
Suite 330, 580 Hornby Street
Vancouver, BC
V6C 3B6

Attention: Mr. Christoph Wels

Received: September 22, 2005

ALS ENVIRONMENTAL

per:



Can Dang, B.Sc. - Project Chemist
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REMARKS



For some of the submitted water samples, the measured concentration of specific dissolved parameters is greater than the corresponding total parameters concentration. The explanation for these findings is one or a combination of the following:

- * laboratory method variability;
- * field sampling method variability;
- * bias introduced during general handling, storage, transportation and/or analysis of the sample;
- * field sample grab bias - where separate grab samples are processed to produce total and dissolved samples;
- * field sample split bias - where total and dissolved parameters samples are produced from the same grab sample.

For further clarification on any of the above information, please contact us.

RESULTS OF ANALYSIS - Water

Sample ID	PW1-1	PW1-2	PW1-3	PW1-4	PW2-1
Sample Date	05-09-10	05-09-11	05-09-11	05-09-12	05-09-07
Sample Time	12:26	16:25	11:25	10:25	11:35
ALS ID	1	2	3	4	5

Physical Tests

Conductivity	(uS/cm)	1980	1960	1950	1930	1260
Hardness	CaCO ₃	1270	1190	1170	1130	700
pH		7.62	7.65	7.74	7.76	7.90

Dissolved Anions

Alkalinity-Total	CaCO ₃	322	307	301	303	268
Alkalinity-Bicarbonate	CaCO ₃	322	307	301	303	268
Bromide	Br	<0.50	<0.50	<0.50	<0.50	<0.050
Chloride	Cl	<5.0	<5.0	<5.0	<5.0	1.47
Fluoride	F	0.20	<0.20	<0.20	<0.20	0.155
Sulphate	SO ₄	971	944	932	929	470

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 < = Less than the detection limit indicated.

RESULTS OF ANALYSIS - Water

Sample ID		PW1-1	PW1-2	PW1-3	PW1-4	PW2-1
Sample Date		05-09-10	05-09-11	05-09-11	05-09-12	05-09-07
Sample Time		12:26	16:25	11:25	10:25	11:35
ALS ID		1	2	3	4	5
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Total Metals						
Aluminum	T-Al	4.74	0.84	0.56	0.34	<0.20
Antimony	T-Sb	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic	T-As	<0.20	<0.20	<0.20	<0.20	<0.20
Barium	T-Ba	0.089	0.048	0.048	0.047	0.095
Beryllium	T-Be	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Bismuth	T-Bi	<0.20	<0.20	<0.20	<0.20	<0.20
Boron	T-B	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium	T-Cd	<0.010	<0.010	<0.010	<0.010	<0.010
Calcium	T-Ca	382	342	350	356	213
Chromium	T-Cr	<0.010	<0.010	<0.010	<0.010	<0.010
Cobalt	T-Co	0.015	0.011	0.010	<0.010	<0.010
Copper	T-Cu	0.027	<0.010	0.013	<0.010	<0.010
Iron	T-Fe	8.63	3.15	2.62	1.84	0.081
Lead	T-Pb	<0.050	<0.050	<0.050	<0.050	<0.050
Lithium	T-Li	0.056	0.040	0.041	0.040	0.020
Magnesium	T-Mg	74.1	66.6	69.1	69.7	40.8
Manganese	T-Mn	14.5	13.8	14.0	14.1	10.1
Molybdenum	T-Mo	<0.030	<0.030	<0.030	<0.030	<0.030
Nickel	T-Ni	<0.050	<0.050	<0.050	<0.050	<0.050
Phosphorus	T-P	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium	T-K	7.4	6.2	6.4	6.5	4.2
Selenium	T-Se	<0.20	<0.20	<0.20	<0.20	<0.20
Silicon	T-Si	15.6	8.95	8.63	8.43	6.84
Silver	T-Ag	<0.010	<0.010	<0.010	<0.010	<0.010
Sodium	T-Na	50.9	46.2	47.0	47.6	33.1
Strontium	T-Sr	0.967	0.860	0.890	0.907	0.529
Thallium	T-Tl	<0.20	<0.20	<0.20	<0.20	<0.20
Tin	T-Sn	<0.030	<0.030	<0.030	<0.030	<0.030
Titanium	T-Ti	0.213	0.040	0.033	0.017	<0.010
Vanadium	T-V	<0.030	<0.030	<0.030	<0.030	<0.030
Zinc	T-Zn	0.0785	0.0289	0.0269	0.0234	0.0072

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RESULTS OF ANALYSIS - Water

Sample ID	PW1-1	PW1-2	PW1-3	PW1-4	PW2-1
Sample Date	05-09-10	05-09-11	05-09-11	05-09-12	05-09-07
Sample Time	12:26	16:25	11:25	10:25	11:35
ALS ID	1	2	3	4	5

Dissolved Metals

Aluminum	D-Al	<0.20	<0.20	<0.20	<0.20	<0.20
Antimony	D-Sb	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic	D-As	<0.20	<0.20	<0.20	<0.20	<0.20
Barium	D-Ba	0.036	0.039	0.041	0.041	0.094
Beryllium	D-Be	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Bismuth	D-Bi	<0.20	<0.20	<0.20	<0.20	<0.20
Boron	D-B	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium	D-Cd	<0.010	<0.010	<0.010	<0.010	<0.010
Calcium	D-Ca	386	361	354	344	214
Chromium	D-Cr	<0.010	<0.010	<0.010	<0.010	<0.010
Cobalt	D-Co	0.012	0.010	<0.010	<0.010	<0.010
Copper	D-Cu	<0.010	<0.010	<0.010	<0.010	<0.010
Iron	D-Fe	1.68	1.74	1.59	0.752	0.041
Lead	D-Pb	<0.050	<0.050	<0.050	<0.050	<0.050
Lithium	D-Li	0.045	0.036	0.038	0.038	0.018
Magnesium	D-Mg	73.4	70.2	69.5	66.8	40.3
Manganese	D-Mn	14.3	13.9	14.1	13.5	10.0
Molybdenum	D-Mo	<0.030	<0.030	<0.030	<0.030	<0.030
Nickel	D-Ni	<0.050	<0.050	<0.050	<0.050	<0.050
Phosphorus	D-P	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium	D-K	6.5	6.2	6.3	6.2	4.2
Selenium	D-Se	<0.20	<0.20	<0.20	<0.20	<0.20
Silicon	D-Si	8.60	7.85	7.92	7.68	6.78
Silver	D-Ag	<0.010	<0.010	<0.010	<0.010	<0.010
Sodium	D-Na	52.6	46.9	47.2	45.0	32.9
Strontium	D-Sr	0.936	0.868	0.889	0.862	0.525
Thallium	D-Tl	<0.20	<0.20	<0.20	<0.20	<0.20
Tin	D-Sn	<0.030	<0.030	<0.030	<0.030	<0.030
Titanium	D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010
Vanadium	D-V	<0.030	<0.030	<0.030	<0.030	<0.030
Zinc	D-Zn	0.0205	0.0173	0.0169	0.0157	0.0083

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RESULTS OF ANALYSIS - Water



Sample ID	PW2-2	PW2-3	PW2-4
Sample Date	05-09-07	05-09-08	05-09-08
Sample Time	07:20	14:30	10:00
ALS ID	6	7	8

Physical Tests

Conductivity	(uS/cm)	1260	1260	1250
Hardness	CaCO3	709	726	712
pH		7.91	7.91	7.91

Dissolved Anions

Alkalinity-Total	CaCO3	252	253	238
Alkalinity-Bicarbonate	CaCO3	252	253	238
Bromide	Br	<0.050	<0.050	<0.050
Chloride	Cl	1.47	1.46	1.46
Fluoride	F	0.154	0.154	0.159
Sulphate	SO4	471	466	464

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RESULTS OF ANALYSIS - Water

Sample ID		PW2-2	PW2-3	PW2-4
Sample Date		05-09-07	05-09-08	05-09-08
Sample Time		07:20	14:30	10:00
ALS ID		6	7	8
<hr/>				
Total Metals				
Aluminum	T-Al	<0.20	<0.20	<0.20
Antimony	T-Sb	<0.20	<0.20	<0.20
Arsenic	T-As	<0.20	<0.20	<0.20
Barium	T-Ba	0.095	0.096	0.095
Beryllium	T-Be	<0.0050	<0.0050	<0.0050
Bismuth	T-Bi	<0.20	<0.20	<0.20
Boron	T-B	<0.10	<0.10	<0.10
Cadmium	T-Cd	<0.010	<0.010	<0.010
Calcium	T-Ca	220	217	215
Chromium	T-Cr	<0.010	<0.010	<0.010
Cobalt	T-Co	<0.010	<0.010	<0.010
Copper	T-Cu	<0.010	<0.010	<0.010
Iron	T-Fe	0.088	0.070	0.101
Lead	T-Pb	<0.050	<0.050	<0.050
Lithium	T-Li	0.018	0.019	0.019
Magnesium	T-Mg	40.7	40.4	40.3
Manganese	T-Mn	10.2	10.1	10.1
Molybdenum	T-Mo	<0.030	<0.030	<0.030
Nickel	T-Ni	<0.050	<0.050	<0.050
Phosphorus	T-P	<0.30	<0.30	<0.30
Potassium	T-K	4.2	4.3	4.3
Selenium	T-Se	<0.20	<0.20	<0.20
Silicon	T-Si	6.86	6.85	6.90
Silver	T-Ag	<0.010	<0.010	<0.010
Sodium	T-Na	33.3	33.7	33.9
Strontium	T-Sr	0.531	0.531	0.531
Thallium	T-Tl	<0.20	<0.20	<0.20
Tin	T-Sn	<0.030	<0.030	<0.030
Titanium	T-Ti	<0.010	<0.010	<0.010
Vanadium	T-V	<0.030	<0.030	<0.030
Zinc	T-Zn	0.0084	<0.0050	0.0069

Remarks regarding the analyses appear at the beginning of this report.
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RESULTS OF ANALYSIS - Water

Sample ID	PW2-2	PW2-3	PW2-4
Sample Date	05-09-07	05-09-08	05-09-08
Sample Time	07:20	14:30	10:00
ALS ID	6	7	8

Dissolved Metals

Aluminum	D-Al	<0.20	<0.20	<0.20
Antimony	D-Sb	<0.20	<0.20	<0.20
Arsenic	D-As	<0.20	<0.20	<0.20
Barium	D-Ba	0.096	0.097	0.095
Beryllium	D-Be	<0.0050	<0.0050	<0.0050
Bismuth	D-Bi	<0.20	<0.20	<0.20
Boron	D-B	<0.10	<0.10	<0.10
Cadmium	D-Cd	<0.010	<0.010	<0.010
Calcium	D-Ca	217	223	219
Chromium	D-Cr	<0.010	<0.010	<0.010
Cobalt	D-Co	<0.010	<0.010	<0.010
Copper	D-Cu	<0.010	<0.010	<0.010
Iron	D-Fe	0.086	0.057	0.085
Lead	D-Pb	<0.050	<0.050	<0.050
Lithium	D-Li	0.019	0.019	0.018
Magnesium	D-Mg	40.7	41.2	40.2
Manganese	D-Mn	10.1	10.3	10.1
Molybdenum	D-Mo	<0.030	<0.030	<0.030
Nickel	D-Ni	<0.050	<0.050	<0.050
Phosphorus	D-P	<0.30	<0.30	<0.30
Potassium	D-K	4.2	4.3	4.3
Selenium	D-Se	<0.20	<0.20	<0.20
Silicon	D-Si	6.83	6.97	6.89
Silver	D-Ag	<0.010	<0.010	<0.010
Sodium	D-Na	33.6	34.7	34.0
Strontium	D-Sr	0.533	0.544	0.530
Thallium	D-Tl	<0.20	<0.20	<0.20
Tin	D-Sn	<0.030	<0.030	<0.030
Titanium	D-Ti	<0.010	<0.010	<0.010
Vanadium	D-V	<0.030	<0.030	<0.030
Zinc	D-Zn	0.0067	0.0059	0.0068

Remarks regarding the analyses appear at the beginning of this report.
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Appendix 1 - QUALITY CONTROL - Replicates

Water	PW2-3	PW2-3
	05-09-08 14:30	QC # 465430

Physical Tests

Conductivity	(uS/cm)	1260	1260
Hardness	CaCO3	726	695
pH		7.91	7.91

Dissolved Anions

Bromide	Br	<0.050	<0.050
Chloride	Cl	1.46	1.46
Fluoride	F	0.154	0.154
Sulphate	SO4	466	466

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except where noted.
 < = Less than the detection limit indicated.

Appendix 1 - QUALITY CONTROL - Replicates

Water		PW2-3	PW2-3
		05-09-08 14:30	QC # 465430
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Total Metals			
Aluminum	T-Al	<0.20	<0.20
Antimony	T-Sb	<0.20	<0.20
Arsenic	T-As	<0.20	<0.20
Barium	T-Ba	0.096	0.098
Beryllium	T-Be	<0.0050	<0.0050
Bismuth	T-Bi	<0.20	<0.20
Boron	T-B	<0.10	<0.10
Cadmium	T-Cd	<0.010	<0.010
Calcium	T-Ca	217	217
Chromium	T-Cr	<0.010	<0.010
Cobalt	T-Co	<0.010	<0.010
Copper	T-Cu	<0.010	<0.010
Iron	T-Fe	0.070	0.072
Lead	T-Pb	<0.050	<0.050
Lithium	T-Li	0.019	0.018
Magnesium	T-Mg	40.4	41.5
Manganese	T-Mn	10.1	10.4
Molybdenum	T-Mo	<0.030	<0.030
Nickel	T-Ni	<0.050	<0.050
Phosphorus	T-P	<0.30	<0.30
Potassium	T-K	4.3	4.4
Selenium	T-Se	<0.20	<0.20
Silicon	T-Si	6.85	7.04
Silver	T-Ag	<0.010	<0.010
Sodium	T-Na	33.7	35.3
Strontium	T-Sr	0.531	0.551
Thallium	T-Tl	<0.20	<0.20
Tin	T-Sn	<0.030	<0.030
Titanium	T-Ti	<0.010	<0.010
Vanadium	T-V	<0.030	<0.030
Zinc	T-Zn	<0.0050	0.0053

Remarks regarding the analyses appear at the beginning of this report.
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 < = Less than the detection limit indicated.

Appendix 1 - QUALITY CONTROL - Replicates

Water		PW2-3	PW2-3
		05-09-08 14:30	QC # 465430
Dissolved Metals			
Aluminum	D-Al	<0.20	<0.20
Antimony	D-Sb	<0.20	<0.20
Arsenic	D-As	<0.20	<0.20
Barium	D-Ba	0.097	0.092
Beryllium	D-Be	<0.0050	<0.0050
Bismuth	D-Bi	<0.20	<0.20
Boron	D-B	<0.10	<0.10
Cadmium	D-Cd	<0.010	<0.010
Calcium	D-Ca	223	214
Chromium	D-Cr	<0.010	<0.010
Cobalt	D-Co	<0.010	<0.010
Copper	D-Cu	<0.010	<0.010
Iron	D-Fe	0.057	0.048
Lead	D-Pb	<0.050	<0.050
Lithium	D-Li	0.019	0.017
Magnesium	D-Mg	41.2	39.2
Manganese	D-Mn	10.3	9.81
Molybdenum	D-Mo	<0.030	<0.030
Nickel	D-Ni	<0.050	<0.050
Phosphorus	D-P	<0.30	<0.30
Potassium	D-K	4.3	4.1
Selenium	D-Se	<0.20	<0.20
Silicon	D-Si	6.97	6.67
Silver	D-Ag	<0.010	<0.010
Sodium	D-Na	34.7	32.8
Strontium	D-Sr	0.544	0.514
Thallium	D-Tl	<0.20	<0.20
Tin	D-Sn	<0.030	<0.030
Titanium	D-Ti	<0.010	<0.010
Vanadium	D-V	<0.030	<0.030
Zinc	D-Zn	0.0059	0.0066

Remarks regarding the analyses appear at the beginning of this report.
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Appendix 2 - METHODOLOGY



Outlines of the methodologies utilized for the analysis of the samples submitted are as follows

Conductivity in Water

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

Recommended Holding Time:

Sample: 28 days

Reference: APHA

Laboratory Location: ALS Environmental, Vancouver

pH in Water

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

Recommended Holding Time:

Sample: 2 hours

Reference: APHA

Laboratory Location: ALS Environmental, Vancouver

Alkalinity in Water by Colourimetry

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

Recommended Holding Time:

Sample: 14 days

Reference: APHA

Laboratory Location: ALS Environmental, Vancouver

Dissolved Anions in Water by Ion Chromatography

This analysis is carried out using procedures adapted from APHA Method 4110 "Determination of Anions by Ion Chromatography" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Anions are determined by filtering the sample through a 0.45 micron membrane filter and injecting the filtrate onto a Dionex IonPac AG17 anion exchange column with a hydroxide eluent stream. Anions routinely determined by this method include: bromide, chloride, fluoride, nitrate, nitrite and sulphate.

Recommended Holding Time:

Sample: 28 days (bromide, chloride, fluoride, sulphate)

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Appendix 2 - METHODOLOGY - Continued



Sample: 2 days (nitrate, nitrite)
Reference: APHA and EPA

Laboratory Location: ALS Environmental, Vancouver

Metals in Water

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" 20th Edition 1998 published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotplate or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by atomic absorption/emission spectrophotometry (EPA Method 7000 series), inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B), and/or inductively coupled plasma - mass spectrometry (EPA Method 6020).

Recommended Holding Time:
Sample: 6 months
Reference: EPA

Laboratory Location: ALS Environmental, Vancouver

Results contained within this certificate relate only to the samples as submitted.

This Certificate Of Analysis shall only be reproduced in full, except with the written approval of ALS Environmental.

End of Report