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Report Transmission Cover Page

Lot ID: **857462**
Control Number: Z-135907
Date Received: Feb 28, 2012
Date Reported: Mar 5, 2012
Report Number: 1718612

Contact & Affiliation	Address	Delivery Commitments
		On [Lot Verification] send (COA) by Email - Multiple Reports On [Report Approval] send (COC, Test Report) by Email - Multiple Reports On [Report Approval] send (Test Report) by Email - Multiple Reports On [Report Approval] send (Test Report) by Email - Single Report
		On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
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Notes To Clients:

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Sample Custody

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Sample Disposal Date: April 04, 2012

All samples will be stored until this date unless other instructions are received. Please indicate other requirements below and return this form to the address or fax number on the top of this page.

☐ Extend Sample Storage Until _____ (MM/DD/YY)

The following charges apply to extended sample storage:

Storage for an additional 30 days	$ 2.50 per sample
Storage for an additional 60 days	$ 5.00 per sample
Storage for an additional 90 days	$ 7.50 per sample

☐ Return Sample, collect, to the address below via:

- ☐ Greyhound
- ☐ DHL
- ☐ Purolator
- ☐ Other (specify) _____

Name _____
Company _____
Address _____
_____
Phone _____
Fax _____

Signature _____

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Analytical Report

Lot ID: **857462**
Control Number: Z-135907
Date Received: Feb 28, 2012
Date Reported: Mar 5, 2012
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Reference Number	857462-1
Sample Date	February 22, 2012
Sample Time	16:28
Sample Location	
Sample Description	08-35-062-25 W5M / M40956.590527 (WTH No. 2-12) / 4.9°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Physical and Aggregate Properties						
Colour	Apparent, Potable	Colour units	30	5	15	Above AO
Turbidity		NTU	6.8	0.1	0.1	Above OG
Routine Water						
pH			7.95		6.5 - 8.5	Within AO
Temperature of observed pH		°C	19.4			
Electrical Conductivity		µS/cm at 25 C	709	1		
Calcium	Extractable	mg/L	60.2	0.2		
Magnesium	Extractable	mg/L	17.4	0.2		
Sodium	Extractable	mg/L	79.5	0.4	200	Below AO
Potassium	Extractable	mg/L	1.9	0.4		
Iron	Extractable	mg/L	0.76	0.01	0.3	Above AO
Manganese	Extractable	mg/L	0.031	0.005	0.05	Below AO
Chloride	Dissolved	mg/L	<0.4	0.4	250	Below AO
Fluoride		mg/L	0.09	0.05	1.5	Below MAC
Nitrate - N		mg/L	<0.01	0.01	10	Below MAC
Nitrite - N		mg/L	<0.005	0.005	1	Below MAC
Nitrate and Nitrite - N		mg/L	<0.01	0.01	10	Below MAC
Sulfate (SO4)		mg/L	36.6	0.9	500	Below AO
Hydroxide		mg/L	<5	5		
Carbonate		mg/L	<6	6		
Bicarbonate		mg/L	463	5		
P-Alkalinity	as CaCO3	mg/L	<5	5		
T-Alkalinity	as CaCO3	mg/L	380	5		
Total Dissolved Solids		mg/L	423	1	500	Below AO
Hardness	as CaCO3	mg/L	222			
Ionic Balance		%	95			

Approved by:

Darren Crichton, BSc, PChem
Operations Manager

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Methodology and Notes

Lot ID: **857462**
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Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Alkalinity - Titration Method, 2320 B	29-Feb-12	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	29-Feb-12	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	29-Feb-12	Exova Edmonton
Anions (Routine) by Ion Chromatography	APHA	*	Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	29-Feb-12	Exova Edmonton
Approval-Edmonton	APHA		Checking Correctness of Analyses, 1030 E	29-Feb-12	Exova Edmonton
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	29-Feb-12	Exova Edmonton
Colour (Apparent) in water	APHA	*	Visual Comparison Method, 2120 B	01-Mar-12	Exova Edmonton
Metals Trace (Extractable) in water	APHA		Hardness by Calculation, 2340 B	29-Feb-12	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	29-Feb-12	Exova Edmonton
Turbidity in Water	APHA	*	Turbidity - Nephelometric Method, 2130 B	29-Feb-12	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater

Guidelines

Guideline Description	Health Canada GCDWQ
Guideline Source	Guidelines for Canadian Drinking Water Quality, Health Canada, May 2008
Guideline Comments	MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guideline for Water Treatment Plants Refer to Health Canada GCDWQ for complete guidelines and additional drinking water information at www.hc-sc.gc.ca

Comments:

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The comparison of test results to guideline limits is provided for information purposes only. This is not to be taken as a statement of conformance / nonconformance to any guideline, regulation or limit. The data user is responsible for all conclusions drawn with respect to the data and is advised to consult official regulatory references when evaluating compliance.

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted.

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Quality Control

Lot ID: **857462**
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Metals Extractable

Blanks	Units	Measured	Lower Limit	Upper Limit		Passed QC
Sulfur	mg/L	0.0362267	-0.3	0.3		yes
Date Acquired:	March 05, 2012					

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Sulfur	mg/L	74.9	77.6	10	0.1	yes
Date Acquired:	March 05, 2012					

Control Sample	Units	Measured	Lower Limit	Upper Limit		Passed QC
Sulfur	mg/L	141	140.5	158.5		yes
Date Acquired:	March 05, 2012					
Sulfur	mg/L	3.0	2.8	3.3		yes
Date Acquired:	March 05, 2012					

Physical and Aggregate Properties

Blanks	Units	Measured	Lower Limit	Upper Limit		Passed QC
Turbidity	NTU	0.096	0.0	0.1		yes
Date Acquired:	March 01, 2012					
Turbidity	NTU	0.083	0.1	0.1		yes
Date Acquired:	March 01, 2012					

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Turbidity	NTU	1.7	1.7	10	0.2	yes
Date Acquired:	March 01, 2012					

Control Sample	Units	Measured	Lower Limit	Upper Limit		Passed QC
Turbidity	NTU	2450	2375.7	2480.3		yes
Date Acquired:	March 01, 2012					
Turbidity	NTU	6860	6761.0	7331.0		yes
Date Acquired:	March 01, 2012					
Colour	Colour units	10	10	10		yes
Turbidity	NTU	165	161.0	173.0		yes
Date Acquired:	March 01, 2012					
Turbidity	NTU	13.8	13.8	14.6		yes
Date Acquired:	March 01, 2012					
Turbidity	NTU	1.4	1.4	1.5		yes
Date Acquired:	March 01, 2012					

Routine Water

Blanks	Units	Measured	Lower Limit	Upper Limit		Passed QC
Calcium	mg/L	-0.0297283	-0.1	0.1		yes

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Quality Control

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Date Received: Feb 28, 2012
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Routine Water - Continued

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Magnesium	mg/L	0.0014295	-0.1	0.1	yes
Sodium	mg/L	0.0268285	-0.4	0.3	yes
Potassium	mg/L	0.059216	-0.4	0.4	yes
Iron	mg/L	-0.00382086	-0.02	0.02	yes
Manganese	mg/L	-0.000556616	-0.003	0.003	yes
Chloride	mg/L	0.28	-0.4	0.4	yes
Fluoride	mg/L	0	-0.05	0.05	yes
Nitrate - N	mg/L	0	-0.01	0.01	yes
Nitrite - N	mg/L	0	-0.005	0.005	yes
Date Acquired:	February 29, 2012				

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
pH		8.66	8.66	0		yes
Electrical Conductivity	dS/m at 25 C	0.414	0.417	10	0.002	yes
Calcium	mg/L	98.0	97.7	10	0.6	yes
Magnesium	mg/L	48.7	48.6	10	0.4	yes
Sodium	mg/L	15.3	15.3	10	1.2	yes
Potassium	mg/L	115	113	10	1.2	yes
Iron	mg/L	7.54	7.72	10	0.05	yes
Manganese	mg/L	0.030	0.030	10	0.010	yes
Chloride	mg/L	<0.4	<0.4	10	0.5	yes
Fluoride	mg/L	2.1	2.1	10	0.05	yes
Nitrate - N	mg/L	0.18	0.17	10	0.01	yes
Nitrite - N	mg/L	<0.02	<0.02	10	0.010	yes
Hydroxide	mg/L	<5	<5	10		yes
Carbonate	mg/L	51	47	10	6	yes
Bicarbonate	mg/L	1080	1100	10	6	yes
P-Alkalinity	mg/L	42	40	10	5	yes
T-Alkalinity	mg/L	974	978	10	5	yes
Date Acquired:	February 29, 2012					

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Chloride	mg/L	2030	1913.9	2188.1	yes
Date Acquired:	February 29, 2012				
pH		9.16	9.05	9.25	yes
Electrical Conductivity	dS/m at 25 C	2.70	2.616	2.904	yes
Calcium	mg/L	251	225.1	274.9	yes
Magnesium	mg/L	95.8	92.7	101.1	yes
Sodium	mg/L	245	233.8	263.8	yes
Potassium	mg/L	248	235.2	259.2	yes
Iron	mg/L	9.26	9.01	10.99	yes
Manganese	mg/L	2.31	2.240	2.540	yes
Fluoride	mg/L	9.86	9.41	10.43	yes

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Quality Control

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Routine Water - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Nitrate - N	mg/L	9.69	9.62	10.52	yes
Nitrite - N	mg/L	9.98	9.590	10.550	yes
Nitrate and Nitrite - N	mg/L	19.7	19.23	21.03	yes
P-Alkalinity	mg/L	472	402	552	yes
T-Alkalinity	mg/L	1020	956	1056	yes
Date Acquired: February 29, 2012					
pH		6.93	6.78	6.96	yes
Electrical Conductivity	dS/m at 25 C	0.080	0.070	0.083	yes
Chloride	mg/L	77.8	74.9	86.9	yes
Fluoride	mg/L	5.11	4.61	5.27	yes
Nitrate - N	mg/L	5.04	4.41	5.13	yes
Nitrite - N	mg/L	5.24	4.530	5.250	yes
Nitrate and Nitrite - N	mg/L	10.3	9.01	10.33	yes
P-Alkalinity	mg/L	38	22	67	yes
T-Alkalinity	mg/L	132	113	137	yes
Date Acquired: February 29, 2012					
Calcium	mg/L	5.2	4.6	5.7	yes
Magnesium	mg/L	2.1	1.8	2.2	yes
Sodium	mg/L	5.2	4.7	5.7	yes
Potassium	mg/L	5.0	4.5	5.5	yes
Iron	mg/L	0.20	0.18	0.22	yes
Manganese	mg/L	0.052	0.045	0.055	yes
Chloride	mg/L	13.8	13.3	16.5	yes
Fluoride	mg/L	0.50	0.45	0.55	yes
Nitrate - N	mg/L	0.49	0.46	0.56	yes
Nitrite - N	mg/L	0.516	0.433	0.547	yes
Nitrate and Nitrite - N	mg/L	1.00	0.93	1.07	yes
Date Acquired: February 29, 2012					