

Your C.O.C. #: G097926

Attention:LESLIE CARTER

DEEP BAY IMPROVEMENT DISTRICT
5031 MOUNTAIN VIEW RD
BOWSER, BC
CANADA VOR 1G0

Report Date: 2015/12/15

Report #: R2096901

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5A9041

Received: 2015/12/08, 13:50

Sample Matrix: DRINKING WATER
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity - Water (1)	8	2015/12/10	2015/12/10	BBY6SOP-00026	SM 22 2320 B m
Chloride by Automated Colourimetry (1)	8	N/A	2015/12/09	BBY6SOP-00011	SM 22 4500-Cl- G m
Color Apparent (1)	8	N/A	2015/12/10	BBY6SOP-00021	SM 22 2120 B m
Coliforms & E.coli by Quantitray (MPN)	8	N/A	2015/12/08	CTYSOP-00002	Based on SM-9223
Fluoride (1)	8	N/A	2015/12/09	BBY6SOP-00048	SM 22 4500-F C m
Hardness Total (calculated as CaCO3) (1)	4	N/A	2015/12/11	BBY7SOP-00002	EPA 6020a R1 m
Hardness Total (calculated as CaCO3) (1)	4	N/A	2015/12/15	BBY7SOP-00002	EPA 6020a R1 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	4	2015/12/08	2015/12/11	BBY7SOP-00002	EPA 6020A R1 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	4	2015/12/08	2015/12/15	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (total) (1)	4	2015/12/09	2015/12/10	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (total) (1)	4	2015/12/10	2015/12/14	BBY7SOP-00002	EPA 6020A R1 m
Ammonia-N (Unpreserved) (1)	8	N/A	2015/12/10	BBY6SOP-00009	SM 22 4500-NH3- G m
Nitrate + Nitrite (N) (1)	8	N/A	2015/12/09	BBY6SOP-00010	SM 22 4500-NO3- I m
Nitrite (N) by CFA (1)	7	N/A	2015/12/09	BBY6SOP-00010	SM 22 4500-NO3- I m
Nitrite (N) by CFA (1)	1	N/A	2015/12/10	BBY6SOP-00010	SM 22 4500-NO3- I m
Nitrogen - Nitrate (as N) (1)	7	N/A	2015/12/09	BBY6SOP-00010	SM 22 4500-NO3 I m
Nitrogen - Nitrate (as N) (1)	1	N/A	2015/12/10	BBY6SOP-00010	SM 22 4500-NO3 I m
pH Water (1, 2)	8	N/A	2015/12/10	BBY6SOP-00026	SM 22 4500-H+ B m
Sulphate by Automated Colourimetry (1)	8	N/A	2015/12/09	BBY6SOP-00017	SM 22 4500-SO42- E m
Total Dissolved Solids (Filt. Residue) (1)	8	2015/12/10	2015/12/11	BBY6SOP-00033	SM 22 2540 C m
Tannin & Lignin (Total) (1)	8	N/A	2015/12/11	BRN SOP-00221 R1.0	SM-5550 B
Turbidity (1)	8	N/A	2015/12/10	BBY6SOP-00027	SM 22 2130 B m
UV absorbance @254nm-Unfiltered (1)	8	N/A	2015/12/09	BBY6SOP-00055	SM 22 5910 B
UV transmittance @254nm-Unfiltered (1)	8	N/A	2015/12/09	BRN SOP-00246	SM-5910 B

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Vancouver

(2) The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore pH field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/APHA Standard Method holding time.

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CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5A9041

Received: 2015/12/08, 13:50

Encryption Key

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

Shanaz Akbar, Project Manager

Email: SAKbar@maxxam.ca

Phone# (604)639-2618

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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. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER

Maxxam ID					NU4808		NU4809		
Sampling Date					2015/12/08 11:15		2015/12/08 11:30		
COC Number					G097926		G097926		
	UNITS	MAC	AO	OG	#1 WELL	QC Batch	#3 WELL	RDL	QC Batch
CONVENTIONALS									
Transmittance at 254nm	%T/cm	-	-	-	>97.7	8137936	>97.7	N/A	8137936
Misc. Inorganics									
UV absorbance (254nm)	AU/cm	-	-	-	<0.010 (1)	8139535	<0.010	0.010	8139535
ANIONS									
Nitrite (N)	mg/L	1	-	-	<0.0050	8139482	<0.0050	0.0050	8139482
Calculated Parameters									
Nitrate (N)	mg/L	10	-	-	0.034	8137825	0.038	0.020	8137825
Misc. Inorganics									
Fluoride (F)	mg/L	1.5	-	-	0.026	8139557	0.028	0.010	8139557
Alkalinity (Total as CaCO3)	mg/L	-	-	-	36.3	8141055	39.7	0.50	8141055
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<0.50	8141055	<0.50	0.50	8141055
Bicarbonate (HCO3)	mg/L	-	-	-	44.2	8141055	48.4	0.50	8141055
Carbonate (CO3)	mg/L	-	-	-	<0.50	8141055	<0.50	0.50	8141055
Hydroxide (OH)	mg/L	-	-	-	<0.50	8141055	<0.50	0.50	8141055
Anions									
Dissolved Sulphate (SO4)	mg/L	-	500	-	0.69	8139476	0.81	0.50	8139471
Dissolved Chloride (Cl)	mg/L	-	250	-	1.8	8139474	2.6	0.50	8139469
MISCELLANEOUS									
Apparent Colour	Col. Unit	-	-	-	10.0	8140171	10.0	5.0	8140171
Tannins and Lignins	mg/L	-	-	-	<0.10	8141863	<0.10	0.10	8141863
Nutrients									
Total Ammonia (N)	mg/L	-	-	-	0.0182	8140760	<0.0050	0.0050	8140760
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.034	8139480	0.038	0.020	8139480
Physical Properties									
pH	pH	-	6.5:8.5	-	7.74	8141058	7.69	N/A	8141058
Physical Properties									
Total Dissolved Solids	mg/L	-	500	-	40	8139566	44	10	8139566
Turbidity	NTU	see remark	see remark	see remark	3.48	8139974	1.34	0.10	8139974
RDL = Reportable Detection Limit N/A = Not Applicable (1) Sample arrived to laboratory past recommended hold time.									

RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER

Maxxam ID					NU4810			NU4811		
Sampling Date					2015/12/08 12:00			2015/12/08 12:25		
COC Number					G097926			G097926		
	UNITS	MAC	AO	OG	#2 WELL	RDL	QC Batch	RESERVOIR	RDL	QC Batch
CONVENTIONALS										
Transmittance at 254nm	%T/cm	-	-	-	97.0	N/A	8137936	>97.7	N/A	8137936
Misc. Inorganics										
UV absorbance (254nm)	AU/cm	-	-	-	0.013	0.010	8139535	<0.010	0.010	8139535
ANIONS										
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050	8139482	<0.050 (1)	0.050	8140775
Calculated Parameters										
Nitrate (N)	mg/L	10	-	-	<0.020	0.020	8137825	0.109	0.050	8137825
Misc. Inorganics										
Fluoride (F)	mg/L	1.5	-	-	0.019	0.010	8139557	0.032	0.010	8139557
Alkalinity (Total as CaCO3)	mg/L	-	-	-	20.5	0.50	8141055	57.8	0.50	8141055
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<0.50	0.50	8141055	<0.50	0.50	8141055
Bicarbonate (HCO3)	mg/L	-	-	-	25.0	0.50	8141055	70.5	0.50	8141055
Carbonate (CO3)	mg/L	-	-	-	<0.50	0.50	8141055	<0.50	0.50	8141055
Hydroxide (OH)	mg/L	-	-	-	<0.50	0.50	8141055	<0.50	0.50	8141055
Anions										
Dissolved Sulphate (SO4)	mg/L	-	500	-	<0.50	0.50	8139471	1.46	0.50	8139476
Dissolved Chloride (Cl)	mg/L	-	250	-	1.5	0.50	8139469	2.9	0.50	8139474
MISCELLANEOUS										
Apparent Colour	Col. Unit	-	-	-	10.0	5.0	8140171	5.0	5.0	8140171
Tannins and Lignins	mg/L	-	-	-	<0.10	0.10	8141863	<0.10	0.10	8141863
Nutrients										
Total Ammonia (N)	mg/L	-	-	-	0.0150	0.0050	8140760	0.0070	0.0050	8140760
Nitrate plus Nitrite (N)	mg/L	-	-	-	<0.020	0.020	8139480	0.109	0.020	8139480
Physical Properties										
pH	pH	-	6.5:8.5	-	7.36	N/A	8141058	7.99	N/A	8141058
Physical Properties										
Total Dissolved Solids	mg/L	-	500	-	22	10	8140312	66	10	8140312
Turbidity	NTU	see remark	see remark	see remark	5.23	0.10	8139974	<0.10	0.10	8139974
RDL = Reportable Detection Limit N/A = Not Applicable (1) RDL raised due to sample matrix interference.										

RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER

Maxxam ID					NU4812		NU4813	NU4814		
Sampling Date					2015/12/08 12:45		2015/12/08 13:00	2015/12/08 13:15		
COC Number					G097926		G097926	G097926		
	UNITS	MAC	AO	OG	WELL #4	QC Batch	WELL #6	WELL #5	RDL	QC Batch
CONVENTIONALS										
Transmittance at 254nm	%T/cm	-	-	-	>97.7	8137936	>97.7	>97.7	N/A	8137936
Misc. Inorganics										
UV absorbance (254nm)	AU/cm	-	-	-	<0.010	8139535	<0.010	<0.010	0.010	8139535
ANIONS										
Nitrite (N)	mg/L	1	-	-	<0.0050	8139482	<0.0050	<0.0050	0.0050	8139482
Calculated Parameters										
Nitrate (N)	mg/L	10	-	-	0.043	8137825	0.111	0.097	0.020	8137825
Misc. Inorganics										
Fluoride (F)	mg/L	1.5	-	-	0.029	8139557	0.035	0.030	0.010	8139557
Alkalinity (Total as CaCO3)	mg/L	-	-	-	37.0	8141055	50.8	45.1	0.50	8141055
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<0.50	8141055	<0.50	<0.50	0.50	8141055
Bicarbonate (HCO3)	mg/L	-	-	-	45.1	8141055	62.0	55.0	0.50	8141055
Carbonate (CO3)	mg/L	-	-	-	<0.50	8141055	<0.50	<0.50	0.50	8141055
Hydroxide (OH)	mg/L	-	-	-	<0.50	8141055	<0.50	<0.50	0.50	8141055
Anions										
Dissolved Sulphate (SO4)	mg/L	-	500	-	2.26	8139476	1.00	0.99	0.50	8139471
Dissolved Chloride (Cl)	mg/L	-	250	-	1.5	8139474	2.2	4.8	0.50	8139469
MISCELLANEOUS										
Apparent Colour	Col. Unit	-	-	-	5.0	8140171	5.0	10.0	5.0	8140171
Tannins and Lignins	mg/L	-	-	-	<0.10	8141863	<0.10	<0.10	0.10	8141863
Nutrients										
Total Ammonia (N)	mg/L	-	-	-	<0.0050	8140760	0.0080	<0.0050	0.0050	8140760
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.043	8139480	0.111	0.097	0.020	8139480
Physical Properties										
pH	pH	-	6.5:8.5	-	7.63	8141058	7.86	7.78	N/A	8141058
Physical Properties										
Total Dissolved Solids	mg/L	-	500	-	46	8140312	50	58	10	8140312
Turbidity	NTU	see remark	see remark	see remark	0.21	8139974	0.11	<0.10	0.10	8139974
RDL = Reportable Detection Limit N/A = Not Applicable										

RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER

Maxxam ID					NU4815		
Sampling Date					2015/12/08 13:30		
COC Number					G097926		
	UNITS	MAC	AO	OG	WELL #8	RDL	QC Batch
CONVENTIONALS							
Transmittance at 254nm	%T/cm	-	-	-	>97.7	N/A	8137936
Misc. Inorganics							
UV absorbance (254nm)	AU/cm	-	-	-	<0.010	0.010	8139535
ANIONS							
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050	8139482
Calculated Parameters							
Nitrate (N)	mg/L	10	-	-	0.104	0.020	8137825
Misc. Inorganics							
Fluoride (F)	mg/L	1.5	-	-	0.031	0.010	8139557
Alkalinity (Total as CaCO3)	mg/L	-	-	-	43.0	0.50	8141055
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<0.50	0.50	8141055
Bicarbonate (HCO3)	mg/L	-	-	-	52.5	0.50	8141055
Carbonate (CO3)	mg/L	-	-	-	<0.50	0.50	8141055
Hydroxide (OH)	mg/L	-	-	-	<0.50	0.50	8141055
Anions							
Dissolved Sulphate (SO4)	mg/L	-	500	-	0.65	0.50	8139471
Dissolved Chloride (Cl)	mg/L	-	250	-	2.6	0.50	8139469
MISCELLANEOUS							
Apparent Colour	Col. Unit	-	-	-	5.0	5.0	8140171
Tannins and Lignins	mg/L	-	-	-	<0.10	0.10	8141863
Nutrients							
Total Ammonia (N)	mg/L	-	-	-	<0.0050	0.0050	8140760
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.104	0.020	8139480
Physical Properties							
pH	pH	-	6.5:8.5	-	7.78	N/A	8141058
Physical Properties							
Total Dissolved Solids	mg/L	-	500	-	48	10	8140312
Turbidity	NTU	see remark	see remark	see remark	0.21	0.10	8139974
RDL = Reportable Detection Limit N/A = Not Applicable							

Maxxam Job #: B5A9041
Report Date: 2015/12/15

DEEP BAY IMPROVEMENT DISTRICT

MICROBIOLOGY (DRINKING WATER)

Maxxam ID			NU4808	NU4809	NU4810	NU4811	NU4812	NU4813		
Sampling Date			2015/12/08 11:15	2015/12/08 11:30	2015/12/08 12:00	2015/12/08 12:25	2015/12/08 12:45	2015/12/08 13:00		
COC Number			G097926	G097926	G097926	G097926	G097926	G097926		
	UNITS	MAC	#1 WELL	#3 WELL	#2 WELL	RESERVOIR	WELL #4	WELL #6	RDL	QC Batch
Microbiological Param.										
Total Coliforms	MPN/100mL	<1	<1	3.1	<1	3.1	<1	<1	1	8139397
E. coli	MPN/100mL	<1	<1	<1	<1	<1	<1	<1	1	8139397
RDL = Reportable Detection Limit										

Maxxam ID			NU4814	NU4815		
Sampling Date			2015/12/08 13:15	2015/12/08 13:30		
COC Number			G097926	G097926		
	UNITS	MAC	WELL #5	WELL #8	RDL	QC Batch
Microbiological Param.						
Total Coliforms	MPN/100mL	<1	<1	<1	1	8139397
E. coli	MPN/100mL	<1	<1	<1	1	8139397
RDL = Reportable Detection Limit						

CSR TOTAL METALS IN WATER WITH CV HG (DRINKING WATER)

Maxxam ID					NU4808	NU4809	NU4810		NU4811		
Sampling Date					2015/12/08 11:15	2015/12/08 11:30	2015/12/08 12:00		2015/12/08 12:25		
COC Number					G097926	G097926	G097926		G097926		
	UNITS	MAC	AO	OG	#1 WELL	#3 WELL	#2 WELL	QC Batch	RESERVOIR	RDL	QC Batch
Calculated Parameters											
Total Hardness (CaCO3)	mg/L	-	-	-	34.4	35.2	16.0	8137633	51.2	0.50	8137633
Total Metals by ICPMS											
Total Aluminum (Al)	ug/L	-	-	100	38.2	21.4	15.6	8139387	67.8	3.0	8139246
Total Antimony (Sb)	ug/L	6	-	-	<0.50	<0.50	<0.50	8139387	<0.50	0.50	8139246
Total Arsenic (As)	ug/L	10	-	-	<0.10	<0.10	<0.10	8139387	0.26	0.10	8139246
Total Barium (Ba)	ug/L	1000	-	-	<1.0	<1.0	<1.0	8139387	2.5	1.0	8139246
Total Beryllium (Be)	ug/L	-	-	-	<0.10	<0.10	<0.10	8139387	<0.10	0.10	8139246
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	<1.0	<1.0	8139387	<1.0	1.0	8139246
Total Boron (B)	ug/L	5000	-	-	<50	<50	<50	8139387	<50	50	8139246
Total Cadmium (Cd)	ug/L	5	-	-	0.031	<0.010	<0.010	8139387	<0.010	0.010	8139246
Total Chromium (Cr)	ug/L	50	-	-	<1.0	<1.0	<1.0	8139387	<1.0	1.0	8139246
Total Cobalt (Co)	ug/L	-	-	-	<0.50	<0.50	<0.50	8139387	<0.50	0.50	8139246
Total Copper (Cu)	ug/L	-	1000	-	114	2.84	9.45	8139387	<0.50	0.50	8139246
Total Iron (Fe)	ug/L	-	300	-	442	203	772	8139387	<10	10	8139246
Total Lead (Pb)	ug/L	10	-	-	14.3	1.25	3.25	8139387	<0.20	0.20	8139246
Total Lithium (Li)	ug/L	-	-	-	<5.0	<5.0	<5.0	8139387	<5.0	5.0	8139246
Total Manganese (Mn)	ug/L	-	50	-	6.6	2.8	5.2	8139387	<1.0	1.0	8139246
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	<1.0	<1.0	8139387	<1.0	1.0	8139246
Total Nickel (Ni)	ug/L	-	-	-	<1.0	<1.0	<1.0	8139387	<1.0	1.0	8139246
Total Phosphorus (P)	ug/L	-	-	-	13	16	12	8139387	17	10	8139246
Total Selenium (Se)	ug/L	50	-	-	<0.10	<0.10	<0.10	8139387	<0.10	0.10	8139246
Total Silicon (Si)	ug/L	-	-	-	10100	11800	6730	8139387	10100	100	8139246
Total Silver (Ag)	ug/L	-	-	-	<0.020	<0.020	<0.020	8139387	<0.020	0.020	8139246
Total Strontium (Sr)	ug/L	-	-	-	27.1	31.3	28.4	8139387	48.4	1.0	8139246
Total Thallium (Tl)	ug/L	-	-	-	<0.050	<0.050	<0.050	8139387	<0.050	0.050	8139246
Total Tin (Sn)	ug/L	-	-	-	<5.0	<5.0	<5.0	8139387	<5.0	5.0	8139246
Total Titanium (Ti)	ug/L	-	-	-	<5.0	<5.0	<5.0	8139387	<5.0	5.0	8139246
Total Uranium (U)	ug/L	20	-	-	<0.10	<0.10	<0.10	8139387	<0.10	0.10	8139246
Total Vanadium (V)	ug/L	-	-	-	<5.0	<5.0	<5.0	8139387	<5.0	5.0	8139246
Total Zinc (Zn)	ug/L	-	5000	-	224	22.0	23.0	8139387	<5.0	5.0	8139246
Total Calcium (Ca)	mg/L	-	-	-	9.64	9.94	4.81	8137932	17.4	0.050	8137932
Total Magnesium (Mg)	mg/L	-	-	-	2.50	2.53	0.980	8137932	1.87	0.050	8137932
Total Potassium (K)	mg/L	-	-	-	0.313	0.263	0.172	8137932	0.491	0.050	8137932
Total Sodium (Na)	mg/L	-	200	-	3.07	4.49	2.46	8137932	4.47	0.050	8137932
RDL = Reportable Detection Limit											

CSR TOTAL METALS IN WATER WITH CV HG (DRINKING WATER)

Maxxam ID					NU4812	NU4813	NU4814	NU4815		
Sampling Date					2015/12/08 12:45	2015/12/08 13:00	2015/12/08 13:15	2015/12/08 13:30		
COC Number					G097926	G097926	G097926	G097926		
	UNITS	MAC	AO	OG	WELL #4	WELL #6	WELL #5	WELL #8	RDL	QC Batch
Calculated Parameters										
Total Hardness (CaCO3)	mg/L	-	-	-	32.9	48.6	46.4	42.0	0.50	8137633
Total Metals by ICPCS										
Total Aluminum (Al)	ug/L	-	-	100	6.0	18.2	19.0	20.0	3.0	8140523
Total Antimony (Sb)	ug/L	6	-	-	<0.50	<0.50	<0.50	<0.50	0.50	8140523
Total Arsenic (As)	ug/L	10	-	-	<0.10	0.21	0.17	0.15	0.10	8140523
Total Barium (Ba)	ug/L	1000	-	-	<1.0	1.6	1.7	1.2	1.0	8140523
Total Beryllium (Be)	ug/L	-	-	-	<0.10	<0.10	<0.10	<0.10	0.10	8140523
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	<1.0	<1.0	<1.0	1.0	8140523
Total Boron (B)	ug/L	5000	-	-	<50	<50	<50	<50	50	8140523
Total Cadmium (Cd)	ug/L	5	-	-	<0.010	<0.010	<0.010	<0.010	0.010	8140523
Total Chromium (Cr)	ug/L	50	-	-	<1.0	<1.0	<1.0	<1.0	1.0	8140523
Total Cobalt (Co)	ug/L	-	-	-	<0.50	<0.50	<0.50	<0.50	0.50	8140523
Total Copper (Cu)	ug/L	-	1000	-	1.60	2.82	2.66	3.96	0.50	8140523
Total Iron (Fe)	ug/L	-	300	-	30	<10	10	39	10	8140523
Total Lead (Pb)	ug/L	10	-	-	0.30	0.48	0.60	0.24	0.20	8140523
Total Lithium (Li)	ug/L	-	-	-	<5.0	<5.0	<5.0	<5.0	5.0	8140523
Total Manganese (Mn)	ug/L	-	50	-	2.7	<1.0	1.0	<1.0	1.0	8140523
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	<1.0	<1.0	<1.0	1.0	8140523
Total Nickel (Ni)	ug/L	-	-	-	<1.0	<1.0	<1.0	<1.0	1.0	8140523
Total Phosphorus (P)	ug/L	-	-	-	<10	20	<10	<10	10	8140523
Total Selenium (Se)	ug/L	50	-	-	<0.10	<0.10	<0.10	<0.10	0.10	8140523
Total Silicon (Si)	ug/L	-	-	-	12900	12000	12400	11800	100	8140523
Total Silver (Ag)	ug/L	-	-	-	<0.020	<0.020	<0.020	<0.020	0.020	8140523
Total Strontium (Sr)	ug/L	-	-	-	26.9	26.9	26.5	24.5	1.0	8140523
Total Thallium (Tl)	ug/L	-	-	-	<0.050	<0.050	<0.050	<0.050	0.050	8140523
Total Tin (Sn)	ug/L	-	-	-	<5.0	<5.0	<5.0	<5.0	5.0	8140523
Total Titanium (Ti)	ug/L	-	-	-	<5.0	<5.0	<5.0	<5.0	5.0	8140523
Total Uranium (U)	ug/L	20	-	-	<0.10	<0.10	<0.10	<0.10	0.10	8140523
Total Vanadium (V)	ug/L	-	-	-	<5.0	<5.0	<5.0	<5.0	5.0	8140523
Total Zinc (Zn)	ug/L	-	5000	-	218	<5.0	<5.0	<5.0	5.0	8140523
Total Calcium (Ca)	mg/L	-	-	-	9.38	12.5	12.1	10.9	0.050	8137932
Total Magnesium (Mg)	mg/L	-	-	-	2.31	4.22	3.90	3.61	0.050	8137932
Total Potassium (K)	mg/L	-	-	-	0.224	0.306	0.382	0.315	0.050	8137932
Total Sodium (Na)	mg/L	-	200	-	3.35	3.18	3.60	3.27	0.050	8137932
RDL = Reportable Detection Limit										

GENERAL COMMENTS

MAC,AO,OG: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, October 2014.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.

Results relate only to the items tested.

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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8139246	Total Aluminum (Al)	2015/12/10	110	80 - 120	101	80 - 120	<3.0	ug/L	0.42	20
8139246	Total Antimony (Sb)	2015/12/10	105	80 - 120	105	80 - 120	<0.50	ug/L		
8139246	Total Arsenic (As)	2015/12/10	105	80 - 120	102	80 - 120	<0.10	ug/L	NC	20
8139246	Total Barium (Ba)	2015/12/10	101	80 - 120	105	80 - 120	<1.0	ug/L		
8139246	Total Beryllium (Be)	2015/12/10	99	80 - 120	97	80 - 120	<0.10	ug/L		
8139246	Total Bismuth (Bi)	2015/12/10	98	80 - 120	99	80 - 120	<1.0	ug/L		
8139246	Total Boron (B)	2015/12/10	108	80 - 120	101	80 - 120	<50	ug/L	NC	20
8139246	Total Cadmium (Cd)	2015/12/10	102	80 - 120	101	80 - 120	<0.010	ug/L	NC	20
8139246	Total Chromium (Cr)	2015/12/10	100	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
8139246	Total Cobalt (Co)	2015/12/10	99	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
8139246	Total Copper (Cu)	2015/12/10	100	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
8139246	Total Iron (Fe)	2015/12/10	102	80 - 120	102	80 - 120	<10	ug/L	NC	20
8139246	Total Lead (Pb)	2015/12/10	98	80 - 120	100	80 - 120	<0.20	ug/L	NC	20
8139246	Total Lithium (Li)	2015/12/10	100	80 - 120	101	80 - 120	<5.0	ug/L		
8139246	Total Manganese (Mn)	2015/12/10	103	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
8139246	Total Molybdenum (Mo)	2015/12/10	104	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
8139246	Total Nickel (Ni)	2015/12/10	98	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
8139246	Total Phosphorus (P)	2015/12/10					<10	ug/L		
8139246	Total Selenium (Se)	2015/12/10	103	80 - 120	105	80 - 120	<0.10	ug/L	NC	20
8139246	Total Silicon (Si)	2015/12/10					<100	ug/L		
8139246	Total Silver (Ag)	2015/12/10	101	80 - 120	100	80 - 120	<0.020	ug/L	NC	20
8139246	Total Strontium (Sr)	2015/12/10	NC	80 - 120	103	80 - 120	<1.0	ug/L		
8139246	Total Thallium (Tl)	2015/12/10	101	80 - 120	102	80 - 120	<0.050	ug/L		
8139246	Total Tin (Sn)	2015/12/10	104	80 - 120	100	80 - 120	<5.0	ug/L		
8139246	Total Titanium (Ti)	2015/12/10	101	80 - 120	91	80 - 120	<5.0	ug/L		
8139246	Total Uranium (U)	2015/12/10	102	80 - 120	102	80 - 120	<0.10	ug/L		
8139246	Total Vanadium (V)	2015/12/10	104	80 - 120	98	80 - 120	<5.0	ug/L		
8139246	Total Zinc (Zn)	2015/12/10	NC	80 - 120	101	80 - 120	<5.0	ug/L	NC	20
8139387	Total Aluminum (Al)	2015/12/10	NC	80 - 120	107	80 - 120	<3.0	ug/L	0.084	20
8139387	Total Antimony (Sb)	2015/12/10	115	80 - 120	113	80 - 120	<0.50	ug/L	NC	20
8139387	Total Arsenic (As)	2015/12/10	109	80 - 120	109	80 - 120	<0.10	ug/L	NC	20
8139387	Total Barium (Ba)	2015/12/10	NC	80 - 120	104	80 - 120	<1.0	ug/L	3.3	20

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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8139387	Total Beryllium (Be)	2015/12/10	102	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
8139387	Total Bismuth (Bi)	2015/12/10	108	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
8139387	Total Boron (B)	2015/12/10	109	80 - 120	110	80 - 120	<50	ug/L	NC	20
8139387	Total Cadmium (Cd)	2015/12/10	107	80 - 120	107	80 - 120	<0.010	ug/L	NC	20
8139387	Total Chromium (Cr)	2015/12/10	109	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
8139387	Total Cobalt (Co)	2015/12/10	107	80 - 120	104	80 - 120	<0.50	ug/L	NC	20
8139387	Total Copper (Cu)	2015/12/10	NC	80 - 120	102	80 - 120	<0.50	ug/L	0.74	20
8139387	Total Iron (Fe)	2015/12/10	NC	80 - 120	106	80 - 120	<10	ug/L	0.97	20
8139387	Total Lead (Pb)	2015/12/10	107	80 - 120	101	80 - 120	<0.20	ug/L	NC	20
8139387	Total Lithium (Li)	2015/12/10	99	80 - 120	92	80 - 120	<5.0	ug/L	NC	20
8139387	Total Manganese (Mn)	2015/12/10	NC	80 - 120	105	80 - 120	<1.0	ug/L	3.4	20
8139387	Total Molybdenum (Mo)	2015/12/10	NC	80 - 120	93	80 - 120	<1.0	ug/L	NC	20
8139387	Total Nickel (Ni)	2015/12/10	112	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
8139387	Total Phosphorus (P)	2015/12/10					<10	ug/L	NC	20
8139387	Total Selenium (Se)	2015/12/10	106	80 - 120	104	80 - 120	<0.10	ug/L	NC	20
8139387	Total Silicon (Si)	2015/12/10					<100	ug/L	2.3	20
8139387	Total Silver (Ag)	2015/12/10	103	80 - 120	85	80 - 120	<0.020	ug/L	NC	20
8139387	Total Strontium (Sr)	2015/12/10	NC	80 - 120	107	80 - 120	<1.0	ug/L	0.22	20
8139387	Total Thallium (Tl)	2015/12/10	108	80 - 120	101	80 - 120	<0.050	ug/L	NC	20
8139387	Total Tin (Sn)	2015/12/10	103	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
8139387	Total Titanium (Ti)	2015/12/10	111	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
8139387	Total Uranium (U)	2015/12/10	108	80 - 120	104	80 - 120	<0.10	ug/L	5.0	20
8139387	Total Vanadium (V)	2015/12/10	109	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
8139387	Total Zinc (Zn)	2015/12/10	NC	80 - 120	114	80 - 120	<5.0	ug/L	NC	20
8139397	E. coli	2015/12/08							NC	N/A
8139397	Total Coliforms	2015/12/08							NC	N/A
8139469	Dissolved Chloride (Cl)	2015/12/09	99	80 - 120	96	80 - 120	<0.50	mg/L	0.14	20
8139471	Dissolved Sulphate (SO4)	2015/12/09	NC	80 - 120	92	80 - 120	<0.50	mg/L	0.87	20
8139474	Dissolved Chloride (Cl)	2015/12/09			104	80 - 120	<0.50	mg/L		
8139476	Dissolved Sulphate (SO4)	2015/12/09			97	80 - 120	<0.50	mg/L		
8139480	Nitrate plus Nitrite (N)	2015/12/09	104	80 - 120	108	80 - 120	<0.020	mg/L	2.0	25
8139482	Nitrite (N)	2015/12/09			104	80 - 120	<0.0050	mg/L		

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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8139535	UV absorbance (254nm)	2015/12/09					<0.010	AU/cm	NC	20
8139557	Fluoride (F)	2015/12/09	100	80 - 120	98	80 - 120	0.011, RDL=0.010	mg/L	NC	20
8139566	Total Dissolved Solids	2015/12/11	104	80 - 120	96	80 - 120	<10	mg/L	NC	20
8139974	Turbidity	2015/12/10			101	80 - 120	<0.10	NTU	3.9	20
8140171	Apparent Colour	2015/12/10					<5.0	Col. Unit	NC	20
8140312	Total Dissolved Solids	2015/12/11	103	80 - 120	114	80 - 120	<10	mg/L	4.2	20
8140523	Total Aluminum (Al)	2015/12/14	104	80 - 120	110	80 - 120	<3.0	ug/L	NC	20
8140523	Total Antimony (Sb)	2015/12/14	105	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
8140523	Total Arsenic (As)	2015/12/14	99	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
8140523	Total Barium (Ba)	2015/12/14	99	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
8140523	Total Beryllium (Be)	2015/12/14	105	80 - 120	94	80 - 120	<0.10	ug/L	NC	20
8140523	Total Bismuth (Bi)	2015/12/14	104	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
8140523	Total Boron (B)	2015/12/14	106	80 - 120	106	80 - 120	<50	ug/L	NC	20
8140523	Total Cadmium (Cd)	2015/12/14	104	80 - 120	100	80 - 120	<0.010	ug/L	NC	20
8140523	Total Chromium (Cr)	2015/12/14	101	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
8140523	Total Cobalt (Co)	2015/12/14	101	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
8140523	Total Copper (Cu)	2015/12/14	101	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
8140523	Total Iron (Fe)	2015/12/14	97	80 - 120	103	80 - 120	<10	ug/L	NC	20
8140523	Total Lead (Pb)	2015/12/14	101	80 - 120	99	80 - 120	<0.20	ug/L	NC	20
8140523	Total Lithium (Li)	2015/12/14	100	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
8140523	Total Manganese (Mn)	2015/12/14	103	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
8140523	Total Molybdenum (Mo)	2015/12/14	95	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
8140523	Total Nickel (Ni)	2015/12/14	102	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
8140523	Total Phosphorus (P)	2015/12/14					<10	ug/L	NC	20
8140523	Total Selenium (Se)	2015/12/14	96	80 - 120	99	80 - 120	<0.10	ug/L	NC	20
8140523	Total Silicon (Si)	2015/12/14					<100	ug/L	1.4	20
8140523	Total Silver (Ag)	2015/12/14	102	80 - 120	98	80 - 120	<0.020	ug/L	NC	20
8140523	Total Strontium (Sr)	2015/12/14	NC	80 - 120	101	80 - 120	<1.0	ug/L	1.4	20
8140523	Total Thallium (Tl)	2015/12/14	98	80 - 120	97	80 - 120	<0.050	ug/L	NC	20
8140523	Total Tin (Sn)	2015/12/14	99	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
8140523	Total Titanium (Ti)	2015/12/14	99	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
8140523	Total Uranium (U)	2015/12/14	107	80 - 120	103	80 - 120	<0.10	ug/L	NC	20

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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8140523	Total Vanadium (V)	2015/12/14	98	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
8140523	Total Zinc (Zn)	2015/12/14	NC	80 - 120	103	80 - 120	<5.0	ug/L	0.016	20
8140760	Total Ammonia (N)	2015/12/10	98	80 - 120	111	80 - 120	0.0053, RDL=0.0050	mg/L	NC	20
8140775	Nitrite (N)	2015/12/10	92	80 - 120	97	80 - 120	<0.0050	mg/L	NC	20
8141055	Alkalinity (PP as CaCO3)	2015/12/10					<0.50	mg/L	NC	20
8141055	Alkalinity (Total as CaCO3)	2015/12/10	NC	80 - 120	96	80 - 120	<0.50	mg/L	3.8	20
8141055	Bicarbonate (HCO3)	2015/12/10					<0.50	mg/L	3.8	20
8141055	Carbonate (CO3)	2015/12/10					<0.50	mg/L	NC	20
8141055	Hydroxide (OH)	2015/12/10					<0.50	mg/L	NC	20
8141058	pH	2015/12/10			102	97 - 103			0.51	N/A
8141863	Tannins and Lignins	2015/12/11	94	80 - 120	93	80 - 120	<0.10	mg/L	NC	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Andy Lu, Data Validation Coordinator

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. For Service Group specific validation please refer to the Validation Signature Page.

