

2017 Potable Water Chemical Analysis- Distribution System

Exova Lot ID 1250828
 Control Number: C0085114
 Date Received: Jan 24, 2018
 Date Reported: Jan 29, 2018

Analytical Report- Promontory Zone 2 Reservoir

Reference Number
Sample Date Sample 1250828-1 January 23, 2018
Time Sample Location 11:25am WDS 46 / 3.6 °C
Sample Description Drinking Water
Sample Matrix

Analyte	Units	Nominal Detection		Guideline	Guideline
		Result	Limit	Limit	Comments
Metals Extractable					
Aluminum	Extractable mg/L	<0.001	0.001	0.1	Below OG
Antimony	Extractable mg/L	0.00006	0.00002	0.006	Below MAC
Arsenic	Extractable mg/L	0.0008	0.0001	0.010	Below MAC
Barium	Extractable mg/L	0.00999	0.0001	1	Below MAC
Boron	Extractable mg/L	0.007	0.002	5	Below MAC
Cadmium	Extractable mg/L	0.00002	0.00001	0.005	Below MAC
Chromium	Extractable mg/L	<0.00005	0.00005	0.05	Below MAC
Copper	Extractable mg/L	0.0008	0.0005	1.0	Below AO
Lead	Extractable mg/L	0.00002	0.00001	0.01	Below MAC
Selenium	Extractable mg/L	0.0005	0.0002	0.05	Below MAC
Uranium	Extractable mg/L	0.00004	0.00001	0.02	Below MAC
Vanadium	Extractable mg/L	0.00052	0.00005		
Zinc	Extractable mg/L	<0.0005	0.0005	5.0	Below AO
Physical and Aggregate Properties					
Colour	True Colour units	<5	5		
Turbidity	NTU	0.26	0.05		
Routine Water					
pH - Holding Time		Exceeded			
pH	at 25 °C	7.69		7.0-10.5	Within Range
Electrical Conductivity	^S/cm at 25 °C	129	1		
Calcium	Extractable mg/L	21	0.01		
Iron	Extractable mg/L	<0.004	0.004	0.3	Below AO
Magnesium	Extractable mg/L	1.8	0.02		
Manganese	Extractable mg/L	<0.001	0.001	0.05	Below AO
Potassium	Extractable mg/L	0.78	0.04		
Silicon	Extractable mg/L	3.8	0.005		
Sodium	Extractable mg/L	2.0	0.1	200	Below AO
T-Alkalinity	as CaCO3 mg/L	51	5		
Chloride	Dissolved mg/L	1.68	0.05	250	Below AO
Fluoride	Dissolved mg/L	0.02	0.01	1.5	Below MAC
Nitrate - N	Dissolved mg/L	0.21	0.01	10	Below MAC
Nitrite - N	Dissolved mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved mg/L	9.2	0.1	500	Below AO
Hardness	as CaCO3 (extractable) mg/L	59	1		
Total Dissolved Solids	Extractable mg/L	78	1		

Analytical Report- Mt Shannon Zone 1 Reservoir

Reference Number
 Sample Date Sample 1250828-2 January 23, 2018
 Time Sample Location 09:35am WDS 44 / 3.6 °C
 Sample Description Drinking Water
 Sample Matrix

Analyte		Units	Nominal Detection		Guideline	Guideline
			Result	Limit	Limit	Comments
Metals Extractable						
Aluminum	Extractable	mg/L	<0.001	0.001	0.1	Below OG
Antimony	Extractable	mg/L	0.00005	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0011	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0103	0.0001	1	Below MAC
Boron	Extractable	mg/L	0.007	0.002	5	Below MAC
Cadmium	Extractable	mg/L	<0.00001	0.00001	0.005	Below MAC
Chromium	Extractable	mg/L	<0.00005	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	<0.0005	0.0005	1.0	Below AO
Lead	Extractable	mg/L	0.00002	0.00001	0.01	Below MAC
Selenium	Extractable	mg/L	0.0003	0.0002	0.05	Below MAC
Uranium	Extractable	mg/L	0.00002	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00060	0.00005		
Zinc	Extractable	mg/L	0.0012	0.0005	5.0	Below AO
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.10	0.05		
Routine Water						
pH - Holding Time			Exceeded			
pH	at 25 °C		7.57		7.0-10.5	Within Range
Electrical Conductivity		^S/cm at 25 °C	122	1		
Calcium	Extractable	mg/L	19	0.01		
Iron	Extractable	mg/L	0.011	0.004	0.3	Below AO
Magnesium	Extractable	mg/L	1.7	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.05	Below AO
Potassium	Extractable	mg/L	0.85	0.04		
Silicon	Extractable	mg/L	3.9	0.005		
Sodium	Extractable	mg/L	2.3	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	49	5		
Chloride	Dissolved	mg/L	1.84	0.05	250	Below AO
Fluoride	Dissolved	mg/L	0.02	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.22	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	8.5	0.1	500	Below AO
Hardness	as CaCO3	mg/L	55	1		
	(extractable)					
Total Dissolved Solids	Extractable	mg/L	76	1		

Analytical Report- Chilliwack Mountain Zone 3 Reservoir

Reference Number
 Sample Date Sample 1250828-3 January 23, 2018
 Time Sample Location 07:45am WDS 53 / 3.6 °C
 Sample Description Drinking Water
 Sample Matrix

Analyte		Units	Nominal Detection		Guideline	Guideline
			Result	Limit	Limit	Comments
Metals Extractable						
Aluminum	Extractable	mg/L	<0.001	0.001	0.1	Below OG
Antimony	Extractable	mg/L	0.00005	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0006	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0096	0.0001	1	Below MAC
Boron	Extractable	mg/L	0.006	0.002	5	Below MAC
Cadmium	Extractable	mg/L	<0.00001	0.00001	0.005	Below MAC
Chromium	Extractable	mg/L	<0.00005	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0006	0.0005	1.0	Below AO
Lead	Extractable	mg/L	0.00007	0.00001	0.01	Below MAC
Selenium	Extractable	mg/L	0.0004	0.0002	0.05	Below MAC
Uranium	Extractable	mg/L	0.00001	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00046	0.00005		
Zinc	Extractable	mg/L	0.0030	0.0005	5.0	Below AO
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.09	0.05		
Routine Water						
pH - Holding Time			Exceeded			
pH	at 25 °C		7.48		7.0-10.5	Within Range
Electrical Conductivity		^S/cm at 25 °C	118	1		
Calcium	Extractable	mg/L	18	0.01		
Iron	Extractable	mg/L	0.008	0.004	0.3	Below AO
Magnesium	Extractable	mg/L	1.6	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.05	Below AO
Potassium	Extractable	mg/L	0.77	0.04		
Silicon	Extractable	mg/L	3.7	0.005		
Sodium	Extractable	mg/L	2.3	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	46	5		
Chloride	Dissolved	mg/L	2.14	0.05	250	Below AO
Fluoride	Dissolved	mg/L	0.02	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.25	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	7.7	0.1	500	Below AO
Hardness	as CaCO3	mg/L	51	1		
	(extractable)					
Total Dissolved Solids	Extractable	mg/L	71	1		

Analytical Report- Marble Hill Zone 2 Reservoir

Reference Number
 Sample Date Sample 1250828-4 January 23, 2018
 Time Sample Location 10:50am WDS 58 / 3.6 °C
 Sample Description Drinking Water
 Sample Matrix

Analyte		Units	Nominal Detection		Guideline	Guideline
			Result	Limit	Limit	Comments
Metals Extractable						
Aluminum	Extractable	mg/L	<0.001	0.001	0.1	Below OG
Antimony	Extractable	mg/L	0.00004	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0009	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0106	0.0001	1	Below MAC
Boron	Extractable	mg/L	0.007	0.002	5	Below MAC
Cadmium	Extractable	mg/L	<0.00001	0.00001	0.005	Below MAC
Chromium	Extractable	mg/L	<0.00005	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0007	0.0005	1.0	Below AO
Lead	Extractable	mg/L	0.00010	0.00001	0.01	Below MAC
Selenium	Extractable	mg/L	0.0004	0.0002	0.05	Below MAC
Uranium	Extractable	mg/L	0.00003	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00056	0.00005		
Zinc	Extractable	mg/L	0.0020	0.0005	5.0	Below AO
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.13	0.05		
Routine Water						
pH - Holding Time			Exceeded			
pH	at 25 °C		7.64		7.0-10.5	Within Range
Electrical Conductivity		^S/cm at 25 °C	126	1		
Calcium	Extractable	mg/L	20	0.01		
Iron	Extractable	mg/L	0.016	0.004	0.3	Below AO
Magnesium	Extractable	mg/L	1.7	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.05	Below AO
Potassium	Extractable	mg/L	0.80	0.04		
Silicon	Extractable	mg/L	3.7	0.005		
Sodium	Extractable	mg/L	2.1	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	49	5		
Chloride	Dissolved	mg/L	1.75	0.05	250	Below AO
Fluoride	Dissolved	mg/L	0.02	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.21	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	8.8	0.1	500	Below AO
Hardness	as CaCO3	mg/L	56	1		
	(extractable)					
Total Dissolved Solids	Extractable	mg/L	75	1		

Analytical Report- Annis Road Booster Station

Reference Number
 Sample Date Sample 1250828-5 January 23, 2018
 Time Sample Location 10:40am WDS 60 / 3.6 °C
 Sample Description Drinking Water
 Sample Matrix

Analyte		Units	Nominal Detection		Guideline	Guideline
			Result	Limit	Limit	Comments
Metals Extractable						
Aluminum	Extractable	mg/L	<0.001	0.001	0.1	Below OG
Antimony	Extractable	mg/L	0.00006	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0008	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0096	0.0001	1	Below MAC
Boron	Extractable	mg/L	0.007	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00001	0.00001	0.005	Below MAC
Chromium	Extractable	mg/L	<0.00005	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0013	0.0005	1.0	Below AO
Lead	Extractable	mg/L	0.00008	0.00001	0.01	Below MAC
Selenium	Extractable	mg/L	0.0004	0.0002	0.05	Below MAC
Uranium	Extractable	mg/L	0.00003	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00052	0.00005		
Zinc	Extractable	mg/L	0.0013	0.0005	5.0	Below AO
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.22	0.05		
Routine Water						
pH - Holding Time			Exceeded			
pH	at 25 °C		7.67		7.0-10.5	Within Range
Electrical Conductivity		^S/cm at 25 °C	129	1		
Calcium	Extractable	mg/L	21	0.01		
Iron	Extractable	mg/L	0.019	0.004	0.3	Below AO
Magnesium	Extractable	mg/L	1.8	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.05	Below AO
Potassium	Extractable	mg/L	0.80	0.04		
Silicon	Extractable	mg/L	3.8	0.005		
Sodium	Extractable	mg/L	2.1	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	51	5		
Chloride	Dissolved	mg/L	1.90	0.05	250	Below AO
Fluoride	Dissolved	mg/L	0.02	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.22	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	8.9	0.1	500	Below AO
Hardness	as CaCO3	mg/L	59	1		
	(extractable)					
Total Dissolved Solids	Extractable	mg/L	78	1		

Analytical Report- 6413 Lickman Road

Reference Number
 Sample Date Sample 1250828-6 January 23, 2018
 Time Sample Location 08:20am Lickman / 6413 /
 Sample Description 3.6 Drinking Water
 Sample Matrix

Analyte		Units	Nominal Detection		Guideline	Guideline
			Result	Limit	Limit	Comments
Metals Extractable						
Aluminum	Extractable	mg/L	<0.001	0.001	0.1	Below OG
Antimony	Extractable	mg/L	0.00004	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0009	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0099	0.0001	1	Below MAC
Boron	Extractable	mg/L	0.007	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00001	0.00001	0.005	Below MAC
Chromium	Extractable	mg/L	<0.00005	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0012	0.0005	1.0	Below AO
Lead	Extractable	mg/L	0.00006	0.00001	0.01	Below MAC
Selenium	Extractable	mg/L	0.0004	0.0002	0.05	Below MAC
Uranium	Extractable	mg/L	0.00003	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00054	0.00005		
Zinc	Extractable	mg/L	<0.0005	0.0005	5.0	Below AO
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.13	0.05		
Routine Water						
pH - Holding Time			Exceeded			
pH	at 25 °C		7.65		7.0-10.5	Within Range
Electrical Conductivity		^S/cm at 25 °C	127	1		
Calcium	Extractable	mg/L	21	0.01		
Iron	Extractable	mg/L	<0.004	0.004	0.3	Below AO
Magnesium	Extractable	mg/L	1.8	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.05	Below AO
Potassium	Extractable	mg/L	0.83	0.04		
Silicon	Extractable	mg/L	3.8	0.005		
Sodium	Extractable	mg/L	2.1	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	51	5		
Chloride	Dissolved	mg/L	1.70	0.05	250	Below AO
Fluoride	Dissolved	mg/L	0.02	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.19	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	8.9	0.1	500	Below AO
Hardness	as CaCO3	mg/L	59	1		
	(extractable)					
Total Dissolved Solids	Extractable	mg/L	78	1		

Analytical Report- Bell Road at Brice Road

Reference Number
 Sample Date Sample 1250828-7 January 23, 2018
 Time Sample Location 09:10am Bell & Brice / 10485
 Sample Description / 3.6 Drinking Water
 Sample Matrix

Analyte		Units	Nominal Detection		Guideline	Guideline
			Result	Limit	Limit	Comments
Metals Extractable						
Aluminum	Extractable	mg/L	0.001	0.001	0.1	Below OG
Antimony	Extractable	mg/L	0.00004	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0008	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0099	0.0001	1	Below MAC
Boron	Extractable	mg/L	0.006	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00001	0.00001	0.005	Below MAC
Chromium	Extractable	mg/L	<0.00005	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0006	0.0005	1.0	Below AO
Lead	Extractable	mg/L	0.00007	0.00001	0.01	Below MAC
Selenium	Extractable	mg/L	0.0005	0.0002	0.05	Below MAC
Uranium	Extractable	mg/L	0.00002	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00050	0.00005		
Zinc	Extractable	mg/L	0.0027	0.0005	5.0	Below AO
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.13	0.05		
Routine Water						
pH - Holding Time			Exceeded			
pH	at 25 °C		7.71		7.0-10.5	Within Range
Electrical Conductivity		^S/cm at 25 °C	130	1		
Calcium	Extractable	mg/L	21	0.01		
Iron	Extractable	mg/L	0.008	0.004	0.3	Below AO
Magnesium	Extractable	mg/L	1.8	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.05	Below AO
Potassium	Extractable	mg/L	0.79	0.04		
Silicon	Extractable	mg/L	3.8	0.005		
Sodium	Extractable	mg/L	2.0	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	51	5		
Chloride	Dissolved	mg/L	1.68	0.05	250	Below AO
Fluoride	Dissolved	mg/L	0.02	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.20	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	9.1	0.1	500	Below AO
Hardness	as CaCO3	mg/L	61	1		
	(extractable)					
Total Dissolved Solids	Extractable	mg/L	79	1		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alk, pH, EC, Turb in water (Surrey)	APHA	* Alkalinity - Titration Method, 2320 B	Jan 25, 2018	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* Conductivity, 2510 B	Jan 25, 2018	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* pH - Electrometric Method, 4500-H+ B	Jan 25, 2018	Exova Surrey
Anions by IEC in water (Surrey)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	Jan 25, 2018	Exova Surrey
Metals SemiTrace (Extractable) in water (Surrey)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	Jan 24, 2018	Exova Surrey
Trace Metals (extractable) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Jan 24, 2018	Exova Surrey
True Color in water (Surrey)	APHA	* Spectrophotometric - Single Wavelength Method, 2120 C	Jan 25, 2018	Exova Surrey
Turbidity - Water (Surrey)	APHA	* Turbidity - Nephelometric Method, 2130 B	Jan 26, 2018	Exova Surrey

* Reference Method Modified

References

APHA Standard Methods for the Examination of Water and Wastewater

US EPA US Environmental Protection Agency Test Methods

Guidelines

Guideline Description Health Canada GCDWQ

Guideline Source Guidelines for Canadian Drinking Water Quality, Health Canada, February 2017

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