

Report Transmission Cover Page

Bill To: City of Parksville 1116 Herring Gull Way Parksville, BC, Canada V9P 1R2	Project ID: Project Name: Full Spectrum Project Location: LSD: P.O.: S22-5095 Proj. Acct. code:	Lot ID: 1579675 Control Number: Date Received: Jun 21, 2022 Date Reported: Jun 27, 2022 Report Number: 2760003
Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Contact	Company	Address
Accounts Payable	City of Parksville	1116 Herring Gull Way Parksville, BC V9P 1R2 Phone: (250) 951-2489 Fax: Email: ap@parksville.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Single Deliverable	PDF	Invoice
Barbara Silenieks	City of Parksville	1116 Herring Gull Way Parksville, BC V9P 1R2 Phone: (250) 951-2489 Fax: Email: bsilenieks@parksville.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Single Deliverable	PDF	COA
Email - Single Deliverable	PDF	COC / Test Report
Email - Single Deliverable	Standard Crosstab Without Tabs	Test Report

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Analytical Report

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		Reference Number	1579675-1	1579675-2	1579675-3	
		Sample Date	Jun 20, 2022	Jun 20, 2022	Jun 20, 2022	
		Sample Time	09:40	09:05	09:15	
		Sample Location				
		Sample Description	River // 5.4 °C	Public Works Yard / 5.4 °C	Water Treatment Plant / 5.4 °C	
		Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit	
Inorganic Nonmetallic Parameters						
Cyanide	Total	mg/L	<0.002	<0.002	<0.002	0.002
Metals Total						
Calcium	Total	mg/L	6.8	6.7	6.7	0.01
Magnesium	Total	mg/L	0.76	0.71	0.79	0.02
Potassium	Total	mg/L	0.07	0.06	<0.04	0.04
Silicon	Total	mg/L	2.0	2.0	2.0	0.005
Sodium	Total	mg/L	2.3	9.2	9.4	0.1
Digestion	Preparation		Field Pres, digest as total Hg	Field Pres, digest as total Hg	Field Pres, digest as total Hg	
Mercury	Total	mg/L	<0.00001	<0.00001	<0.00001	0.00001
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	1553.1	<1.0	<1.0	1.0
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	12.0	<1.0	<1.0	1.0
Physical and Aggregate Properties						
Colour	True	Colour units	9	<5	<5	5
Turbidity		NTU	0.40	<0.10	0.25	0.1
Routine Water						
Digestion	Dissolved		Field filtered and Pres Dissol Exceeded	Field filtered and Pres Dissol Exceeded	Field filtered and Pres Dissol Exceeded	
pH - Holding Time						
pH	at 25 °C		7.26	7.51	7.55	0.01
Electrical Conductivity		µS/cm at 25 °C	55	86	88	1
T-Alkalinity	as CaCO3	mg/L	20	31	31	5
Chloride	Dissolved	mg/L	3.81	6.34	6.44	0.05
Fluoride	Dissolved	mg/L	0.05	<0.01	<0.01	0.01
Nitrate - N	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Nitrite - N	Dissolved	mg/L	<0.01	0.02	0.02	0.01
Sulfate (SO4)	Dissolved	mg/L	0.9	1.0	1.0	0.1
Hardness	as CaCO3 (dissolved)	mg/L	18	17	18	5
Total Dissolved Solids	Calculated	mg/L	31	46	47	1
Langelier Index			-2.0	-1.6	-1.5	
Trace Metals Total						
Aluminum	Total	mg/L	0.047	0.020	0.016	0.001
Antimony	Total	mg/L	0.00003	<0.00002	<0.00002	0.00002
Arsenic	Total	mg/L	0.0002	0.0002	0.0001	0.0001
Barium	Total	mg/L	0.0036	0.0032	0.0035	0.0001
Boron	Total	mg/L	0.007	0.007	0.008	0.002
Cadmium	Total	mg/L	<0.00001	<0.00001	<0.00001	0.00001

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	Sample Location					
	Sample Description	River // 5.4 °C	Public Works Yard / 5.4 °C	Water Treatment Plant / 5.4 °C		
	Matrix	Water	Water	Water		
Analyte	Units	Results	Results	Results	Nominal Detection Limit	
Trace Metals Total - Continued						
Chromium	Total	mg/L	0.00015	0.00013	0.00009	0.00005
Copper	Total	mg/L	0.0006	0.0032	0.0005	0.0002
Iron	Total	mg/L	0.079	0.021	0.018	0.002
Lead	Total	mg/L	0.00001	0.00020	<0.00001	0.00001
Manganese	Total	mg/L	0.003	0.001	0.001	0.001
Selenium	Total	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Strontium	Total	mg/L	0.024	0.024	0.025	0.0001
Uranium	Total	mg/L	0.00001	<0.00001	<0.00001	0.00001
Zinc	Total	mg/L	0.0009	0.0018	<0.0005	0.0005

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Reference Number	1579675-4	1579675-5
Sample Date	Jun 20, 2022	Jun 20, 2022
Sample Time	11:10	10:45
Sample Location		
Sample Description	Springwood # 5 / 5.4 °C	Springwood # 10 / 5.4 °C
Matrix	Water	Water


Analyte	Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters					
Cyanide	Total	mg/L	<0.002	<0.002	0.002
Metals Total					
Calcium	Total	mg/L	42	26	0.01
Magnesium	Total	mg/L	20	12	0.02
Potassium	Total	mg/L	0.89	0.62	0.04
Silicon	Total	mg/L	13	13	0.005
Sodium	Total	mg/L	13	7.2	0.1
Digestion	Preparation		Field Pres, digest as total Hg	Field Pres, digest as total Hg	
Mercury	Total	mg/L	<0.00001	<0.00001	0.00001
Microbiological Analysis					
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	<1.0	1.0
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	<1.0	1.0
Physical and Aggregate Properties					
Colour	True	Colour units	<5	<5	5
Turbidity		NTU	0.50	0.18	0.1
Routine Water					
Digestion	Dissolved		Field filtered and Pres Dissol Exceeded	Field filtered and Pres Dissol Exceeded	
pH - Holding Time					
pH	at 25 °C		7.69	7.65	0.01
Electrical Conductivity		µS/cm at 25 °C	428	272	1
T-Alkalinity	as CaCO3	mg/L	177	101	5
Chloride	Dissolved	mg/L	18.3	15.6	0.05
Fluoride	Dissolved	mg/L	0.05	0.06	0.01
Nitrate - N	Dissolved	mg/L	1.51	1.43	0.01
Nitrite - N	Dissolved	mg/L	<0.01	<0.01	0.01
Sulfate (SO4)	Dissolved	mg/L	7.9	5.6	0.1
Hardness	as CaCO3 (dissolved)	mg/L	174	111	5
Total Dissolved Solids	Calculated	mg/L	246	167	1
Langelier Index			0.1	-0.3	
Trace Metals Total					
Aluminum	Total	mg/L	0.004	0.001	0.001
Antimony	Total	mg/L	<0.00002	0.00002	0.00002
Arsenic	Total	mg/L	0.0003	0.0002	0.0001
Barium	Total	mg/L	0.011	0.0073	0.0001
Boron	Total	mg/L	0.014	0.010	0.002
Cadmium	Total	mg/L	<0.00001	<0.00001	0.00001

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Sample Date	Jun 20, 2022	Jun 20, 2022
Sample Time	11:10	10:45
Sample Location		
Sample Description	Springwood # 5 / 5.4 °C	Springwood # 10 / 5.4 °C
Matrix	Water	Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Trace Metals Total - Continued					
Chromium	Total	mg/L	0.00031	0.00031	0.00005
Copper	Total	mg/L	0.0012	0.0009	0.0002
Iron	Total	mg/L	0.089	0.012	0.002
Lead	Total	mg/L	0.00063	0.00010	0.00001
Manganese	Total	mg/L	0.038	0.020	0.001
Selenium	Total	mg/L	<0.0002	<0.0002	0.0002
Strontium	Total	mg/L	0.12	0.083	0.0001
Uranium	Total	mg/L	0.00023	0.00006	0.00001
Zinc	Total	mg/L	0.0059	0.0007	0.0005

Approved by: 
 Benjamin Morris, B.Sc
 Operations Manager

Methodology and Notes

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Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alk, pH, EC, Turb in water (BC)	APHA	* Alkalinity - Titration Method, 2320 B	Jun 22, 2022	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* Conductivity, 2510 B	Jun 22, 2022	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* pH - Electrometric Method, 4500-H+ B	Jun 22, 2022	Element Vancouver
Anions by IEC in water (VAN)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	Jun 21, 2022	Element Vancouver
Cyanide (Total) in water	US EPA	* US EPA method, 335.3	Jun 27, 2022	Element Edmonton - Roper Road
Mercury Low Level (Total) in water (VAN)	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	Jun 23, 2022	Element Vancouver
Metals SemiTrace (Dissolved) in water (VAN)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	Jun 22, 2022	Element Vancouver
Metals SemiTrace (Total) in Water (VAN)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	Jun 22, 2022	Element Vancouver
Total and E-Coli - Colilert - DW (VAN)	APHA	Enzyme Substrate Test, APHA 9223 B	Jun 21, 2022	Element Vancouver
Trace Metals (Total) in Water (VAN)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Jun 22, 2022	Element Vancouver
True Color in water (VAN)	APHA	* Spectrophotometric - Single Wavelength Method, 2120 C	Jun 21, 2022	Element Vancouver
Turbidity - Water (VAN)	APHA	* Turbidity - Nephelometric Method, 2130 B	Jun 21, 2022	Element Vancouver

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

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