

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.: S23-5095 Proj. Acct. code:	Lot ID: 1720096 Control Number: Date Received: Mar 19, 2024 Date Reported: Mar 25, 2024 Report Number: 2984857 Report Type: Final Report
Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Contact	Company	Address
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<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email	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	PDF	COA
Email - Merge	PDF	COC / Test Report
Email - Merge	Standard Crosstab Without Tabs	Test Report

Notes To Clients:

- Mar 20, 2024 - Sample 1720096-4; 9250597: Reduction of analytical volume was necessary for chloride analysis to bring results within the analytical range for sample 1720096-4. Detection limits are adjusted accordingly.
- Mar 20, 2024 - Sample 1720096-5; 9250598: Reduction of analytical volume was necessary for chloride analysis to bring results within the analytical range for sample 1720096-5. Detection limits are adjusted accordingly.

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Analytical Report

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.: S23-5095 Proj. Acct. code:	Lot ID: 1720096 Control Number: Date Received: Mar 19, 2024 Date Reported: Mar 25, 2024 Report Number: 2984857 Report Type: Final Report
Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-1
Sample Date	March 18, 2024
Sample Time	08:30
Sample Location	
Sample Description	Englishman River (Raw Water) // 6.4 °C
Sample Matrix	Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments	
Inorganic Nonmetallic Parameters						
Cyanide Total	mg/L	<0.002	0.002	0.2	Below MAC	
Metals Total						
Calcium Total	mg/L	5.7	0.01			
Magnesium Total	mg/L	0.78	0.02			
Potassium Total	mg/L	0.09	0.04			
Silicon Total	mg/L	2.7	0.005			
Sodium Total	mg/L	2.1	0.1	200	Below AO	
Digestion	Preparation	Field Pres, digest as total Hg				
Mercury Total	mg/L	<0.00001	0.00001	0.001	Below MAC	
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	101.2	1.0	0 per 100 mL	Above MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	1.0	1.0	0 per 100 mL	Above MAC
Physical and Aggregate Properties						
Colour	True	Colour units	6	5		
Turbidity		NTU	0.95	0.1	0.1/0.3/1.0 OG	
Routine Water						
Digestion	Dissolved		Lab filtered & preserved			
pH			6.95	0.01	7.0-10.5	Below Range
pH - Holding Time			Exceeded			
Electrical Conductivity	at 25 °C	µS/cm	40	1		
T-Alkalinity	as CaCO3	mg/L	14	5		
Chloride	Dissolved	mg/L	2.62	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.03	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	1.5	0.1	500	Below AO
Hardness	as CaCO3 (dissolved)	mg/L	16	5		
Total Dissolved Solids	Calculated	mg/L	27	1	500	Below AO
Langelier Index			-2.5			
Trace Metals Total						
Aluminum	Total	mg/L	0.12	0.001	0.1 OG; 2.9 MAC	Above OG
Antimony	Total	mg/L	0.00002	0.00002	0.006	Below MAC
Arsenic	Total	mg/L	0.0002	0.0001	0.010	Below MAC
Barium	Total	mg/L	0.0039	0.0001	2.0	Below MAC
Boron	Total	mg/L	0.005	0.002	5	Below MAC

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Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-1
Sample Date	March 18, 2024
Sample Time	08:30
Sample Location	
Sample Description	Englishman River (Raw Water) // 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Trace Metals Total - Continued						
Cadmium	Total	mg/L	<0.00001	0.00001	0.007	Below MAC
Chromium	Total	mg/L	0.00027	0.00005	0.05	Below MAC
Copper	Total	mg/L	0.0012	0.0002	1 AO; 2 MAC	Below AO
Iron	Total	mg/L	0.12	0.002	0.3	Below AO
Lead	Total	mg/L	0.00004	0.00001	0.005	Below MAC
Manganese	Total	mg/L	0.003	0.001	0.02 AO; 0.12 MAC	Below AO
Selenium	Total	mg/L	<0.0002	0.0002	0.05	Below MAC
Strontium	Total	mg/L	0.021	0.0001	7.0	Below MAC
Uranium	Total	mg/L	0.00001	0.00001	0.02	Below MAC
Zinc	Total	mg/L	0.0006	0.0005	5.0	Below AO

Analytical Report

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Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-2
Sample Date	March 18, 2024
Sample Time	08:45
Sample Location	
Sample Description	WTP Finished / 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Inorganic Nonmetallic Parameters						
Cyanide	Total	mg/L	<0.002	0.002	0.2	Below MAC
Metals Total						
Calcium	Total	mg/L	5.7	0.01		
Magnesium	Total	mg/L	0.73	0.02		
Potassium	Total	mg/L	0.09	0.04		
Silicon	Total	mg/L	2.6	0.005		
Sodium	Total	mg/L	11	0.1	200	Below AO
Digestion	Preparation		Field Pres, digest as total Hg			
Mercury	Total	mg/L	<0.00001	0.00001	0.001	Below MAC
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	1.02	0.1	0.1/0.3/1.0 OG	
Routine Water						
Digestion	Dissolved		Lab filtered & preserved			
pH			7.79	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Electrical Conductivity	at 25 °C	µS/cm	80	1		
T-Alkalinity	as CaCO3	mg/L	30	5		
Chloride	Dissolved	mg/L	5.86	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.03	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	1.5	0.1	500	Below AO
Hardness	as CaCO3 (dissolved)	mg/L	16	5		
Total Dissolved Solids	Calculated	mg/L	50	1	500	Below AO
Langelier Index			-1.3			
Trace Metals Total						
Aluminum	Total	mg/L	0.017	0.001	0.1 OG; 2.9 MAC	Below OG
Antimony	Total	mg/L	<0.00002	0.00002	0.006	Below MAC
Arsenic	Total	mg/L	<0.0001	0.0001	0.010	Below MAC
Barium	Total	mg/L	0.0034	0.0001	2.0	Below MAC
Boron	Total	mg/L	0.006	0.002	5	Below MAC

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Reference Number	1720096-2
Sample Date	March 18, 2024
Sample Time	08:45
Sample Location	
Sample Description	WTP Finished / 6.4 °C
Sample Matrix	Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments	
Trace Metals Total - Continued						
Cadmium	Total	mg/L	<0.00001	0.00001	0.007	Below MAC
Chromium	Total	mg/L	0.00015	0.00005	0.05	Below MAC
Copper	Total	mg/L	0.0004	0.0002	1 AO; 2 MAC	Below AO
Iron	Total	mg/L	0.003	0.002	0.3	Below AO
Lead	Total	mg/L	<0.00001	0.00001	0.005	Below MAC
Manganese	Total	mg/L	0.001	0.001	0.02 AO; 0.12 MAC	Below AO
Selenium	Total	mg/L	<0.0002	0.0002	0.05	Below MAC
Strontium	Total	mg/L	0.021	0.0001	7.0	Below MAC
Uranium	Total	mg/L	<0.00001	0.00001	0.02	Below MAC
Zinc	Total	mg/L	<0.0005	0.0005	5.0	Below AO

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Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-3
Sample Date	March 18, 2024
Sample Time	08:55
Sample Location	
Sample Description	PWY Test Port / 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Inorganic Nonmetallic Parameters						
Cyanide	Total	mg/L	<0.002	0.002	0.2	Below MAC
Metals Total						
Calcium	Total	mg/L	5.4	0.01		
Magnesium	Total	mg/L	0.78	0.02		
Potassium	Total	mg/L	0.07	0.04		
Silicon	Total	mg/L	2.8	0.005		
Sodium	Total	mg/L	11	0.1	200	Below AO
Digestion	Preparation		Field Pres, digest as total Hg			
Mercury	Total	mg/L	<0.00001	0.00001	0.001	Below MAC
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	<0.10	0.1	0.1/0.3/1.0 OG	
Routine Water						
Digestion	Dissolved		Lab filtered & preserved			
pH			7.68	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Electrical Conductivity	at 25 °C	µS/cm	78	1		
T-Alkalinity	as CaCO3	mg/L	29	5		
Chloride	Dissolved	mg/L	6.40	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.04	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	1.5	0.1	500	Below AO
Hardness	as CaCO3 (dissolved)	mg/L	16	5		
Total Dissolved Solids	Calculated	mg/L	50	1	500	Below AO
Langelier Index			-1.5			
Trace Metals Total						
Aluminum	Total	mg/L	0.017	0.001	0.1 OG; 2.9 MAC	Below OG
Antimony	Total	mg/L	<0.00002	0.00002	0.006	Below MAC
Arsenic	Total	mg/L	<0.0001	0.0001	0.010	Below MAC
Barium	Total	mg/L	0.0040	0.0001	2.0	Below MAC
Boron	Total	mg/L	0.005	0.002	5	Below MAC

Analytical Report

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Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-3
Sample Date	March 18, 2024
Sample Time	08:55
Sample Location	
Sample Description	PWY Test Port / 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Trace Metals Total - Continued						
Cadmium	Total	mg/L	<0.00001	0.00001	0.007	Below MAC
Chromium	Total	mg/L	0.00032	0.00005	0.05	Below MAC
Copper	Total	mg/L	0.0028	0.0002	1 AO; 2 MAC	Below AO
Iron	Total	mg/L	0.011	0.002	0.3	Below AO
Lead	Total	mg/L	0.00012	0.00001	0.005	Below MAC
Manganese	Total	mg/L	0.001	0.001	0.02 AO; 0.12 MAC	Below AO
Selenium	Total	mg/L	<0.0002	0.0002	0.05	Below MAC
Strontium	Total	mg/L	0.021	0.0001	7.0	Below MAC
Uranium	Total	mg/L	<0.00001	0.00001	0.02	Below MAC
Zinc	Total	mg/L	0.015	0.0005	5.0	Below AO

Analytical Report

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Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-4
Sample Date	March 18, 2024
Sample Time	09:50
Sample Location	
Sample Description	Railway Well #1 / 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Inorganic Nonmetallic Parameters						
Cyanide	Total	mg/L	<0.002	0.002	0.2	Below MAC
Metals Total						
Calcium	Total	mg/L	35	0.01		
Magnesium	Total	mg/L	19	0.02		
Potassium	Total	mg/L	0.84	0.04		
Silicon	Total	mg/L	11	0.005		
Sodium	Total	mg/L	8.2	0.1	200	Below AO
Digestion	Preparation		Field Pres, digest as total Hg			
Mercury	Total	mg/L	<0.00001	0.00001	0.001	Below MAC
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.32	0.1	0.1/0.3/1.0 OG	
Routine Water						
Digestion	Dissolved		Lab filtered & preserved			
pH			7.59	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Electrical Conductivity	at 25 °C	µS/cm	337	1		
T-Alkalinity	as CaCO3	mg/L	123	5		
Chloride	Dissolved	mg/L	32.1	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	1.23	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	7.3	0.1	500	Below AO
Hardness	as CaCO3 (dissolved)	mg/L	160	5		
Total Dissolved Solids	Calculated	mg/L	209	1	500	Below AO
Langelier Index			-0.2			
Trace Metals Total						
Aluminum	Total	mg/L	0.001	0.001	0.1 OG; 2.9 MAC	Below OG
Antimony	Total	mg/L	0.00002	0.00002	0.006	Below MAC
Arsenic	Total	mg/L	0.0004	0.0001	0.010	Below MAC
Barium	Total	mg/L	0.018	0.0001	2.0	Below MAC
Boron	Total	mg/L	0.013	0.002	5	Below MAC

Analytical Report

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Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-4
Sample Date	March 18, 2024
Sample Time	09:50
Sample Location	
Sample Description	Railway Well #1 / 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Trace Metals Total - Continued						
Cadmium	Total	mg/L	<0.00001	0.00001	0.007	Below MAC
Chromium	Total	mg/L	0.00097	0.00005	0.05	Below MAC
Copper	Total	mg/L	0.0026	0.0002	1 AO; 2 MAC	Below AO
Iron	Total	mg/L	0.095	0.002	0.3	Below AO
Lead	Total	mg/L	0.00046	0.00001	0.005	Below MAC
Manganese	Total	mg/L	0.14	0.001	0.02 AO; 0.12 MAC	Above MAC
Selenium	Total	mg/L	0.0002	0.0002	0.05	Below MAC
Strontium	Total	mg/L	0.10	0.0001	7.0	Below MAC
Uranium	Total	mg/L	0.00033	0.00001	0.02	Below MAC
Zinc	Total	mg/L	0.012	0.0005	5.0	Below AO

Analytical Report

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Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-5
Sample Date	March 18, 2024
Sample Time	10:05
Sample Location	
Sample Description	Railway Well #3 / 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Inorganic Nonmetallic Parameters						
Cyanide	Total	mg/L	<0.002	0.002	0.2	Below MAC
Metals Total						
Calcium	Total	mg/L	38	0.01		
Magnesium	Total	mg/L	19	0.02		
Potassium	Total	mg/L	0.78	0.04		
Silicon	Total	mg/L	12	0.005		
Sodium	Total	mg/L	10	0.1	200	Below AO
Digestion	Preparation		Field Pres, digest as total Hg			
Mercury	Total	mg/L	<0.00001	0.00001	0.001	Below MAC
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	<0.10	0.1	0.1/0.3/1.0 OG	
Routine Water						
Digestion	Dissolved		Lab filtered & preserved			
pH			7.61	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Electrical Conductivity	at 25 °C	µS/cm	369	1		
T-Alkalinity	as CaCO3	mg/L	127	5		
Chloride	Dissolved	mg/L	43.0	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	1.03	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	3.8	0.1	500	Below AO
Hardness	as CaCO3 (dissolved)	mg/L	170	5		
Total Dissolved Solids	Calculated	mg/L	226	1	500	Below AO
Langelier Index			-0.1			
Trace Metals Total						
Aluminum	Total	mg/L	<0.001	0.001	0.1 OG; 2.9 MAC	Below OG
Antimony	Total	mg/L	<0.00002	0.00002	0.006	Below MAC
Arsenic	Total	mg/L	0.0004	0.0001	0.010	Below MAC
Barium	Total	mg/L	0.0090	0.0001	2.0	Below MAC
Boron	Total	mg/L	0.011	0.002	5	Below MAC

Analytical Report

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Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-5
Sample Date	March 18, 2024
Sample Time	10:05
Sample Location	
Sample Description	Railway Well #3 / 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Trace Metals Total - Continued						
Cadmium	Total	mg/L	<0.00001	0.00001	0.007	Below MAC
Chromium	Total	mg/L	0.00060	0.00005	0.05	Below MAC
Copper	Total	mg/L	0.0007	0.0002	1 AO; 2 MAC	Below AO
Iron	Total	mg/L	0.011	0.002	0.3	Below AO
Lead	Total	mg/L	0.00015	0.00001	0.005	Below MAC
Manganese	Total	mg/L	0.035	0.001	0.02 AO; 0.12 MAC	Above AO
Selenium	Total	mg/L	<0.0002	0.0002	0.05	Below MAC
Strontium	Total	mg/L	0.12	0.0001	7.0	Below MAC
Uranium	Total	mg/L	0.00034	0.00001	0.02	Below MAC
Zinc	Total	mg/L	0.013	0.0005	5.0	Below AO

Analytical Report

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Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-6
Sample Date	March 18, 2024
Sample Time	10:35
Sample Location	
Sample Description	Spingwood Well #3 / 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Inorganic Nonmetallic Parameters						
Cyanide	Total	mg/L	<0.002	0.002	0.2	Below MAC
Metals Total						
Calcium	Total	mg/L	31	0.01		
Magnesium	Total	mg/L	15	0.02		
Potassium	Total	mg/L	0.84	0.04		
Silicon	Total	mg/L	12	0.005		
Sodium	Total	mg/L	9.5	0.1	200	Below AO
Digestion	Preparation		Field Pres, digest as total Hg			
Mercury	Total	mg/L	<0.00001	0.00001	0.001	Below MAC
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.12	0.1	0.1/0.3/1.0 OG	
Routine Water						
Digestion	Dissolved		Lab filtered & preserved			
pH			7.33	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Electrical Conductivity	at 25 °C	µS/cm	289	1		
T-Alkalinity	as CaCO3	mg/L	114	5		
Chloride	Dissolved	mg/L	19.2	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	1.22	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	7.5	0.1	500	Below AO
Hardness	as CaCO3 (dissolved)	mg/L	136	5		
Total Dissolved Solids	Calculated	mg/L	188	1	500	Below AO
Langelier Index			-0.5			
Trace Metals Total						
Aluminum	Total	mg/L	<0.001	0.001	0.1 OG; 2.9 MAC	Below OG
Antimony	Total	mg/L	<0.00002	0.00002	0.006	Below MAC
Arsenic	Total	mg/L	0.0005	0.0001	0.010	Below MAC
Barium	Total	mg/L	0.0074	0.0001	2.0	Below MAC
Boron	Total	mg/L	0.011	0.002	5	Below MAC

Analytical Report

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.: S23-5095 Proj. Acct. code:	Lot ID: 1720096 Control Number: Date Received: Mar 19, 2024 Date Reported: Mar 25, 2024 Report Number: 2984857 Report Type: Final Report
Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-6
Sample Date	March 18, 2024
Sample Time	10:35
Sample Location	
Sample Description	Spingwood Well #3 / 6.4 °C
Sample Matrix	Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments	
Trace Metals Total - Continued						
Cadmium	Total	mg/L	<0.00001	0.00001	0.007	Below MAC
Chromium	Total	mg/L	0.00057	0.00005	0.05	Below MAC
Copper	Total	mg/L	0.0024	0.0002	1 AO; 2 MAC	Below AO
Iron	Total	mg/L	0.018	0.002	0.3	Below AO
Lead	Total	mg/L	0.00049	0.00001	0.005	Below MAC
Manganese	Total	mg/L	0.040	0.001	0.02 AO; 0.12 MAC	Above AO
Selenium	Total	mg/L	<0.0002	0.0002	0.05	Below MAC
Strontium	Total	mg/L	0.086	0.0001	7.0	Below MAC
Uranium	Total	mg/L	0.00015	0.00001	0.02	Below MAC
Zinc	Total	mg/L	0.011	0.0005	5.0	Below AO

Analytical Report

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.: S23-5095 Proj. Acct. code:	Lot ID: 1720096 Control Number: Date Received: Mar 19, 2024 Date Reported: Mar 25, 2024 Report Number: 2984857 Report Type: Final Report
Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-7
Sample Date	March 18, 2024
Sample Time	10:20
Sample Location	
Sample Description	Spingwood Well #6 / 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Inorganic Nonmetallic Parameters						
Cyanide	Total	mg/L	<0.002	0.002	0.2	Below MAC
Metals Total						
Calcium	Total	mg/L	33	0.01		
Magnesium	Total	mg/L	16	0.02		
Potassium	Total	mg/L	0.83	0.04		
Silicon	Total	mg/L	13	0.005		
Sodium	Total	mg/L	8.3	0.1	200	Below AO
Digestion	Preparation		Field Pres, digest as total Hg			
Mercury	Total	mg/L	<0.00001	0.00001	0.001	Below MAC
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.18	0.1	0.1/0.3/1.0 OG	
Routine Water						
Digestion	Dissolved		Lab filtered & preserved			
pH			7.35	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Electrical Conductivity	at 25 °C	µS/cm	303	1		
T-Alkalinity	as CaCO3	mg/L	134	5		
Chloride	Dissolved	mg/L	16.2	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.89	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	5.3	0.1	500	Below AO
Hardness	as CaCO3 (dissolved)	mg/L	170	5		
Total Dissolved Solids	Calculated	mg/L	213	1	500	Below AO
Langelier Index			-0.3			
Trace Metals Total						
Aluminum	Total	mg/L	0.001	0.001	0.1 OG; 2.9 MAC	Below OG
Antimony	Total	mg/L	0.00002	0.00002	0.006	Below MAC
Arsenic	Total	mg/L	0.0003	0.0001	0.010	Below MAC
Barium	Total	mg/L	0.0070	0.0001	2.0	Below MAC
Boron	Total	mg/L	0.010	0.002	5	Below MAC

Analytical Report

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.: S23-5095 Proj. Acct. code:	Lot ID: 1720096 Control Number: Date Received: Mar 19, 2024 Date Reported: Mar 25, 2024 Report Number: 2984857 Report Type: Final Report
Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-7
Sample Date	March 18, 2024
Sample Time	10:20
Sample Location	
Sample Description	Spingwood Well #6 / 6.4 °C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Trace Metals Total - Continued						
Cadmium	Total	mg/L	0.00003	0.00001	0.007	Below MAC
Chromium	Total	mg/L	0.00056	0.00005	0.05	Below MAC
Copper	Total	mg/L	0.0078	0.0002	1 AO; 2 MAC	Below AO
Iron	Total	mg/L	0.040	0.002	0.3	Below AO
Lead	Total	mg/L	0.00099	0.00001	0.005	Below MAC
Manganese	Total	mg/L	0.010	0.001	0.02 AO; 0.12 MAC	Below AO
Selenium	Total	mg/L	<0.0002	0.0002	0.05	Below MAC
Strontium	Total	mg/L	0.095	0.0001	7.0	Below MAC
Uranium	Total	mg/L	0.00013	0.00001	0.02	Below MAC
Zinc	Total	mg/L	0.12	0.0005	5.0	Below AO

Analytical Report

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.: S23-5095 Proj. Acct. code:	Lot ID: 1720096 Control Number: Date Received: Mar 19, 2024 Date Reported: Mar 25, 2024 Report Number: 2984857 Report Type: Final Report
Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-8
Sample Date	March 18, 2024
Sample Time	10:55
Sample Location	
Sample Description	Memorial Test Port / 6.4 °C
Sample Matrix	Water

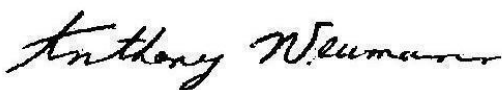
Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments	
Inorganic Nonmetallic Parameters						
Cyanide	Total	mg/L	<0.002	0.002	0.2	Below MAC
Metals Total						
Calcium	Total	mg/L	25	0.01		
Magnesium	Total	mg/L	12	0.02		
Potassium	Total	mg/L	0.57	0.04		
Silicon	Total	mg/L	8.9	0.005		
Sodium	Total	mg/L	11	0.1	200	Below AO
Digestion	Preparation		Field Pres, digest as total Hg			
Mercury	Total	mg/L	<0.00001	0.00001	0.001	Below MAC
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.11	0.1	0.1/0.3/1.0 OG	
Routine Water						
Digestion	Dissolved		Lab filtered & preserved			
pH			7.48	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Electrical Conductivity	at 25 °C	µS/cm	248	1		
T-Alkalinity	as CaCO3	mg/L	96	5		
Chloride	Dissolved	mg/L	18.9	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.84	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	4.9	0.1	500	Below AO
Hardness	as CaCO3 (dissolved)	mg/L	108	5		
Total Dissolved Solids	Calculated	mg/L	155	1	500	Below AO
Langelier Index			-0.5			
Trace Metals Total						
Aluminum	Total	mg/L	0.005	0.001	0.1 OG; 2.9 MAC	Below OG
Antimony	Total	mg/L	0.00002	0.00002	0.006	Below MAC
Arsenic	Total	mg/L	0.0003	0.0001	0.010	Below MAC
Barium	Total	mg/L	0.0092	0.0001	2.0	Below MAC
Boron	Total	mg/L	0.011	0.002	5	Below MAC

Analytical Report

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.: S23-5095 Proj. Acct. code:	Lot ID: 1720096 Control Number: Date Received: Mar 19, 2024 Date Reported: Mar 25, 2024 Report Number: 2984857 Report Type: Final Report
Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Reference Number	1720096-8
Sample Date	March 18, 2024
Sample Time	10:55
Sample Location	
Sample Description	Memorial Test Port / 6.4 °C
Sample Matrix	Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments	
Trace Metals Total - Continued						
Cadmium	Total	mg/L	<0.00001	0.00001	0.007	Below MAC
Chromium	Total	mg/L	0.023	0.00005	0.05	Below MAC
Copper	Total	mg/L	0.015	0.0002	1 AO; 2 MAC	Below AO
Iron	Total	mg/L	0.22	0.002	0.3	Below AO
Lead	Total	mg/L	0.00032	0.00001	0.005	Below MAC
Manganese	Total	mg/L	0.006	0.001	0.02 AO; 0.12 MAC	Below AO
Selenium	Total	mg/L	<0.0002	0.0002	0.05	Below MAC
Strontium	Total	mg/L	0.074	0.0001	7.0	Below MAC
Uranium	Total	mg/L	0.00015	0.00001	0.02	Below MAC
Zinc	Total	mg/L	0.015	0.0005	5.0	Below AO

Approved by: 
 Anthony Neumann, MSc
 General Manager

Methodology and Notes

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.: S23-5095 Proj. Acct. code:	Lot ID: 1720096 Control Number: Date Received: Mar 19, 2024 Date Reported: Mar 25, 2024 Report Number: 2984857 Report Type: Final Report
Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alk, pH, EC, Turb in water (BC)	APHA	* Alkalinity - Titration Method, 2320 B	Mar 19, 2024	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* Conductivity, 2510 B	Mar 19, 2024	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* pH - Electrometric Method, 4500-H+ B	Mar 19, 2024	Element Vancouver
Anions by IEC in water (VAN)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	Mar 19, 2024	Element Vancouver
Cyanide (Total) in water	US EPA	* US EPA method, 335.3	Mar 21, 2024	Element Edmonton - Roper Road
Mercury Low Level (Total) in water (VAN)	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	Mar 22, 2024	Element Vancouver
Metals SemiTrace (Dissolved) in water (VAN)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	Mar 20, 2024	Element Vancouver
Metals SemiTrace (Total) in Water (VAN)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	Mar 20, 2024	Element Vancouver
Total and E-Coli - Colilert - DW (VAN)	APHA	Enzyme Substrate Test, APHA 9223 B	Mar 19, 2024	Element Vancouver
Trace Metals (Total) in Water (VAN)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Mar 20, 2024	Element Vancouver
True Color in water (VAN)	APHA	* Spectrophotometric - Single Wavelength Method, 2120 C	Mar 19, 2024	Element Vancouver
Turbidity - Water (VAN)	APHA	* Turbidity - Nephelometric Method, 2130 B	Mar 19, 2024	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

Guidelines

Guideline Description	Health Canada GCDWQ
Guideline Source	Guidelines for Canadian Drinking Water Quality, Health Canada, Sept 2020
Guideline Comments	MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guideline for Water Treatment Plants (does not apply to private groundwater wells). Refer to Health Canada for complete guidelines at www.hc-sc.gc.ca

Comments:

- Mar 20, 2024 - Sample 1720096-4; 9250597: Reduction of analytical volume was necessary for chloride analysis to bring results within the analytical range for sample 1720096-4. Detection limits are adjusted accordingly.
- Mar 20, 2024 - Sample 1720096-5; 9250598: Reduction of analytical volume was necessary for chloride analysis to bring results within the analytical range for sample 1720096-5. Detection limits are adjusted accordingly.

Methodology and Notes

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.: S23-5095 Proj. Acct. code:	Lot ID: 1720096 Control Number: Date Received: Mar 19, 2024 Date Reported: Mar 25, 2024 Report Number: 2984857 Report Type: Final Report
Attn: Accounts Payable Sampled By: Barbara Silenieks Company: City of Parksville		

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.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

Invoice To

Report To

Additional Reports to

Company: City of Parksville
 Address: _____
 Attention: _____
 Phone: _____
 Cell: _____
 E-mail: _____
 Government Funded Work YES / NO
 SRP # _____
 Agreement ID: _____

Company: City of Parksville
 Address: _____
 Attention: _____
 Phone: _____
 Cell: _____
 Fax: _____
 E-mail 1: bsilenieks@parksville.ca
 E-mail 2: _____
 Copy of Invoice: YES / NO

1) Name: _____
 E-mail: _____
 2) Name: _____
 E-mail: _____
Sample Custody
 Sampled by: Barb Sileniek
 Company: City of Parksville
 I authorize Element to proceed with the work indicated on this form:
 Signature: [Signature]
 Date/Time: March 18 11:50

Project Information
 Project ID: _____
 Project Name: Fall Spectrum
 Project Location: _____
 Legal Location: _____
 PO/AFE#: _____
 Proj. Acct. Code: _____
 Quote #: _____

RUSH Priority

Report Results

Requirements

- Same Day (200%)
- Next Day/Two Day (100%)
- Three or Four Days (50%)
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

- Email QA/QC
- Online PDF
- Fax Excel

- HCDWQ SPIGEC
- AB Tier 1 BCCSR
- Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

Number of Containers	MeOH Field Preserved?														
		Routine	Microbiology	Total Metals	Mercury	Cyanide									

	Site I.D.	Sample Description	Depth		Date/Time sampled	Matrix	Sampling method	#	✓	Enter tests above (✓ relevant samples below)																		
			start	end																								
1	Englishman River	(Raw water)			March 18 8:30					✓	✓	✓	✓	✓														
2	WTP	Finished			March 18 8:45					✓	✓	✓	✓	✓														
3	PWY	Test Port			March 18 8:55					✓	✓	✓	✓	✓														
4	Railway well	#1			March 18 9:50					✓	✓	✓	✓	✓														
5	Railway well	#3			March 18 10:05					✓	✓	✓	✓	✓														
6	Springwood	well # 3			March 18 10:35					✓	✓	✓	✓	✓														
7	Springwood	well # 6			March 18 10:20					✓	✓	✓	✓	✓														
8	Memorial	Test Port			March 18 10:55					✓	✓	✓	✓	✓														
9																												
10																												
11																												
12																												
13																												
14																												
15																												

Please indicate any potentially hazardous samples
 Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms/terms-and-conditions>)
 Page _____ of _____ Control # _____
 ED 120-06

Lot: 1720096 COC



Temp. received: 6.4 °C Date/Time stamp: 21 MAR 19 9:02
 Delivery Method: PURO
 Waybill: _____
 Received by: LC