

**DRINKING WATER SYSTEM ANNUAL REPORT**

**Reporting Period:** January 1<sup>st</sup> to December 31<sup>st</sup>, (year)

**Water System**

**Water System Owner**

**Primary Contact Name** (Operator or Manager)

**Phone Number** (Operator or Manager)

**E-mail** (Operator or Manager)

**DESCRIBE YOUR WATER SUPPLY SYSTEM**

**What is the Source(s) of Raw Water?**

☐ Deep Well ☐ Shallow Well ☐ Surface Water ☐ Other

If other, specify details:

**Does the Drinking Water System have Primary Disinfection?**

☐ Yes ☐ No

☐ Chlorination ☐ Ultraviolet Light ☐ Ozone ☐ Other

If other, specify details:

**Does the Drinking Water System have Secondary Disinfection?**

☐ Yes ☐ No

☐ Chlorination ☐ Other

If other, specify details:

**Does the Drinking Water System have Filtration?**

☐ Yes ☐ No

Check all boxes that apply

☐ Cartridge Filter(s) ☐ Carbon Filter ☐ Sand Filtration ☐ Reverse Osmosis ☐ Other

If other, specify details:

**PUBLIC REPORTING**

**Emergency Response & Contingency Plan (ERCP)**

**Is your ERCP up to Date?** ☐ Yes ☐ No

**How do you Inform the System Users of the ERCP?**

☐ Hand Delivered ☐ Bulletin Board ☐ Newspaper ☐ Utility Bill Insert ☐ Website

☐ Other (specify details)

**Drinking Water System Annual Report**

**How do you Inform the System Users of the Annual Report?**

☐ Hand Delivered ☐ Bulletin Board ☐ Newspaper ☐ Utility Bill Insert ☐ Website

☐ Other (specify details)

### COMPLIANCE WITH OPERATING PERMIT

**List the conditions of your Operating Permit (Contact the DWO for a copy if needed):**

**Are you in compliance with your Operating Permit?**

☐ Yes

☐ No

### BACTERIOLOGICAL TESTING AND DRINKING WATER PROTECTION REGULATION WATER QUALITY STANDARDS

**How many bacteriological samples were collected during this reporting period?**

**What is the minimum required sampling frequency for this system? (#samples/month)**

Additional sampling details:

**Was the minimum required sampling frequency achieved?**

☐ Yes

☐ No

Comments:

**Bacteriological summary attached to this report?**

☐ Yes

☐ No

**If no, how do the users of the system view the results?**

### WATER QUALITY STANDARDS FOR POTABLE WATER

<b>Parameter:</b>	<b>Standard:</b>	<b>Did this system meet standard?</b>	
Escherichia coli (for all samples)	No detectable <i>Escherichia coli</i> per 100ml	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Total Coliform Bacteria (if only 1 sample collected in a 30 day period)	No detectable total coliform bacteria per 100ml	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Total Coliform Bacteria (if more than 1 sample collected in a 30 day period)	No more than 10% of samples contain total coliform bacteria, <b>and</b> No sample has more than 10 total coliform bacteria per 100ml	<input type="checkbox"/> Yes	<input type="checkbox"/> No

**If the system did not meet any of above Drinking Water Protection Regulation standards, record the results in the table below; attach additional sheets if necessary.**

<b>Date</b>	<b>TC/100ml</b>	<b>E.coli/100ml</b>	<b>Reason</b>	<b>Corrective Action</b>

### CHEMICAL SAMPLING COMPLETED DURING THIS REPORTING PERIOD

**Was any chemical sampling conducted during reporting period?** ☐ Yes ☐ No

**If no, when were the last chemical samples conducted for this system?**

(date) ☐ Don't Know ☐ Never

**If yes, did all water samples meet the Guidelines for Canadian Drinking Water Quality?**

☐ Yes ☐ No

**If any water samples did not meet the Guidelines for Canadian Drinking Water Quality, record the results in the table below; attach additional sheets if necessary.**

Parameter	Result	Corrective Action / Treatment / Comments

### ADDITIONAL TESTING

**Does the system have analyzers for continuous monitoring?** ☐ Yes ☐ No

**If yes, check all boxes that apply:**

☐ Chlorine ☐ Turbidity ☐ Other (details)

**Are the results available on request?**

**If any additional testing or sampling was conducted, record results in the table below; attach additional sheets if necessary.**

Additional Testing & Reason for Sampling	Corrective Action Taken

### WATER QUALITY COMPLAINTS

**Were there any water quality complaints in this reporting period? (e.g. taste, odour, colour etc.)** ☐ Yes ☐ No

**If yes, complete the table below; attach additional sheets if necessary.**

Date	Water Quality Complaint	Corrective Action / Treatment

### OPERATIONAL PROBLEMS

**Were there any operational problems during this reporting period? (e.g. insufficient water supply, malfunction of disinfection equipment, line breaks, elevated turbidity etc.).**

☐ Yes

☐ No

**If yes, complete the table below; attach additional sheets if necessary.**

Incident Date	Type of Operational Problem	Corrective Action Taken

### MAJOR UPGRADES/REPAIRS & EXPENSES

**Were there any major upgrades/repairs or any major costs incurred during this reporting period?**

☐ Yes

☐ No

**If yes, complete the table below; attach additional sheets if necessary.**

Major Upgrades/Expenses	Details
Improvements required by DWO	
Additions/changes to system	
Purchase or install new equipment	
Equipment repair or replacement	
Annual maintenance of system	
Specialist report	
Other	

### FUTURE IMPROVEMENTS

**Are there any plans for future improvements?**

☐ Yes

☐ No

**If yes, complete the table below; attach additional sheets if necessary.**

Future Upgrades or Improvements	Estimated Date of Completion

**Click here to enter a date.**

**DATE COMPLETED:**

**COMPLETED BY:**

## Report Transmission Cover Page

Bill To: Aaron Service 4703 Marine Avenue Powell River, BC, Canada V8A 2L2	Project ID: Project Name: Qathet Regional District Project Location: 2815 McCausland Rd., Powell River BC	Lot ID: <b>1727548</b> Control Number: Date Received: Apr 25, 2024 Date Reported: May 1, 2024 Report Number: 2997210 Report Type: Final Report
Attn: Coranne Anderson Sampled By: Regan Keil Company:	LSD: P.O.: 408230 Proj. Acct. code:	

Contact	Company	Address
<b>Accounts Payable</b>	<b>Aaron Service</b>	4703 Marine Avenue Powell River, BC V8A 2L2 Phone: (604) 485-5611 Fax: (604) 485-6858 Email: sales@aaronservice.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Email - Merge	PDF	Invoice
<b>Coranne Anderson</b>	<b>Aaron Service</b>	4703 Marine Avenue Powell River, BC V8A 2L2 Phone: (604) 485-5611 Fax: (604) 485-6858 Email: coranne@aaronservice.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email	PDF	COA
Email - Merge	PDF	COC / Test Report
Email - Merge	PDF	Invoice
<b>Ryan Anderson</b>	<b>Aaron Service</b>	4703 Marine Avenue Powell River, BC V8A 2L2 Phone: (604) 485-5611 Fax: (604) 485-6858 Email: ryan@aaronservice.com,ryan.aaronservice@gmail.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
<b>Trevor Anderson</b>	<b>Aaron Service</b>	4703 Marine Avenue Powell River, BC V8A 2L2 Phone: (604) 485-5611 Fax: (604) 485-6858 Email: trevor@aaronservice.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report

### Notes To Clients:

- Apr 29, 2024 - Sample 1727548-1; 9285980: Reduction of analytical volume was necessary for chloride analysis to bring results within the analytical range for sample 1727548-1. Detection limits are adjusted accordingly.

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## Analytical Report

Bill To: Aaron Service 4703 Marine Avenue Powell River, BC, Canada V8A 2L2	Project ID: Project Name: Qathet Regional District Project Location: 2815 McCausland Rd., Powell River BC	Lot ID: <b>1727548</b>
Attn: Coranne Anderson	LSD:	Control Number:
Sampled By: Regan Keil	P.O.: 408230	Date Received: Apr 25, 2024
Company:	Proj. Acct. code:	Date Reported: May 1, 2024
		Report Number: 2997210
		Report Type: Final Report

Reference Number	1727548-1
Sample Date	April 24, 2024
Sample Time	10:50
Sample Location	
Sample Description	8450 Plummer Creek Rd. - Northside Fire Hall / 7.1 °C
Sample Matrix	Drinking Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
<b>Aggregate Organic Constituents</b>					
UV Transmittance	%/cm	98.8	0.1		
<b>Inorganic Nonmetallic Parameters</b>					
Tannin & Lignin	as Tannic Acid	mg/L	<0.1	0.1	
<b>Metals Extractable</b>					
Aluminum	Extractable	mg/L	0.006	0.001	0.1 OG; 2.9 MAC
Antimony	Extractable	mg/L	0.00010	0.00002	0.006
Arsenic	Extractable	mg/L	0.0009	0.0001	0.010
Barium	Extractable	mg/L	0.0028	0.0001	2.0
Boron	Extractable	mg/L	0.028	0.002	5
Cadmium	Extractable	mg/L	0.00001	0.00001	0.007
Chromium	Extractable	mg/L	<0.00005	0.00005	0.05
Copper	Extractable	mg/L	0.022	0.0005	1 AO; 2 MAC
Lead	Extractable	mg/L	0.00085	0.00001	0.005
Selenium	Extractable	mg/L	<0.0002	0.0002	0.05
Strontium	Extractable	mg/L	0.040	0.0001	7.0
Uranium	Extractable	mg/L	0.00045	0.00001	0.02
Vanadium	Extractable	mg/L	0.0012	0.00005	
Zinc	Extractable	mg/L	0.040	0.0005	5.0
<b>Microbiological Analysis</b>					
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL
<b>Physical and Aggregate Properties</b>					
Colour	True	Colour units	<5	5	
Turbidity		NTU	0.17	0.1	0.1/0.3/1.0 OG
<b>Routine Water</b>					
pH			7.65	0.01	7.0-10.5
pH - Holding Time			Exceeded		
Temp. of observed pH		°C	23.2		
Electrical Conductivity	at 25 °C	µS/cm	386	1	
Calcium	Extractable	mg/L	29	0.01	
Iron	Extractable	mg/L	0.011	0.004	0.3
Magnesium	Extractable	mg/L	3.8	0.02	
Manganese	Extractable	mg/L	<0.001	0.001	0.02 AO; 0.12 MAC
Potassium	Extractable	mg/L	0.70	0.04	
Silicon	Extractable	mg/L	9.4	0.005	
Sodium	Extractable	mg/L	44	0.1	200

## Analytical Report

Bill To:	Aaron Service	Project ID:		Lot ID:	<b>1727548</b>
	4703 Marine Avenue	Project Name:	Qathet Regional District	Control Number:	
	Powell River, BC, Canada	Project Location:	2815 McCausland Rd.,	Date Received:	Apr 25, 2024
	V8A 2L2		Powell River BC	Date Reported:	May 1, 2024
Attn:	Coranne Anderson	LSD:		Report Number:	2997210
Sampled By:	Regan Keil	P.O.:	408230	Report Type:	Final Report
Company:		Proj. Acct. code:			

Reference Number	1727548-1
Sample Date	April 24, 2024
Sample Time	10:50
Sample Location	
Sample Description	8450 Plummer Creek Rd. - Northside Fire Hall / 7.1 °C
Sample Matrix	Drinking Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Routine Water - Continued						
T-Alkalinity	as CaCO <sub>3</sub>	mg/L	119	5		
Chloride	Dissolved	mg/L	40.2	0.05	250	Below AO
Fluoride	Dissolved	mg/L	0.03	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	0.36	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO <sub>4</sub> )	Dissolved	mg/L	10.6	0.1	500	Below AO
Hardness	as CaCO <sub>3</sub> (extractable)	mg/L	87	1		
Total Dissolved Solids	Extractable	mg/L	226	1	500	Below AO

## Analytical Report

Bill To: Aaron Service 4703 Marine Avenue Powell River, BC, Canada V8A 2L2	Project ID: Project Name: Qathet Regional District Project Location: 2815 McCausland Rd., Powell River BC	Lot ID: <b>1727548</b>
Attn: Coranne Anderson	LSD:	Control Number:
Sampled By: Regan Keil	P.O.: 408230	Date Received: Apr 25, 2024
Company:	Proj. Acct. code:	Date Reported: May 1, 2024
		Report Number: 2997210
		Report Type: Final Report

Reference Number	1727548-2
Sample Date	April 24, 2024
Sample Time	11:57
Sample Location	
Sample Description	7020 Powell Lake - Haywire Bay Campground / 7.1 °C
Sample Matrix	Drinking Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Aggregate Organic Constituents						
UV Transmittance		%/cm	99.0	0.1		
Inorganic Nonmetallic Parameters						
Tannin & Lignin as Tannic Acid		mg/L	<0.1	0.1		
Metals Extractable						
Aluminum	Extractable	mg/L	0.002	0.001	0.1 OG; 2.9 MAC	Below OG
Antimony	Extractable	mg/L	0.00003	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0001	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0007	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.007	0.002	5	Below MAC
Cadmium	Extractable	mg/L	<0.00001	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	<0.00005	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0021	0.0005	1 AO; 2 MAC	Below AO
Lead	Extractable	mg/L	0.00002	0.00001	0.005	Below MAC
Selenium	Extractable	mg/L	0.0005	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.019	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	0.0048	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.0027	0.00005		
Zinc	Extractable	mg/L	0.0020	0.0005	5.0	Below AO
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						
pH			7.67	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Temp. of observed pH		°C	23.0			
Electrical Conductivity	at 25 °C	µS/cm	203	1		
Calcium	Extractable	mg/L	19	0.01		
Iron	Extractable	mg/L	<0.004	0.004	0.3	Below AO
Magnesium	Extractable	mg/L	3.9	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.02 AO; 0.12 MAC	Below AO
Potassium	Extractable	mg/L	0.35	0.04		
Silicon	Extractable	mg/L	7.5	0.005		
Sodium	Extractable	mg/L	18	0.1	200	Below AO



## Analytical Report

Bill To: Aaron Service 4703 Marine Avenue Powell River, BC, Canada V8A 2L2	Project ID: Project Name: Qathet Regional District Project Location: 2815 McCausland Rd., Powell River BC	Lot ID: <b>1727548</b> Control Number: Date Received: Apr 25, 2024 Date Reported: May 1, 2024 Report Number: 2997210 Report Type: Final Report
Attn: Coranne Anderson Sampled By: Regan Keil Company:	LSD: P.O.: 408230 Proj. Acct. code:	

<b>Reference Number</b>	1727548-2
<b>Sample Date</b>	April 24, 2024
<b>Sample Time</b>	11:57
<b>Sample Location</b>	
<b>Sample Description</b>	7020 Powell Lake - Haywire Bay Campground / 7.1 °C
<b>Sample Matrix</b>	Drinking Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
<b>Routine Water - Continued</b>					
T-Alkalinity	as CaCO <sub>3</sub>	mg/L	88	5	
Chloride	Dissolved	mg/L	4.34	0.05	250 Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5 Below MAC
Nitrate - N	Dissolved	mg/L	0.06	0.01	10 Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1 Below MAC
Sulfate (SO <sub>4</sub> )	Dissolved	mg/L	9.6	0.1	500 Below AO
Hardness	as CaCO <sub>3</sub> (extractable)	mg/L	63	1	
Total Dissolved Solids	Extractable	mg/L	128	1	500 Below AO

Approved by:



Max Hewitt  
Operations Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

## Methodology and Notes

Bill To: Aaron Service 4703 Marine Avenue Powell River, BC, Canada V8A 2L2	Project ID: Project Name: Qathet Regional District Project Location: 2815 McCausland Rd., Powell River BC	Lot ID: <b>1727548</b>
Attn: Coranne Anderson	LSD:	Control Number:
Sampled By: Regan Keil	P.O.: 408230	Date Received: Apr 25, 2024
Company:	Proj. Acct. code:	Date Reported: May 1, 2024
		Report Number: 2997210
		Report Type: Final Report

## Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alk, pH, EC, Turb in water (BC)	APHA	* Alkalinity - Titration Method, 2320 B	Apr 26, 2024	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* Conductivity, 2510 B	Apr 26, 2024	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* pH - Electrometric Method, 4500-H+ B	Apr 26, 2024	Element Vancouver
Anions by IEC in water (VAN)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	Apr 26, 2024	Element Vancouver
Metals SemiTrace (Extractable) in water (VAN)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	Apr 29, 2024	Element Vancouver
Tannin and Lignin in water (VAN)	APHA	* Colorimetric Method, 5550 B	May 1, 2024	Element Vancouver
Total and E-Coli - Colilert - DW (VAN)	APHA	Enzyme Substrate Test, APHA 9223 B	Apr 25, 2024	Element Vancouver
Trace Metals (extractable) in Water (VAN)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Apr 26, 2024	Element Vancouver
True Color in water (VAN)	APHA	* Spectrophotometric - Single Wavelength Method, 2120 C	Apr 26, 2024	Element Vancouver
Turbidity - Water (VAN)	APHA	* Turbidity - Nephelometric Method, 2130 B	Apr 26, 2024	Element Vancouver
Ultraviolet Transmittance in Water	APHA	* Ultraviolet Absorption Method, 5910 B	Apr 26, 2024	Element Vancouver

\* 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, 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 <a href="http://www.hc-sc.gc.ca">www.hc-sc.gc.ca</a>

## Comments:

- Apr 29, 2024 - Sample 1727548-1; 9285980: Reduction of analytical volume was necessary for chloride analysis to bring results within the analytical range for sample 1727548-1. Detection limits are adjusted accordingly.

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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