

## DRINKING WATER SYSTEM ANNUAL REPORT

**Reporting Period:** January 1<sup>st</sup> to December 31<sup>st</sup>, 2020 (year)

**Water System** Village of Harrison Hot Springs Water System

**Water System Owner** Village of Harrison Hot Springs

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

**Phone Number** (Operator or Manager) 604-798-5974

**E-mail** (Operator or Manager) tsimmonds@harrisonhotsprings.ca

## 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: Ultra Filtration Membrane

## 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 that have been placed on your Operating Permit** (if you have conditions, these will be stated on your permit):

Are you in compliance with the conditions listed on your Operating Permit? ☐ Yes ☐ No ☒ N/A

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

How many bacteriological samples were collected during this reporting period? 100

What is the minimum required sampling frequency for this system? (#samples/month) 8/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

Parameter:	Standard:	Did this system meet standard?	
Escherichia coli (for all samples)	No detectable <i>Escherichia coli</i> per 100ml	<input checked="" 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 checked="" 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.**

Date	TC/100ml	E.coli/100ml	Reason	Corrective Action



## 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) pH

Are the results available on request? Yes

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

February 1, 2021

Water System Operators

**Re: Metals in Drinking Water – “Flush” Message in Annual Reports**

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Fraser Health has recently revised its metals at the tap “Flush” message and we are asking all water systems to please include the following health message with your next annual reports to your users.

***Anytime the water in a particular faucet has not been used for six hours or longer, “flush” your cold-water pipes by running the water until you notice a change in temperature. (This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer.) The more time water has been sitting in your home's pipes, the more lead it may contain.***

***Use only water from the cold-tap for drinking, cooking, and especially making baby formula. Hot water is likely to contain higher levels of lead.***

***The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.***

***Conserving water is still important. Rather than just running the water down the drain you could use the water for things such as watering your plants.***

If you have any questions, please contact our Drinking Water Program at 604-870-7903.

Sincerely,

Drinking Water Program  
Fraser Health Authority  
HPLand@fraserhealth.ca

## Sample Range Report

Fraser Health Authority

**Facility Name:** Village Of Harrison Hot Springs WS  
**Date Range:** Jan 1 2020 to Dec 31 2020

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>290 Esplanade, 290 Esplanade</u>				
	1-6-2020	L1	L1	
	2-24-2020 11:00:00 AM	LT1	LT1	
	4-14-2020 10:30:00 AM	LT1	LT1	
	6-1-2020 11:55:00 AM	LT1	LT1	
	7-20-2020 9:50:00 AM	QRWRT	QRWRT	
	9-8-2020 10:30:00 AM	LT1	LT1	
	10-27-2020 10:00:00 AM	LT1	LT1	
	12-14-2020 8:01:00 AM	<u>QRWRT</u>	<u>QRWRT</u>	
	Total Positive:	0	0	0
<u>843 Myng, 843 Myng</u>				
	2-10-2020 8:15:00 AM	LT1	LT1	
	3-30-2020 9:45:00 AM	LT1	LT1	
	5-19-2020 10:40:00 AM	LT1	LT1	
	7-6-2020 10:20:00 AM	LT1	LT1	
	8-24-2020 10:45:00 AM	LT1	LT1	
	10-13-2020 10:20:00 AM	LT1	LT1	
	11-30-2020 9:10:00 AM	<u>LT1</u>	<u>LT1</u>	
	Total Positive:	0	0	0
<u>526 Driftwood, 526 Driftwood</u>				
	1-14-2020	L1	L1	



3-2-2020 10:50:00 AM	LT1	LT1	
4-21-2020 10:00:00 AM	LT1	LT1	
6-8-2020 10:40:00 AM	LT1	LT1	
7-27-2020 9:00:00 AM	LT1	LT1	
9-14-2020 10:50:00 AM	LT1	LT1	
11-2-2020 12:13:00 PM	<u>LT1</u>	<u>LT1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

170 Cedar Avenue,  
170 Cedar Avenue

2-3-2020 11:25:00 AM	LT1	LT1	
3-23-2020 10:00:00 AM	LT1	LT1	
5-11-2020 10:30:00 AM	LT1	LT1	
6-29-2020 8:20:00 AM	LT1	LT1	
8-17-2020 10:00:00 AM	LT1	LT1	
10-5-2020 10:40:00 AM	LT1	LT1	
11-23-2020 10:05:00 AM	<u>LT1</u>	<u>LT1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Boat Launch  
Washrooms,  
Harrison Hotsprings

2-10-2020 8:00:00 AM	LT1	LT1	
3-30-2020 10:50:00 AM	LT1	LT1	
5-19-2020 10:20:00 AM	LT1	LT1	
7-6-2020 9:35:00 AM	LT1	LT1	
8-24-2020 10:30:00 AM	LT1	LT1	
10-13-2020 10:05:00 AM	LT1	LT1	
11-30-2020 8:25:00 AM	<u>LT1</u>	<u>LT1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

973 Hotsprings  
Road Tap, 973

Hotsprings Road

1-20-2020	L1	L1	
3-9-2020 11:15:00 AM	LT1	LT1	
4-27-2020 9:45:00 AM	LT1	LT1	
6-15-2020 10:40:00 AM	LT1	LT1	
8-4-2020 10:40:00 AM	LT1	LT1	
9-21-2020 10:45:00 AM	LT1	LT1	
11-9-2020 11:05:00 AM	<u>LT1</u>	<u>LT1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

442 Pine, 442 Pine

2-3-2020 11:15:00 AM	LT1	LT1	
3-23-2020 9:45:00 AM	LT1	LT1	
5-11-2020 10:15:00 AM	LT1	LT1	
6-29-2020 8:30:00 AM	LT1	LT1	
8-17-2020 10:30:00 AM	LT1	LT1	
10-5-2020 10:45:00 AM	LT1	LT1	
11-23-2020 9:30:00 AM	<u>LT1</u>	<u>LT1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Community  
Gardens,

1-27-2020 11:30:00 AM	LT1	LT1	
3-17-2020 11:00:00 AM	LT1	LT1	
5-4-2020 12:00:00 PM	LT1	LT1	
6-22-2020 9:10:00 AM	LT1	LT1	
8-10-2020 10:00:00 AM	LT1	LT1	
9-28-2020 10:30:00 AM	LT1	LT1	
11-16-2020 10:20:00 AM	<u>LT1</u>	<u>LT1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Beach Washrooms,  
Harrison Lake beach

1-14-2020	L1	L1	
3-2-2020 10:45:00 AM	LT1	LT1	
4-21-2020 10:15:00 AM	LT1	LT1	
6-8-2020 10:00:00 AM	LT1	LT1	
7-27-2020 9:15:00 AM	LT1	LT1	
9-14-2020 10:00:00 AM	LT1	LT1	
11-2-2020 11:45:00 AM	<u>LT1</u>	<u>LT1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Peace Park,

1-27-2020 11:30:00 AM	LT1	LT1	
3-17-2020 10:45:00 AM	LT1	LT1	
5-4-2020 12:00:00 PM	LT1	LT1	
6-22-2020 9:20:00 AM	LT1	LT1	
8-10-2020 10:10:00 AM	LT1	LT1	
9-28-2020 10:40:00 AM	LT1	LT1	
11-16-2020 10:05:00 AM	<u>LT1</u>	<u>LT1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Echo (Spring Park),

2-18-2020 11:30:00 AM	LT1	LT1	
4-6-2020 10:15:00 AM	LT1	LT1	
5-25-2020 10:40:00 AM	LT1	LT1	
7-13-2020 9:45:00 AM	LT1	LT1	
8-31-2020 10:40:00 AM	LT1	LT1	
10-19-2020 10:20:00 AM	LT1	LT1	
12-7-2020 10:30:00 AM	<u>LT1</u>	<u>LT1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Public Works Office,  
Public Works Office

1-20-2020	L1	L1
3-9-2020 11:20:00	LT1	LT1



AM		
4-27-2020 10:00:00	LT1	LT1
AM		
6-15-2020 10:50:00	LT1	LT1
AM		
8-4-2020 10:35:00	LT1	LT1
AM		
9-21-2020 10:10:00	LT1	LT1
AM		
11-9-2020 11:10:00	<u>LT1</u>	<u>LT1</u>
AM		
Total Positive:	0	0

0

Water Treatment  
Plant, Water  
Treatment Plant

2-18-2020 10:45:00	LT1	LT1
AM		
4-6-2020 10:00:00	LT1	LT1
AM		
5-25-2020 10:30:00	LT1	LT1
AM		
7-13-2020 9:30:00	LT1	LT1
AM		
8-31-2020 10:30:00	LT1	LT1
AM		
10-19-2020 10:05:00	LT1	LT1
AM		
12-7-2020 9:20:00	<u>LT1</u>	<u>LT1</u>
AM		
Total Positive:	0	0

0

459 Naismith (West  
End), 459 Naismith

1-6-2020	L1	L1
2-24-2020 10:45:00	LT1	LT1
AM		
4-14-2020 10:15:00	LT1	LT1
AM		
6-1-2020 11:50:00	LT1	LT1
AM		
7-20-2020 10:00:00	QRWRT	QRWRT
AM		
9-8-2020 10:45:00	LT1	LT1
AM		
10-27-2020 10:30:00	LT1	LT1
AM		
12-14-2020 8:35:00	<u>QRWRT</u>	<u>QRWRT</u>
AM		
Total Positive:	0	0

0

Result Values:

E - estimated

L - less than

G - greater than

Samples that contain total coliform:	0	0.00% of total
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Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of consecutive samples that contain total coliform:	0	
Number of samples that contain total coliform in last 30 days:	0/0	
Total number of samples:	100	

**Comments:**

\_\_\_\_\_  
Environmental Health Officer  
Jan 28 2021

FOR FURTHER INFORMATION PLEASE CALL: David Fowler



Environmental

## CERTIFICATE OF ANALYSIS

Work Order	: VA20A9150	Page	: 1 of 4
Client	: Village of Harrison Hot Springs	Laboratory	: Vancouver - Environmental
Contact	: Tyler Simmonds	Account Manager	: Rojina Ghavami
Address	: PO Box 160 495 Hot Springs Road Harrison Hot Springs BC Canada V0M 1K0	Address	: 8081 Louheed Highway Burnaby BC Canada V5A 1W9
Telephone	: ---	Telephone	: +1 604 253 4188
Project	: June 2020 Water Samples	Date Samples Received	: 25-Jun-2020 13:00
PO	: 17074	Date Analysis Commenced	: 25-Jun-2020
C-O-C number	: 17-843717	Issue Date	: 06-Jul-2020 14:08
Sampler	: Bruce		
Site	:		
Quote number	: Quote for Harrison Hot Springs		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory/Department
Caitlin Macey	Team Leader - Inorganics	Inorganics - Water Quality, Burnaby, British Columbia
Caitlin Macey	Team Leader - Inorganics	Microbiology, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics - Water Quality, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics - Water Quality, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Inorganics - Water Quality, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sandra Cummings	Interim Department Manager - LCMS	LCMS, Waterloo, Ontario





## General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	Description
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
CU	colour units
mg/L	milligrams per litre
MPN/100mL	most probable number per 100 mL
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED ON SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in reports identified as "Preliminary Report" are considered authorized for use.



## Analytical Results

Sub-Matrix: Water  
 (Matrix: Water)

		Client sample ID		Raw Water	Treated Water	Distribution System (Peace Park)	Art Gallery	
		Client sampling date / time		25-Jun-2020 07:30	25-Jun-2020 07:30	25-Jun-2020 07:30	25-Jun-2020 07:30	----
Analyte	CAS Number	Method	LOR	Unit	Result	Result	Result	Result
<b>Physical Tests</b>								
alkalinity, total (as CaCO <sub>3</sub> )	---	E290	1.0	mg/L	16.5	17.0	16.7	40.7
colour, true	---	E329	5.0	CU	<5.0	<5.0	<5.0	<5.0
conductivity	---	E100	2.0	µS/cm	49.2	54.2	54.5	110
pH	---	E108	0.10	pH units	7.39	7.44	7.43	7.25
solids, total dissolved [TDS]	---	E162	10	mg/L	35	34	38	77
turbidity	---	E121	0.10	NTU	0.28	<0.10	<0.10	<0.10
hardness (as CaCO <sub>3</sub> ), from total Ca/Mg	---	EC100A	0.60	mg/L	19.2	19.6	19.1	45.4
<b>Anions and Nutrients</b>								
chloride	16887-00-6	E235.Cl	0.50	mg/L	0.66	1.74	1.78	3.32
fluoride	16984-48-8	E235.F	0.020	mg/L	0.020	0.020	0.020	<0.020
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0494	0.0547	0.0566	0.0500
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.30	mg/L	5.22	5.24	5.24	6.53
<b>Bacteriological Tests</b>								
coliforms, Escherichia coli [E. coli]	---	E010.EC	1	MPN/100mL	<1	<1	<1	<1
coliforms, total	---	E010.TC	1	MPN/100mL	11	<1	<1	<1
<b>Total Metals</b>								
aluminum, total	7429-90-5	E420	0.0100	mg/L	0.0294	0.0121	0.0110	<0.0100
antimony, total	7440-36-0	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00025	0.00017	0.00018	<0.00010
barium, total	7440-39-3	E420	0.0200	mg/L	<0.0200	<0.0200	<0.0200	<0.0200
boron, total	7440-42-8	E420	0.100	mg/L	<0.100	<0.100	<0.100	<0.100
cadmium, total	7440-43-9	E420	0.000200	mg/L	<0.000200	<0.000200	<0.000200	<0.000200
calcium, total	7440-70-2	E420	0.100	mg/L	6.46	6.56	6.47	15.5
chromium, total	7440-47-3	E420	0.00200	mg/L	<0.00200	<0.00200	<0.00200	<0.00200
copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0.00230	0.104
iron, total	7439-89-6	E420	0.030	mg/L	<0.030	<0.030	<0.030	<0.030
lead, total	7439-92-1	E420	0.000500	mg/L	<0.000500	<0.000500	<0.000500	0.00235
magnesium, total	7439-95-4	E420	0.100	mg/L	0.750	0.775	0.723	1.63



## Analytical Results

Sub-Matrix: Water  
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)		Client sample ID		Raw Water	Treated Water	Distribution System (Peace Park)	Art Gallery	-----	
Analyte	CAS Number	Method	LOR	Unit	Client sampling date / time				-----
					25-Jun-2020 07:30	25-Jun-2020 07:30	25-Jun-2020 07:30	25-Jun-2020 07:30	-----
					VA20A9150-001	VA20A9150-002	VA20A9150-003	VA20A9150-004	-----
					Result	Result	Result	Result	-----
Total Metals									
manganese, total	7439-96-5	E420	0.00200	mg/L	<0.00200	<0.00200	<0.00200	0.0118	-----
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	-----
potassium, total	7440-09-7	E420	0.100	mg/L	0.605	0.628	0.607	0.616	-----
selenium, total	7782-49-2	E420	0.00100	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	-----
sodium, total	7440-23-5	E420	2.00	mg/L	<2.00	2.36	2.25	2.98	-----
uranium, total	7440-61-1	E420	0.000100	mg/L	<0.000100	<0.000100	<0.000100	<0.000100	-----
zinc, total	7440-66-6	E420	0.0500	mg/L	<0.0500	<0.0500	<0.0500	0.0543	-----
Haloacetic Acids									
bromochloroacetic acid	5589-96-8	E750	1.00	µg/L	----	<1.00	<1.00	-----	-----
dibromoacetic acid	631-64-1	E750	1.00	µg/L	----	<1.00	<1.00	-----	-----
dichloroacetic acid	79-43-6	E750	1.00	µg/L	----	9.28	6.02	-----	-----
monobromoacetic acid	79-08-3	E750	1.00	µg/L	----	<1.00	<1.00	-----	-----
monochloroacetic acid	79-11-8	E750	1.00	µg/L	----	<1.00	<1.00	-----	-----
trichloroacetic acid	76-03-9	E750	1.00	µg/L	----	15.0	18.7	-----	-----
haloacetic acids, total [HAA5]	----	E750	5.00	µg/L	----	24.3	24.7	-----	-----

Please refer to the General Comments section for an explanation of any qualifiers detected.





Environmental

## CERTIFICATE OF ANALYSIS

Work Order : **VA20C2794**

Page : 1 of 4

Amendment : **1**

Client : **Village of Harrison Hot Springs**

Contact : **Tyler Sirmmonds**

Address : **PO Box 160 495 Hot Springs Road**

Telephone : **Harrison Hot Springs BC Canada V0M 1K0**

Project : **WTP Dec 2020**

PO : **17417**

C-O-C number : **17-864245**

Sampler : **Tyler Sirmmonds**

Site :

Quote number : **Quote for Harrison Hot Springs**

No. of samples received : **3**

No. of samples analysed : **3**

Laboratory : **Vancouver - Environmental**

Account Manager : **Sneha Sansare**

Address : **8081 Loughheed Highway**

Telephone : **Burnaby BC Canada V5A 1W9**

Date Samples Received : **+1 604 253 4188**

Date Analysis Commenced : **08-Dec-2020 12:40**

Issue Date : **08-Dec-2020**

Issue Date : **15-Dec-2020 17:41**

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

#### Signatories

#### Position

#### Laboratory Department

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## General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference. Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances  
 LOR: Limit of Reporting (detection limit).

Unit	Description
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
CU	colour units (1 CU = 1 mg/L Pt)
mg/L	milligrams per litre
MPN/100mL	most probable number per 100 mL
NTU	nephelometric turbidity units
pH units	pH units

<: less than.  
 >: greater than.  
 Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.  
 UNLESS OTHERWISE STATED ON SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.  
 Analytical results in reports identified as "Preliminary Report" are considered authorized for use.



## Analytical Results

Sub-Matrix: Water  
 (Matrix: Water)

Client sample ID				RAW Water	Treated Water	Peace Park (system samples)	---	---
Client sampling date / time				08-Dec-2020 08:00	08-Dec-2020 08:00	08-Dec-2020 08:00	---	---
Analyte	CAS Number	Method	LOR	Unit	Result	Result	Result	---
<b>Physical Tests</b>								
alkalinity, total (as CaCO <sub>3</sub> )	---	E290	1.0	mg/L	14.7	14.9	14.9	---
colour, true	---	E329	5.0	CU	<5.0	<5.0	<5.0	---
conductivity	---	E100	2.0	µS/cm	46.0	50.4	50.6	---
pH	---	E108	0.10	pH units	7.33	7.34	7.34	---
solids, total dissolved (TDS)	---	E162	10	mg/L	30	36	36	---
turbidity	---	E121	0.10	NTU	1.04	0.15	<0.10	---
hardness (as CaCO <sub>3</sub> ), from total Ca/Mg	---	EC100A	0.60	mg/L	17.5	17.1	17.4	---
<b>Anions and Nutrients</b>								
chloride	16887-00-6	E235.Cl	0.50	mg/L	0.58	1.70	1.74	---
fluoride	16984-48-8	E235.F	0.020	mg/L	0.021	0.023	0.023	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0540	0.0535	0.0540	---
nitrite (as N)	14797-85-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	---
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.30	mg/L	5.04	5.07	5.06	---
<b>Bacteriological Tests</b>								
coliforms, Escherichia coli [E. coli]	---	E010.EC	1	MPN/100mL	1	<1	<1	---
coliforms, total	---	E010.TC	1	MPN/100mL	3	<1	<1	---
<b>Total Metals</b>								
aluminum, total	7429-90-5	E420	0.0100	mg/L	0.0755	0.0101	0.0102	---
antimony, total	7440-36-0	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	---
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00018	0.00016	0.00015	---
barium, total	7440-39-3	E420	0.0200	mg/L	<0.0200	<0.0200	<0.0200	---
boron, total	7440-42-8	E420	0.100	mg/L	<0.100	<0.100	<0.100	---
cadmium, total	7440-43-9	E420	0.000200	mg/L	<0.000200	<0.000200	<0.000200	---
calcium, total	7440-70-2	E420	0.100	mg/L	5.96	5.85	5.92	---
chromium, total	7440-47-3	E420	0.00200	mg/L	<0.00200	<0.00200	<0.00200	---
copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0.00146	---
iron, total	7439-89-6	E420	0.030	mg/L	0.041	<0.030	<0.030	---
lead, total	7439-92-1	E420	0.000500	mg/L	<0.000500	<0.000500	<0.000500	---
magnesium, total	7439-95-4	E420	0.100	mg/L	0.640	0.615	0.622	---



# Water Sample Schedule 2021

Date	Site 1	Site 2	Site 3	
January				
4	290 Esplanade	459 naismith	98 Rockwell Dr	
11	Beach Washrooms	526 Driftwood		
18	Public Works Office	973 Hotsprings Rd/Tap	98 Rockwell Dr	
25	Peace Park	Community Garden		
February				
1	170 Cedar	442 Pine	98 Rockwell Dr	
8	Boatlaunch Washrooms	843 Myng		
15	Echo (Spring Park)	Water Treatment Plant	98 Rockwell Dr	
22	290 Esplanade	459 naismith		
March				
1	Beach Washrooms	526 Driftwood	98 Rockwell Dr	
8	Public Works Office	973 Hotsprings Rd/Tap		
15	Peace Park	Community Garden	98 Rockwell Dr	
22	170 Cedar	442 Pine		
29	Boatlaunch Washrooms	843 Myng		
April				
5	Echo (Spring Park)	Water Treatment Plant	98 Rockwell Dr	
12	290 Esplanade	459 naismith		
19	Beach Washrooms	526 Driftwood	98 Rockwell Dr	
26	Public Works Office	973 Hotsprings Rd/Tap		
May				
3	Peace Park	Community Garden	98 Rockwell Dr	
10	170 Cedar	442 Pine		
17	Boatlaunch Washrooms	843 Myng	98 Rockwell Dr	
24	Echo (Spring Park)	Water Treatment Plant		
31	290 Esplanade	459 naismith	98 Rockwell Dr	
June				
7	Beach Washrooms	526 Driftwood		
14	Public Works Office	973 Hotsprings Rd/Tap	98 Rockwell Dr	
21	Peace Park	Community Garden		
28	170 Cedar	442 Pine		
July				
5	Boatlaunch Washrooms	843 Myng	98 Rockwell Dr	
12	Echo (Spring Park)	Water Treatment Plant		
19	290 Esplanade	459 naismith	98 Rockwell Dr	
26	Beach Washrooms	526 Driftwood		
August				
2	Public Works Office	973 Hotsprings Rd/Tap	98 Rockwell Dr	
9	Peace Park	Community Garden		
16	170 Cedar	442 Pine	98 Rockwell Dr	
23	Boatlaunch Washrooms	843 Myng		
30	Echo (Spring Park)	Water Treatment Plant		

# Water Sample Schedule 2021

September				
6	290 Esplanade	459 naismith	98 Rockwell Dr	
13	Beach Washrooms	526 Driftwood		
20	Public Works Office	973 Hotsprings Rd/Tap	98 Rockwell Dr	
27	Peace Park	Community Garden		
October				
4	170 Cedar	442 Pine	98 Rockwell Dr	
11	Boatlaunch Washrooms	843 Myng		
18	Echo (Spring Park)	Water Treatment Plant	98 Rockwell Dr	
25	290 Esplanade	459 naismith		
November				
1	Beach Washrooms	526 Driftwood	98 Rockwell Dr	
8	Public Works Office	973 Hotsprings Rd/Tap		
15	Peace Park	Community Garden	98 Rockwell Dr	
22	170 Cedar	442 Pine		
29	Boatlaunch Washrooms	843 Myng		
December				
6	Echo (Spring Park)	Water Treatment Plant	98 Rockwell Dr	
13	290 Esplanade	459 naismith		
20	Beach Washrooms	526 Driftwood	98 rockwell Dr	
27	Public Works Office	973 Hotsprings Rd/Tap		